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<b>UTILITY PATENT APPLICATION TRANSMITTAL</b> <small>(New Nonprovisional Application Under 37 CFR § 1.53(b))</small>	Attorney Docket No. <b>ZIL-568</b>
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**TO THE COMMISSIONER FOR PATENTS:**

Attached for filing is a patent application identified as follows:

Inventor: Daniel SauFu Mui  
 Assignee: ZiLOG, Inc.  
 Title: "RELAYING KEY CODE SIGNALS THROUGH A REMOTE CONTROL DEVICE"

- (X) Original Patent Application;  
 ( ) Continuing Application (prior applications not abandoned):  
 ( ) Continuation ( ) Divisional ( ) Continuation-in-part (CIP) of;  
 ( ) The specification contains a statement claiming the benefit of 35 USC § 119(e);

and including attachments as noted below:

- |  |                                     |
|--|-------------------------------------|
| x This transmittal letter (in duplicate)         | 1 Page Assignment (signed)          |
| 21 Pages of Specification                        | 1 Page Recordation Cover Sheet      |
| 6 Pages of Claims (including 24 numbered claims) | 1 Page Request not to Publish       |
| 1 Page Abstract                                  | x A check for filing fee (\$968.00) |
| 4 Pages of Drawings (formal)                     | x A return-receipt postcard         |
| 2 Pages Declaration/Power of Attorney (signed)   |                                     |

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CLAIMS AS FILED				
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Multiple Dependent Claims (if applicable)				
Assignment Recording Fee (if applicable)				\$40.00
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Respectfully submitted,

By: *Darien K. Wallace*  
 Darien K. Wallace, Attorney for Applicant  
 Reg. No. 53,736

Date: *December 16, 2003*

Correspondence Address:  
 Silicon Edge Law Group LLP  
 6601 Koll Center Parkway, Suite 245  
 Pleasanton, CA 94566  
 Phone: (925) 621-2121  
 Fax: (925) 621-2119

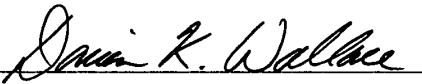
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<b>REQUEST AND CERTIFICATION UNDER 35 U.S.C. 122(b)(2)(B)(i)</b>	First Named Inventor	Daniel SauFu Mui
	Title	"Relaying Key Code Signals Through a Remote Control Device"
	Atty Docket Number	ZIL-568

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**RELAYING KEY CODE SIGNALS THROUGH A REMOTE  
CONTROL DEVICE**

Daniel SauFu Mui

**TECHNICAL FIELD**

[0001] The present invention relates generally to remote control devices and, more specifically, to relaying key code signals through a remote control device to operate an electronic consumer device.

**BACKGROUND**

[0002] Most households today possess multiple types of electronic consumer devices, such as televisions, stereo radios, digital video disk players, video cassette recorders, set-top cable television boxes and set-top satellite boxes. Manufacturers of such electronic devices typically supply a remote control device along with each electronic device. It is, therefore, common for a consumer who has multiple electronic devices to have multiple remote control devices.

[0003] A remote control device typically controls a selected electronic consumer device by transmitting infrared key code signals to the selected electronic consumer device. The infrared signals contain key codes of a codeset associated with the selected electronic consumer device. Each key code corresponds to a function of the selected electronic device, such as power on, power off, volume up, volume down, play, stop, select, channel up, channel down, etc. In order to avoid the situation where a



remote control device unintentionally operates an electronic consumer device that is associated with a different remote control device, manufacturers sometimes use distinct codesets for the communication between various electronic consumer devices and their associated remote control devices. The codesets can differ from each other not only by the bit patterns assigned to various functions of the associated electronic consumer device, but also by the timing information that describes how the key codes should be modulated onto carrier signals to generate key code signals.

[0004] Consumers may find it inconvenient to operate their electronic devices using multiple remote control devices. Thus, a consumer may wish to operate multiple electronic consumer devices using a single remote control device. A single remote control device can store many codesets so that the remote control device can control a corresponding large number of different electronic consumer devices. There are, however, thousands of codesets in use in electronic consumer devices today. Manufacturers of remote control devices, however, may wish to limit the memory on their remote control devices to a size that is insufficient to store the thousands of existing codesets.

[0005] A system is sought for enabling a remote control device to control a selected one of multiple different electronic consumer devices without requiring the codeset associated with the selected electronic consumer device to be stored on the remote control device.

#### SUMMARY

[0006] A system for relaying a key code through a remote control device to an electronic consumer device allows the

electronic consumer device to be controlled without storing the associated codeset on the remote control device. Upon receiving a keystroke indicator signal from a remote control device, a key code generator device, such as a set-top box, identifies the particular codeset usable to communicate with the selected electronic consumer device. The keystroke indicator signal contains an indication of a key on the remote control device that was pressed, which corresponds to a function of the selected electronic consumer device. Using the identified codeset and the indication of the pressed key, the key code generator device generates a key code and modulates that key code onto a radio frequency carrier signal, thereby generating a first key code signal. The remote control device receives the first key code signal from the key code generator device and modulates the key code onto an infrared frequency carrier signal, thereby generating a second key code signal. The remote control device relays the key code to the selected electronic consumer device in the second key code signal. The key code causes the selected electronic consumer device to perform the desired function. The key code is not stored on the remote control device in a permanent manner, but rather then key code is relayed through the remote control device.

[0007] In another embodiment, a third key code signal (which may, for example, be a radio frequency signal) is communicated directly from the key code generator device to an electronic consumer device. A key code contained in the third key code signal causes the electronic consumer device to perform a desired function.

[0008] In yet another embodiment, the system automatically determines which codeset is usable to communicate with a

selected electronic consumer device. The key code generator device sends key codes for one particular function from among a series of codesets one-by-one to the selected electronic consumer device. When the key code from one of the codesets causes the electronic consumer device to perform the desired function, electromagnetic noise is introduced into electrical power wiring through which both the electronic consumer device and the key code generator device receive power. When the key code generator device detects this noise on the electrical power wiring, the key code generator device identifies the codeset corresponding to the last transmitted key code to be the codeset usable to communicate with the selected electronic consumer device.

[0009] Other embodiments and advantages are described in the detailed description below. This summary does not purport to define the invention. The invention is defined by the claims.

#### BRIEF DESCRIPTION OF THE DRAWINGS

[0010] The accompanying drawings, where like numerals indicate like components, illustrate embodiments of the invention.

[0011] Figure 1 is a schematic diagram of a system for relaying key code signals through a remote control device.

[0012] Figure 2 is a flowchart of a method for relaying key code signals through a remote control device.

[0013] Figure 3 is an illustration of a key code transmitted within a key code signal.

[0014] Figure 4 is a waveform diagram of a first example of a key code signal transmitted by a remote control device in the system of figure 1.

[0015] Figure 5 is a waveform diagram of a second example of a key code signal transmitted by a remote control device in the system of figure 1.

[0016] Figure 6A is an illustration of a modulated digital zero and digital one within the key code signal of figure 5.

[0017] Figure 6B is a more detailed illustration of a mark of a modulated digital zero within the key code signal of figure 5.

#### DETAILED DESCRIPTION

[0018] Reference will now be made in detail to some embodiments of the invention, examples of which are illustrated in the accompanying drawings.

[0019] Figure 1 is a diagram of a system 10 for relaying a key code through a remote control device 11 to an electronic consumer device in accordance with the present invention. Figure 2 is a flowchart that illustrates a method of operation of system 10. System 10 includes a key code generator device 12, remote control device 11, a first electronic consumer device 13 and a second electronic consumer device 14. In this example, second electronic consumer device 14 is a television set.

[0020] In a first step (step 100), key code generator device 12 determines the appropriate codeset that controls the type, brand and model of the particular electronic consumer device that is to be controlled. A user uses remote control device 11 to respond to an on-screen display 15 on the screen of television set 14 to step through a sequence of menu screens to identify the codeset corresponding to the device that is to be controlled. The user does this by identifying, on on-screen display 15, the

type, brand and model of the particular electronic consumer device. In this example, the user is identifying first electronic consumer device 13, which is a video cassette recorder (VCR) manufactured by Sony with model number 8000. In figure 1, the user is identifying the device type by highlighting the choice "VCR" on the on-screen display. In another example, subsequent to controlling VCR 13, the user may wish to control television set 14, which is a "Gold" model manufactured by RCA. In that case, the user begins identifying television set 14 by highlighting the choice "TV".

[0021] In the present example, key code generator device 12 is a set-top box. Key code generator device 12 generates the on-screen displays and communicates with television set 14 such that key code generator device 12 identifies one of a plurality of codesets that corresponds to one of the electronic consumer devices identified by the user, such as VCR 13 or television set 14. System 10 uses the appropriate codeset to enable remote control device 11 to communicate with VCR 13 and television set 14.

[0022] Next (step 101), the user presses a key on remote control device 11. This key is associated with a function that the user wants performed by an electronic consumer device. For example, the function may be to turn on the power of VCR 13. When the user presses the "VCR power-on" key on remote control device 11, remote control device 11 transmits a keystroke indicator signal 16 from a radio frequency (RF) transmitter 17 on remote control device 11. Alternatively, two or more keys on remote control device 11 may be associated with a single function, such as turning on the power of VCR 13. In that case, the user presses a "VCR" key and then a "power-on" key to cause remote control

device 11 to transmit keystroke indicator signal 16. Keystroke indicator signal 16 is transmitted as a signal in a radio frequency band to an RF receiver 18 on key code generator device 12.

[0023] There are multiple forms in which an indication of the pressed key, as well as the identity of the electronic consumer device that is to perform the associated function, can be communicated in keystroke indicator signal 16 from remote control device 11 to key code generator device 12. In one embodiment, the indication of the pressed key is a key code comprised of a standardized system code and standardized key data. In the present example, the standardized system code identifies the type of electronic consumer device that is to be controlled, such as a TV, a VCR, a DVD player, a stereo amplifier, a satellite receiver or a cable receiver. The standardized system code and key data are part of a commonly used codeset that is stored on remote control device 11. Remote control device 11 uses any one of a number of commonly used modulation techniques to modulate the system code and key data to form keystroke indicator signal 16. For example, a microcontroller on remote control device 11 uses timing information associated with the commonly used codeset to generate a pulse width modulated keystroke indicator signal 16.

[0024] In another embodiment, the indication of the pressed key includes a proprietary identification code identifying the pressed key, as well as a proprietary identification code corresponding to the type of the electronic consumer device that is to be controlled. The proprietary identification codes are understood by key code generator device 12, but are not standardized codes that are understood by electronic consumer devices. Remote control

device 11 uses any one of a number of commonly used modulation techniques to modulate the proprietary identification codes onto keystroke indicator signal 16.

[0025] Whether remote control device 11 communicates with key code generator device 12 through a standardized codeset or through proprietary identification codes, codes may be included that do not correspond to pressed keys or functions that are to be performed on electronic consumer devices. For example, in response to receiving any signal from remote control device 11, key code generator device 12 may return a code to remote control device 11 causing a light emitting diode (LED) display on remote control device 11 to turn on.

[0026] Next (step 102), key code generator device 12 determines which key code of the codeset previously identified in step 100 corresponds to the pressed key.

[0027] Figure 3 illustrates one example of a key code from a commonly used codeset. The key code is comprised of a standardized system code and standardized key data. Both the system code and the key data are digital values. The 12-bit key code includes a 4-bit system code [0101] and 8-bit key data [00011100]. In the present example, the key code is the key code in the identified codeset that corresponds to the "VCR power-on" key of remote control device 11.

[0028] Next (step 103), key code generator device 12 modulates the key code for the power-on function of VCR 13 onto a first carrier signal, thereby generating a first key code signal 19. In this example, the first carrier signal is an RF signal. An RF signal for purposes of this patent document is an electromagnetic signal having a frequency between thirty hertz and three hundred gigahertz.

[0029] Figure 4 and figure 5 illustrate key code signal 19 in two specific embodiments. In both embodiments, the key code is transmitted as a stream of digital values 010100011100, where the system code is transmitted first immediately followed by the key data without any place holders between them. The standardized system code determined in step 102 need not identify the brand or model of VCR 13, but only the fact that first electronic consumer device 13 is a VCR. The key code is modulated in step 103 using timing information associated with the codeset for VCR 13. Thus, the particular brand and model of VCR 13 is able to understand the key code modulated using the appropriate timing information.

[0030] In the embodiment of figure 4, key code signal 19 is a 15-bit binary transmission whose bit pattern appears as a universal asynchronous receiver and transmitter (UART) type communication. The binary transmission begins with a start bit and ends with a parity bit and a stop bit. The parity bit is calculated based on the 12-bit key code within the binary transmission. In this example, the value of the parity bit is a digital zero. An intermediary signal is transmitted over the first carrier signal at an intermediary frequency (for example, 100 kHz) to communicate a digital one. The absence of the intermediary signal indicates a digital zero. The intermediary signal has a lower frequency than the first carrier signal.

[0031] In the embodiment of figure 5, the 12-bit key code is modulated onto key code signal 19 using pulse width modulation. Digital ones and zeros are characterized by pairs of marks and spaces. The period between successive leading edges of the bursts in a mark is the period of an



intermediary signal. The intermediary signal has an intermediary frequency. In a space, there are no bursts.

[0032] Figure 6A shows a digital zero and a digital one in key code signal 19 of figure 5 in more detail. A "mark/space" pair represents a digital zero and another "mark/space" pair represents a digital one. The marks and spaces of each pair have predetermined lengths. In the embodiment of figure 5, the mark length of a digital zero is 490 microseconds, and the mark length of a digital one is 3940 microseconds. The space length of a digital zero is 950 microseconds, and the space length of a digital one is 2000 microseconds.

[0033] Figure 6B shows the bursts of the first carrier signal that comprise the intermediary signal in more detail. In the embodiment of figure 5, the bursts that comprise the intermediary signal occur every ten microseconds, resulting in an intermediary frequency of 100 kilohertz. The duty cycle of the intermediary signal is characterized by an "on time" of four microseconds and an "off time" of six microseconds. There are forty-nine bursts of the carrier signal within each mark length of 490 microseconds.

[0034] Timing information other than that shown in the embodiment of figure 5 can also be used. For example, one common form of pulse width modulation uses an intermediary signal having a frequency of about 38.5 kilohertz. Each period of the intermediary signal has an "on time" of ten microseconds and an "off time" of sixteen microseconds. If such an intermediary signal were used to generate a 490 microsecond mark length of a digital zero shown in figure 6A, there would be 19 bursts of the intermediary signal in the mark. Similarly, if such an intermediary signal were

used to generate a 3940 microsecond mark length of a digital one shown in figure 6A, there would be 151 bursts of the intermediary signal in the mark.

[0035] Next (step 104), an RF transmitter 20 of key code generator device 12 transmits first key code signal 19 in the form of an RF transmission to an RF receiver 21 on remote control device 11.

[0036] Next (step 105), remote control device 11 receives first key code signal 19 and relays the key code communicated by first key code signal 19 to VCR 13 in the form of a second key code signal 22. Remote control device 11 is a slave to key code generator device 12. Remote control device 11 relays the key code by receiving first key code signal 19 in RF form and translating the communicated key code so that the key code is modulated onto a second carrier signal resulting in second key code signal 22. In this example, the second carrier signal is an infrared signal with a frequency in the range between three hundred gigahertz and three hundred terahertz. Second key code signal 22 is transmitted by an IR transmitter 23 on remote control device 11 to VCR 13. In the embodiment of figure 5, key code signal 19 is converted into key code signal 22 by forming the bursts of the intermediary signal using the second carrier signal with an infrared frequency in the place of the first carrier signal with a radio frequency. For both key code signal 19 and key code signal 22, digital ones and digital zeros are modulated using the same timing for "mark/space" pairs. The waveform diagram of key code signal 22 appears the same as the waveform diagram shown in figure 5 for key code signal 19; only the frequency of the carrier signal that forms the bursts is different.

[0037] Next (step 106), second key code signal 22 is received onto electronic consumer device (VCR) 13 by an IR receiver 24.

[0038] Next (step 107), IR receiver 24 on VCR 13 recovers the key code from second key code signal 22. VCR 13 is thereby instructed to perform the function desired by the user. In this example, the function is to power on VCR 13. Other key codes, however, correspond to other functions, such as power off, channel advance, channel back, volume up, volume down, cursor up, cursor down, cursor right, cursor left, select, play, record, stop, forward, rewind and pause.

[0039] In a second example, an electronic consumer device is controlled by an RF key code signal transmitted from key code generator device 12. Subsequent to controlling VCR 13, the user wishes to control second electronic consumer device 14, which is a "Gold" model RCA television set. In the second example, the user uses the on-screen display 15 to identify the type (TV), brand (RCA) and model (Gold) of second electronic consumer device 14. Key code generator device 12 determines the appropriate codeset that controls television set 14. The user then presses a key on remote control device 11 associated with a function that the user wants performed by television set 14. For example, the function is to advance the channel of television set 14. When the user presses the channel advance key on remote control device 11, an indication of the pressed key is transmitted in an RF keystroke indicator signal from remote control device 11 to key code generator device 12.

[0040] Key code generator device 12 then determines which key code of the identified codeset corresponds to the pressed key. Key code generator device 12 modulates the

key code for the channel advance function onto an RF carrier signal, thereby generating a third key code signal 25. Key code generator device 12 uses the same modulation technique to generate both third key code signal 25 and first key code signal 19. Third key code signal 25 is modulated using timing information associated with the codeset that controls RCA Gold television set 14.

[0041] In this second example, television set 14 has an RF receiver 26 and is capable of receiving RF key code signals. RF transmitter 20 of key code generator device 12 transmits third key code signal 25 directly to television set 14. Third key code signal 25 is received onto television set 14 by RF receiver 26, and RF receiver 26 recovers the key code from third key code signal 25. Television set 14 is thereby instructed to advance the channel.

[0042] Although remote control device 11 in the first example stores either a proprietary codeset or a standardized codeset and uses that codeset to generate keystroke indicator signal 16, remote control device 11 stores only that single codeset. This codeset is the codeset used by key code generator device 12 to receive communications from remote control device 11. Remote control device 11 can therefore be made inexpensively and may contain a relatively small amount of memory. The memory may, for example, be read only memory (ROM) on a microcontroller integrated circuit (for example, a Z8 microcontroller available from Zilog, Inc. of San Jose, CA.)

[0043] Even though remote control device 11 stores only a single codeset, system 10 of figure 1 nevertheless allows remote control device 11 to control the desired electronic

consumer device 13, which may use any one of thousands of different codesets. Key code generator device 12 may, for example, include a hard disk or other mass storage device that stores thousands of possible codesets. The user may use remote control device 11 to select any one of those codesets for communication with the particular electronic consumer device 13. In comparison to some conventional systems where codesets are downloaded into a universal remote control device from a personal computer or other device that is not normally part of an entertainment system, system 10 uses preexisting hardware of the entertainment system (such as the on-screen display functionality, data storage capability, and wireless communication ability of the set-top box) to source and identify codesets.

[0044] Although the specific embodiments of figures 1 and 2 are explained above in connection with the codesets being identified to the key code generator device 12 using an on-screen display, the codeset usable to communicate with an electronic consumer device may be identified to key code generator device 12 in other ways in other embodiments. In one embodiment, for example, the key code generator device includes autoscan functionality. Key code generator device 12 includes an EMI detector 27 that detects electromagnetic interference (EMI) or noise on power cord 28. Power cord 28 is a power cord through which key code generator device 12 receives electrical power from a wall socket 29. Similarly, television set 14 receives power from another wall socket 30 via a power cord 31. VCR 13 receives power from a wall socket 32 via another power cord 33. In accordance with the autoscan functionality, key code generator device 12 identifies the codeset used to

communicate with a particular electronic consumer device by generating and transmitting a sequence of key code signals relayed through remote control device 11 to the electronic consumer device to be controlled (in this case VCR 13). Each of these key code signals contains a different key code corresponding to the same desired function on different device types, brands and models.

[0045] In one example, the desired function is the function of powering on VCR 13. The key code generator device 12 sends the power-on key codes for each of a series of codesets one-by-one to VCR 13. When the key code for one of the codesets causes VCR 13 to perform the desired function (in this case, to power on), VCR 13 introduces noise or other electromagnetic interference via cord 33 into wall socket 32. The power terminal within wall socket 32 is connected through wiring 34 to the power terminal in wall socket 29. The noise generated by VCR 13 is therefore communicated through wiring 34, the power terminal of wall socket 29 and power cord 28 to EMI detector 27 on key code generator device 12. When key code generator device 12 detects the electromagnetic interference on power cord 28, key code generator device 12 automatically identifies the codeset used by VCR 13 as the codeset used to communicate the last key code signal for the power-on function.

[0046] Multiple electronic consumer devices may have the same key data for a particular function, for example, the power-on function. A key code, however, also contains a system code (see figure 3) that corresponds to a particular type of electronic consumer device. For example, the system code used for a television set will typically be different than the system code used for a video cassette recorder. Thus, different device types that use the same

key data for the power-on function will not respond to a key code containing an incorrect system code. Each of the power-on key codes transmitted in this example by key code generator device 12 contains the system code for a video cassette recorder, so television set 14 does not recognize the key codes. Because key code generator device 12 is aware of the system code communicated, key code generator device 12 determines that it was VCR 13 that was powered on and not television 14.

[0047] In another example, the codeset usable to communicate with VCR 13 is identified to key code generator device 12 using autoscanner functionality that does not involve key code generator device 12 having a specialized EMI detection circuit. In that case, the user may be prompted by successive screens of on screen display 15 to push the power-on key on remote control device 11 multiple times. Each time the power-on key is pressed, keystroke indicator signal 16 communicates this to key code generator device 12. Key code generator device 12 in turn generates and transmits a key code signal containing a power-on key code using a different codeset. Each key code signal is relayed through remote control device 11 to the particular electronic consumer device to be controlled. One by one the user is prompted to push the power-on key, and key code generator device 12 in turn generates key codes using different codesets until the electronic consumer device performs a desired function. In this case, first electronic consumer device 13 turns on. The user is prompted not to press the power-on key once the user sees the desired function being performed by first electronic consumer device 13. In the present example, light emitting diodes (LEDs) on the face of VCR 13 may be illuminated to

indicate to the user that VCR 13 has powered on. When the user stops pressing the power-on key, then the key code generator device 12 identifies the codeset of the last transmitted key code to be the codeset used by the electronic consumer device.

[0048] In another example, the user presses keys on remote control device 11 to communicate to key code generator device 12 a 3-digit codeset identification number identifying the codeset. The user may determine this codeset identification number by looking up the codeset identification number in a booklet supplied along with the electronic consumer device to be controlled.

Alternatively, a table of manufacturers, model numbers and their associated codesets may be used to lookup the codeset identification number.

[0049] In an embodiment where key code generator device 12 is a set-top box, the set-top box receives a video input signal 35 from a cable television coaxial cable 36. Video input signal 35 is ultimately delivered to television set 14 through cables 37. Coaxial cable 36 is also used to provide networking connectivity between the set-top box and a network 38. Network 38 may, for example, be or include the Internet. A database of codesets 39 is maintained at a remote location. As new electronic consumer devices are introduced onto the market, new codesets may be necessary to communicate with these new devices. So that one such new codeset can be distributed from database of codesets 39 when a new electronic consumer device is introduced into the market, this new codeset is communicated via network 38 and coaxial cable 36 to key code generator device 12. The new codeset is then stored on a mass storage hard disk within the set-top box. In this way, the pre-existing and



inexpensive remote control device 11 can be used to control a new electronic consumer device whose required codeset did not exist at the time remote control device 11 and key code generator device 12 were delivered to the user.

[0050] In yet another embodiment, remote control device 11 is a learning remote control device that includes an IR detector 40. In accordance with one method, the learning remote control device 11 is placed so that IR detector 40 can receive an IR transmission from an IR transmitter of another remote control device. Keys corresponding to key codes to be learned are pressed on the other remote control device such that successive key code signals are transmitted from the IR transmitter of the other remote control device to IR detector 40 of the learning remote control device 11. Learning remote control device 11 detects when the envelope of the bursts of the received IR signal changes from low to high and high to low. The time duration between each successive transition is stored such that a key code signal is recorded as timing information for a series of mark lengths and space lengths. As the various keys of the remote control device to be learned are pressed, learning remote control device 11 records successive strings of timing information. The resulting strings of timing information, once collected on learning remote control device 11, are automatically transmitted from learning remote control device 11 in the form of RF signals to key code generator device 12. Key code generator device 12 in turn communicates the captured strings of timing information through coaxial cable 36 and network 38 to database of codesets 39. Personnel maintaining database of codesets 39 then analyze the timing information and generate a codeset that describes the key

codes captured by learning remote control device 11. In this way, a new codeset containing key data, systems codes and timing information is added to database of codesets 39. Rather than storing the information as a new codeset that includes separate key codes and timing information, the information for each keystroke can be stored in database of codesets 39 in the form of interval times.

[0051] A single system 10 is therefore described that can support numerous different types of electronic consumer devices that can use multiple different codesets. The remote control device 11 of the system need not include a large memory and stored many codesets. Rather, the remote control device 11 need only relay individual key codes. Remote control device 11 can therefore be a relatively inexpensive device that includes only a small amount of memory. In addition to requiring only a small amount of memory, the very same remote control device 11 can control an electronic consumer device that uses a codeset or protocol that was not in existence at the time the remote control device 11 was delivered to the user. The amount of writable memory (for example, random access memory (RAM) or flash memory) on the remote control device 11 may be so little that it may not be adequate to store a conventional codeset. The bulk of the memory of the remote control device 11 may be relatively inexpensive mask-programmable read only memory (ROM). By reducing the amount of writable memory on remote control device 11, the cost of remote control device 11 is reduced.

[0052] Although the present invention has been described in connection with certain specific embodiments for instructional purposes, the present invention is not limited thereto. Although the method is described above in

connection with an inexpensive remote control device whose primary purpose is to control an electronic consumer device, the method can be employed in connection with other types of devices. Due to the limited amount of memory and intelligence required of the remote control device in the present method, the functionality of remote control device 11 can be incorporated into an RF-enabled device (such as a cell phone or RF-enabled personal digital assistant (PDA) or RF-enabled wrist watch or RF-enabled keyboard) without significantly increasing the cost of the device. The first carrier signal used to communicate between the remote control device and the key code generator device need not be an RF signal, and the second carrier signal used to communicate between the remote control device and the electronic consumer device need not be an IR signal. Both the first and second carrier signals can be the same type of signals, for example IR signals. The key code generator device can transmit key codes to the electronic consumer device to be controlled via a hardwired connection rather than a wireless link. The type of key code signal relayed through the remote control device is not limited to any particular protocol.

[0053] Although key code generator device 12 is a set-top box in the embodiment of figure 1 above, in other embodiments the key code generator device 12 is another type of electronic consumer device such as, for example, a television, a stereo radio, a digital video disk player, a video cassette recorder, a personal computer, a set-top cable television box or a set-top satellite box. Although the keystroke indicator signal can be an indication of a pressed key where there is a one-to-one relationship between the key and a function to be performed, in other

embodiments a keystroke indicator signal indicates a selected function that is not associated with a specific key on the remote control device. For example, a function can be selected choosing a function from a menu that is displayed on the remote control device. Accordingly, various modifications, adaptations, and combinations of various features of the described embodiments can be practiced without departing from the scope of the invention as set forth in the claims.

## CLAIMS

What is claimed is:

1. A method comprising:
  - (a) receiving a keystroke indicator signal from a remote control device;
  - (b) generating a key code within a key code generator device;
  - (c) modulating said key code onto a carrier signal, thereby generating a key code signal; and
  - (d) transmitting said key code signal from said key code generator device.
2. The method of Claim 1, wherein said key code signal is transmitted in (d) from said key code generator device to said remote control device.
3. The method of Claim 1, wherein said key code signal is transmitted in (d) from said key code generator device to an electronic consumer device.
4. The method of Claim 1, wherein said key code consists of a binary number.
5. The method of Claim 1, wherein said key code comprises a binary number and timing information, and wherein said timing information defines how said binary number is modulated in (c) onto said carrier signal.

6. The method of Claim 1, further comprising:

(e) pressing a power-on key of said remote control device causing said remote control device to transmit said keystroke indicator signal that is received in (a), wherein said key code signal transmitted in (d) is received onto an electronic consumer device, and wherein said pressing in (e) causes said electronic consumer device to turn on.

7. The method of Claim 1, wherein said carrier signal is in a radio frequency band, wherein said key code signal is received by said remote control device, and wherein said method further comprises:

(e) modulating said key code onto a second carrier signal, thereby generating a second key code signal, said modulating being performed on said remote control device wherein said second carrier signal is in an infrared frequency band; and

(f) transmitting said second key code signal from said remote control device to an electronic consumer device.

8. The method of Claim 7, further comprising:

(g) pressing a power-on key of said remote control device causing said remote control device to transmit said keystroke indicator signal that is received in (a), wherein the pressing in (g) causes said electronic consumer device to turn on.

9. The method of Claim 1, wherein said key code generated in (b) is part of a codeset, and wherein said remote control device does not store said codeset.

10. The method of Claim 9, wherein said codeset comprises timing information and a plurality of key codes, and wherein said timing information describes a digital one and a digital zero.

11. The method of Claim 1, wherein a codeset comprises a plurality of key codes, each one of said plurality of key codes corresponding to a function of an electronic consumer device, and wherein no more than a single one of said plurality of key codes is present on said remote control device at any given time.

12. The method of Claim 11, wherein said function of said electronic consumer device is taken from the group consisting of: power on, power off, channel advance, channel back, volume up, volume down, cursor up, cursor down, cursor right, cursor left, select, play, record, stop, forward, back and pause.

13. A device comprising:

a receiver that receives a first key code signal, wherein said first key code signal is generated by modulating a key code onto a first carrier signal, said first carrier signal falling within a radio frequency band;

a transmitter that transmits a second key code signal, wherein said second key code signal is generated by modulating said key code onto a second carrier signal, said second carrier signal falling within an infrared frequency band; and

a keypad that includes a key that corresponds to said key code, wherein said key code corresponds to a function of an electronic consumer device.

14. The device of Claim 13, wherein said key code corresponds to a second function of a second electronic consumer device, as well as to said function of said electronic consumer device.

15. The device of Claim 14, wherein said transmitter transmits a third key code signal, and wherein said third key code signal is generated by modulating said key code onto a third carrier signal.

16. The device of Claim 14, wherein said key code comprises a first binary number and a second binary number, said first binary number corresponding to said function, and said second binary number corresponding to said second function.

17. The device of Claim 13, wherein said keypad includes a second key that corresponds to a second key code, wherein a third key code signal is generated by modulating said second key code onto a third carrier signal, wherein said third key code signal is received by said receiver, and wherein both said first key code and said second key code are not both stored in said device at the same time.

18. The device of Claim 13, wherein a codeset comprises timing information and a plurality of key codes, wherein each of said plurality of key codes corresponds to a different function of said electronic consumer device, wherein said key code is a binary number, and wherein said timing information defines how said binary number is modulated onto said first carrier signal.



19. A system comprising:

a key code generator device that generates a first key code and a second key code, wherein a codeset is stored on said key code generator device, said codeset including said first key code and said second key code, wherein said first key code corresponds to a selected function of a first electronic consumer device, and wherein said second key code corresponds to said selected function of a second electronic consumer device; and

means for relaying said first key code and said second key code from said key code generator device to said first electronic consumer device and to said second electronic consumer device without simultaneously storing both said first key code and said second key code on said means.

20. The system of Claim 19, wherein said selected function is taken from the group consisting of: power on, power off, channel advance, channel back, volume up, volume down, cursor up, cursor down, cursor right, cursor left, select, play, record, stop, forward, back and pause.

21. The system of Claim 19, wherein said selected function is power on, and wherein said system automatically determines when said first electronic consumer device powers on.

22. A remote control device, comprising:

an RF receiver;

an IR transmitter; and

means for receiving a key code from said RF receiver and for sending said key code to said IR transmitter such

that said key code is modulated onto an IR carrier signal, said IR carrier signal with said key code modulated thereon being transmitted from said remote control device by said IR transmitter.

23. The remote control device of Claim 22, wherein said key code is not stored on said remote control device immediately prior to said means receiving the key code.

24. The remote control device of Claim 22, wherein said means is a microcontroller.

**RELAYING KEY CODE SIGNALS THROUGH A REMOTE  
CONTROL DEVICE**

Daniel SauFu Mui

**ABSTRACT OF THE DISCLOSURE**

Upon receiving a keystroke indicator signal from a remote control device, a key code generator device identifies a codeset usable to communicate with a selected consumer device. The keystroke indicator signal contains an indication of a pressed key, which corresponds to a function of the selected consumer device. Using the identified codeset and the key indication, the key code generator device generates a key code and modulates that key code onto a radio frequency carrier signal, thereby generating a first key code signal. The remote control device receives the first key code signal from the key code generator device and modulates the key code onto an infrared frequency carrier signal, thereby generating a second key code signal. The remote control device relays the key code to the selected consumer device in the second key code signal. The key code causes the selected consumer device to perform the desired function.

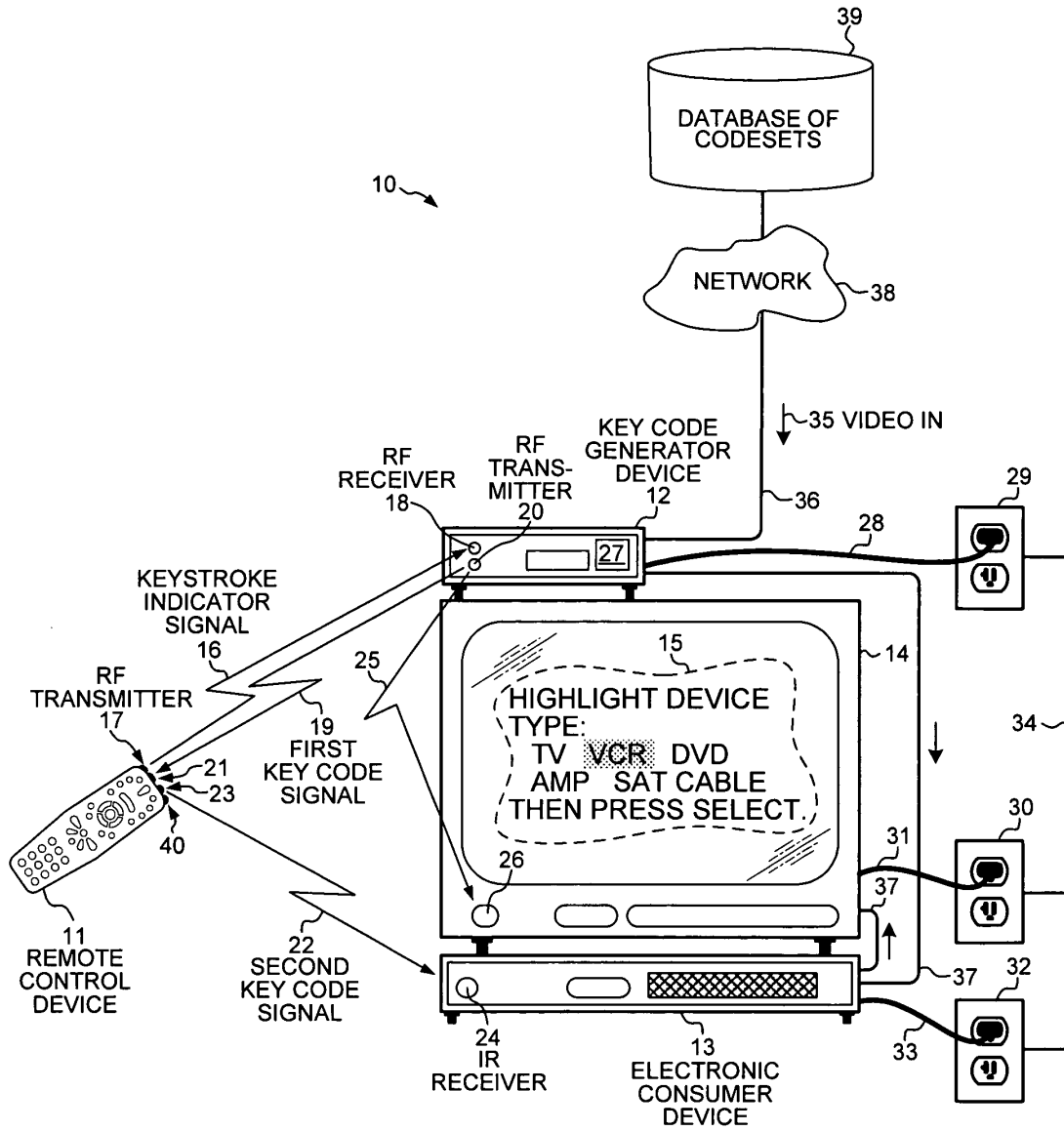


FIG. 1

2/4

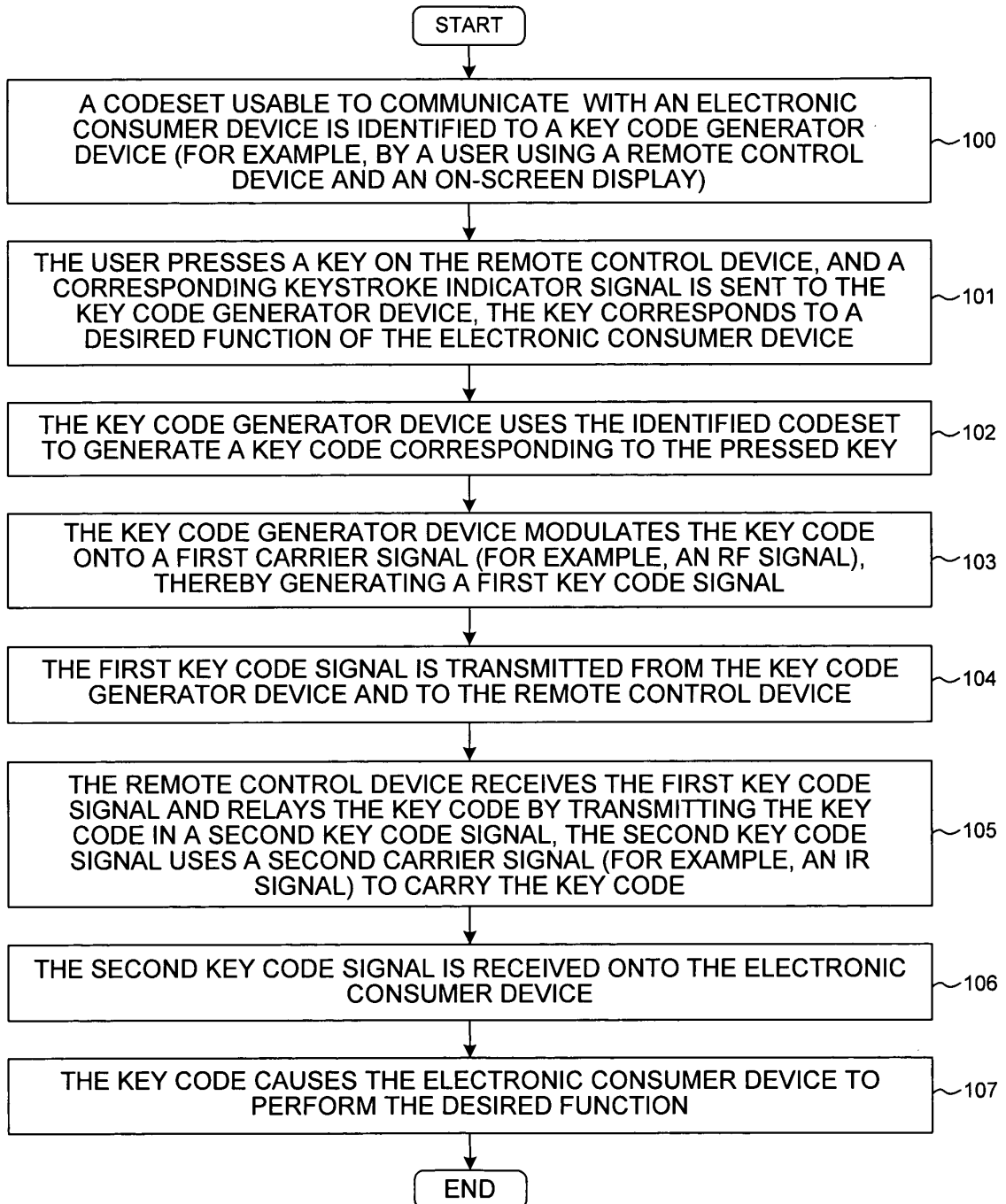
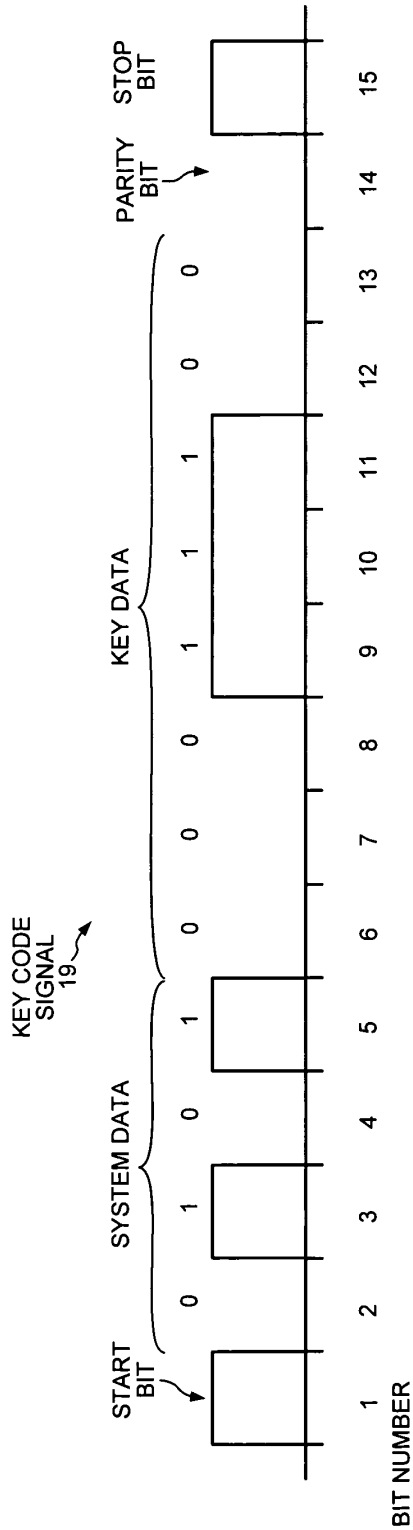
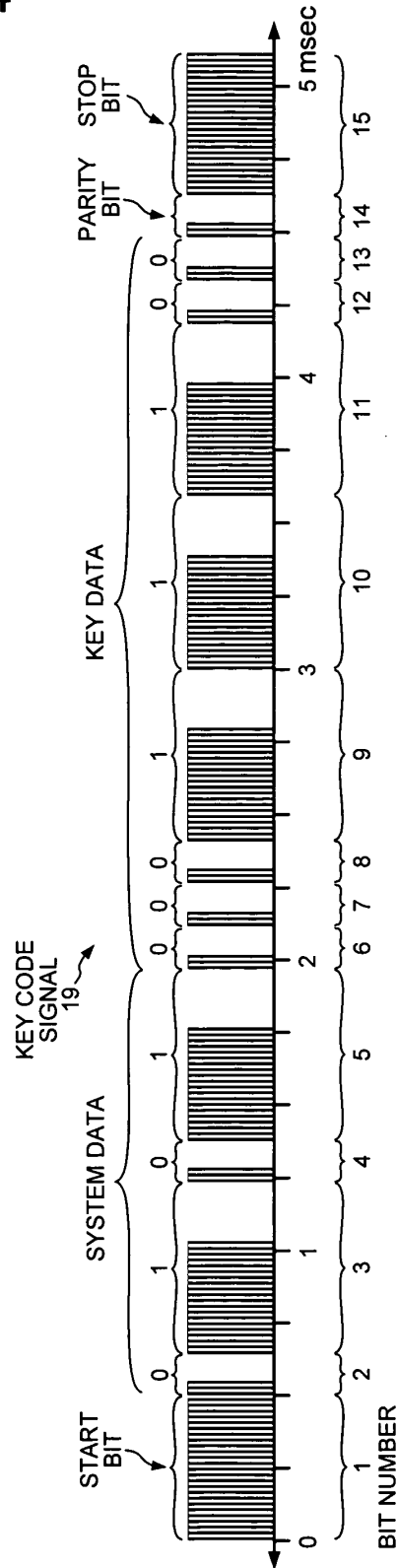


FIG. 2



**BINARY TRANSMISSION**  
**FIG. 4**

3/4



**PULSE WIDTH MODULATION**  
**FIG. 5**

4/4

0 1 0 1 0 0 0 1 1 1 0 0

SYSTEM CODE      KEY DATA

KEY CODE  
FIG. 3

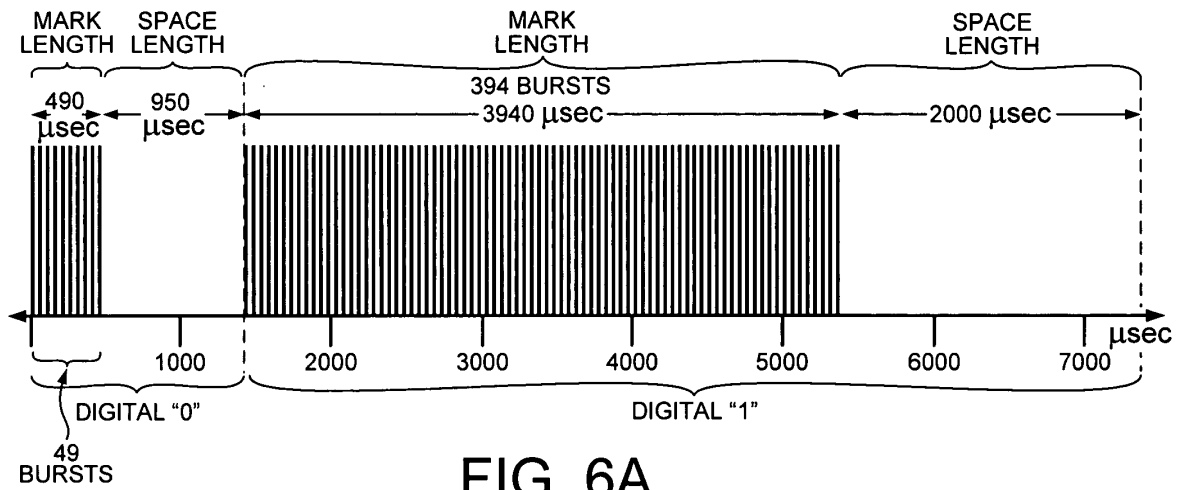


FIG. 6A

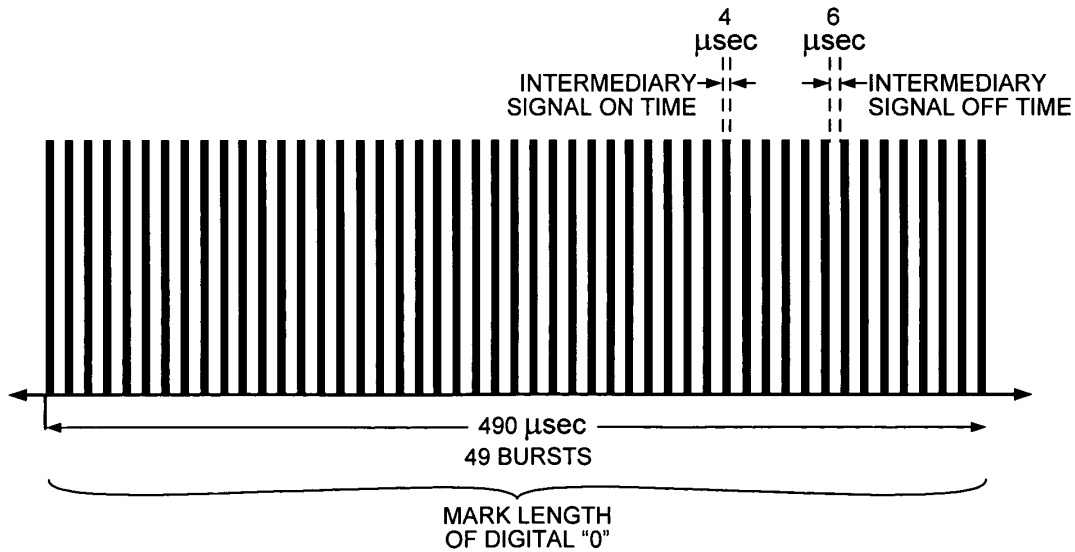


FIG. 6B

**DECLARATION AND POWER OF ATTORNEY FOR PATENT APPLICATION**

As a below named inventor, I hereby declare that:

My residence, post-office address, and citizenship are as stated below next to my name. I believe I am the original, first and sole inventor (if only one name is listed below), or an original, first and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought by way of the application entitled:

**"RELAYING KEY CODE SIGNALS THROUGH A REMOTE CONTROL DEVICE"**

which (check)  is attached hereto.  
 and is amended by the Preliminary Amendment attached hereto.  
 was filed on \_\_\_\_\_ as Application Serial No. \_\_\_\_\_  
 and was amended on \_\_\_\_\_ (if applicable).

I hereby state that I have reviewed and understood the contents of the above-identified specification, including the claims, as amended by any amendment referred to above. I acknowledge the duty to disclose all information which is material to patentability as defined in 37 CFR 1.56.

**Foreign Application(s) and/or Claim of Foreign Priority**

I hereby claim foreign priority benefits under Title 35, United States Code Section 119(a)-(d), of any foreign application(s) for patent or inventor's certificate, or any PCT international application(s) designating at least one country other than the United States of America listed below, and have also identified below any foreign application(s) for patent or inventor's certificate or an PCT international application(s) designating at least one country other than the United States of America filed by me on the same subject matter having a filing date before that of the application(s) on which priority is claimed:

APPLICATION NUMBER	COUNTRY	DAY/MONTH/YEAR FILED	PRIORITY CLAIMED UNDER 35 U.S.C. 119
N/A			YES:___ NO:___
			YES:___ NO:___

**Provisional Application**

I hereby claim the benefit under Title 35, United States Code Section 119(e) of any United States provisional application(s) listed below:

APPLICATION SERIAL NUMBER	FILING DATE
N/A	

**U.S. Priority Claim**

I hereby claim the benefit under Title 35, United States Code, Section 120 of any United States application(s) or PCT international application(s) designating the United States of America listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States application(s) in the manner provided by the first paragraph of Title 35, United States Code Section 112, I acknowledge the duty to disclose material information as defined in Title 37, Code of Federal Regulations, Section 1.56(a) which became available between the filing date of the prior application(s) and the national or PCT international filing date of this application:

APPLICATION SERIAL NUMBER	FILING DATE	STATUS (patented/pending/abandoned)
N/A		



**POWER OF ATTORNEY:**

As a named inventor, I hereby appoint the following attorney(s) and/or agent(s) listed below to prosecute this application and transact all business in the Patent and Trademark Office connected therewith.

T. Lester Wallace, Reg. No. 34,748  
Darien K. Wallace, Reg. No. 53,736

<b>Send Correspondence to:</b>  Silicon Edge Law Group LLP Attn: T. Lester Wallace 6601 Koll Center Parkway, Suite 245 Pleasanton, CA 94566	<b>Direct Telephone Calls To:</b>  Lester Wallace Tel: (925) 621-2115 Fax: (925) 621-2119
--	---


I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

**Full Name of Inventor:** Daniel SauFu Mui

**Citizenship:** Singapore

**Residence:** 1625 Brookvale Dr. #3  
San Jose, CA 95129

**Post Office Address:** Same as above

  
\_\_\_\_\_  
Inventor's Signature

12/15/2003  
\_\_\_\_\_  
Date

PATENT APPLICATION SERIAL NO. \_\_\_\_\_

U.S. DEPARTMENT OF COMMERCE  
PATENT AND TRADEMARK OFFICE  
FEE RECORD SHEET

12/18/2003 STEUHEL1 00000084 10737029

01 FC:1001	770.00 OP
02 FC:1202	72.00 OP
03 FC:1201	86.00 OP

PTO-1556  
(5/87)

**PATENT APPLICATION FEE DETERMINATION RECORD**  
Effective October 1, 2003

Application or Docket Number

*21C-568*

**CLAIMS AS FILED - PART I**

	(Column 1)	(Column 2)
TOTAL CLAIMS	<i>24</i>	
FOR	NUMBER FILED	NUMBER EXTRA
TOTAL CHARGEABLE CLAIMS	<i>24</i> minus 20 = *	<i>4</i>
INDEPENDENT CLAIMS	<i>4</i> minus 3 = *	<i>1</i>
MULTIPLE DEPENDENT CLAIM PRESENT <input type="checkbox"/>		

SMALL ENTITY TYPE  OR OTHER THAN SMALL ENTITY

RATE	FEE	OR	RATE	FEE
BASIC FEE	385.00		BASIC FEE	770.00
XS 9=			XS18=	<i>72</i>
X43=			X86=	<i>86</i>
+145=			+290=	<i>0</i>
TOTAL			TOTAL	<i>928</i>

\* If the difference in column 1 is less than zero, enter "0" in column 2

**CLAIMS AS AMENDED - PART II**

	(Column 1)	(Column 2)	(Column 3)
AMENDMENT A	CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR
	Total	*	Minus
	Independent	*	Minus
	FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM <input type="checkbox"/>		

SMALL ENTITY OR OTHER THAN SMALL ENTITY

RATE	ADDITIONAL FEE	OR	RATE	ADDITIONAL FEE
XS 9=			XS18=	
X43=			X86=	
+145=			+290=	
TOTAL ADDIT. FEE			TOTAL ADDIT. FEE	

	(Column 1)	(Column 2)	(Column 3)
AMENDMENT B	CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR
	Total	*	Minus
	Independent	*	Minus
	FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM <input type="checkbox"/>		

RATE	ADDITIONAL FEE	OR	RATE	ADDITIONAL FEE
XS 9=			XS18=	
X43=			X86=	
+145=			+290=	
TOTAL ADDIT. FEE			TOTAL ADDIT. FEE	

	(Column 1)	(Column 2)	(Column 3)
AMENDMENT C	CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR
	Total	*	Minus
	Independent	*	Minus
	FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM <input type="checkbox"/>		

RATE	ADDITIONAL FEE	OR	RATE	ADDITIONAL FEE
XS 9=			XS18=	
X43=			X86=	
+145=			+290=	
TOTAL ADDIT. FEE			TOTAL ADDIT. FEE	

\* If the entry in column 1 is less than the entry in column 2, write "0" in column 3.  
 \*\* If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20."  
 \*\*\* If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3."  
 The "Highest Number Previously Paid For" (Total or Independent) is the highest number found in the appropriate box in column 1.



13049 U.S. PTO  
121603

<b>UTILITY PATENT APPLICATION TRANSMITTAL</b> <small>(New Nonprovisional Application Under 37 CFR § 1.53(b))</small>	Attorney Docket No. <b>ZIL-568</b>
---	---------------------------------------

**TO THE COMMISSIONER FOR PATENTS:**

Attached for filing is a patent application identified as follows:

Inventor: Daniel SauFu Mui  
Assignee: ZiLOG, Inc.  
Title: "RELAYING KEY CODE SIGNALS THROUGH A REMOTE CONTROL DEVICE"

- (X) Original Patent Application;  
( ) Continuing Application (prior applications not abandoned);  
( ) Continuation ( ) Divisional ( ) Continuation-in-part (CIP) of;  
( ) The specification contains a statement claiming the benefit of 35 USC § 119(e);

and including attachments as noted below:

- |  |                                     |
|--|-------------------------------------|
| x This transmittal letter (in duplicate)         | 1 Page Assignment (signed)          |
| 21 Pages of Specification                        | 1 Page Recordation Cover Sheet      |
| 6 Pages of Claims (including 24 numbered claims) | 1 Page Request not to Publish       |
| 1 Page Abstract                                  | x A check for filing fee (\$968.00) |
| 4 Pages of Drawings (formal)                     | x A return-receipt postcard         |
| 2 Pages Declaration/Power of Attorney (signed)   |                                     |

22581 U.S. PTO  
10/737029  
  
121603

CLAIMS AS FILED				
FOR	NO. FILED	NO. EXTRA	RATE	FEE
Total Claims	24	4	\$18.00	\$72.00
Independent Claims	4	1	\$86.00	\$86.00
Multiple Dependent Claims (if applicable)				
Assignment Recording Fee (if applicable)				\$40.00
Basic Filing Fee				\$770.00
Total Filing Fee				\$968.00

I hereby certify that this is being deposited with the U.S. Postal Service as "Express Mail Post Office to Addressee" service under 37 CFR § 1.10 on the date indicated below and is addressed to:

Mail Stop Patent Application  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

By: *Darien K. Wallace*  
Typed Name: Darien K. Wallace

Express Mail Label No.: ER 452602378 US

Date of Deposit: December 16, 2003

Respectfully submitted,

By: *Darien K. Wallace*  
Darien K. Wallace, Attorney for Applicant  
Reg. No. 53,736

Date: *December 16, 2003*

Correspondence Address:  
Silicon Edge Law Group LLP  
6601 Koll Center Parkway, Suite 245  
Pleasanton, CA 94566  
Phone: (925) 621-2121  
Fax: (925) 621-2119

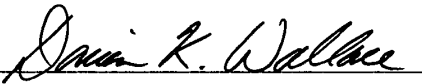
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

<b>REQUEST AND CERTIFICATION UNDER 35 U.S.C. 122(b)(2)(B)(i)</b>	First Named Inventor	Daniel SauFu Mui
	Title	"Relaying Key Code Signals Through a Remote Control Device"
	Atty Docket Number	ZIL-568

I hereby certify that the invention disclosed in the attached application **has not and will not be** the subject of an application filed in another country, or under a multilateral agreement, that requires publication at eighteen months after filing. I hereby request that the attached application not be published under 35 U.S.C. 122(b).

December 16, 2003

Date



Signature

Darien K. Wallace

Typed or printed name

This request must be signed in compliance with 37 CFR 1.33(b) and submitted with the application **upon filing**.

Applicant may rescind this nonpublication request at any time. If applicant rescinds a request that an application not be published under 35 U.S.C. 122(b), the application will be scheduled for publication at eighteen months from the earliest claimed filing date for which a benefit is claimed.

If applicant subsequently files an application directed to the invention disclosed in the attached application in another country, or under a multilateral international agreement, that requires publication of applications eighteen months after filing, the applicant **must** notify the United States Patent and Trademark Office of such filing within forty-five (45) days after the date of the filing of such foreign or international application. **Failure to do so will result in abandonment of this application (35 U.S.C. 122(b)(2)(B)(iii)).**

Burden Hour Statement: This collection of information is required by 37 CFR 1.213(a). The information is used by the public to request that an application not be published under 35 U.S.C. 122(b) (and the PTO to process that request). Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This form is estimated to take 6 minutes to complete. This time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, Washington, DC 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Assistant Commissioner for Patents, Washington, DC 20231.



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APPLICATION NUMBER	PATENT NUMBER	GROUP ART UNIT	FILE WRAPPER LOCATION
10/737,029		2635	

**Change of Address/Power of Attorney**

The following fields have been set to Customer Number 47713 on 12/03/2004

- Correspondence Address
- Power of Attorney
- Maintenance Fee Address

**The address of record for Customer Number 47713 is:**

SILICON EDGE LAW GROUP LLP  
6601 KOLL CENTER PARKWAY, SUITE 245  
PLEASANTON, CA 94566

**The Practitioners of record for Customer Number 47713 are:**

**PTO INSTRUCTIONS:**

**Please take the following action when the correspondence address has been changed to a customer number:**

- 1) Add 'ADDRESS CHANGE TO CUSTOMER NUMBER' on the next available content line of the File Jacket.
- 2) Put a line through the old address on the File Jacket and enter the Customer Number as the new address.
- 3) File this Notice in the File Jacket.

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/737,029	12/16/2003	Daniel SauFu Mui	ZIL-568	4506

47713 7590 06/06/2006

SILICON EDGE LAW GROUP LLP  
6601 KOLL CENTER PARKWAY, SUITE 245  
PLEASANTON, CA 94566

EXAMINER

BROWN, VERNAL U

ART UNIT	PAPER NUMBER
2612	

2612

DATE MAILED: 06/06/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/737,029	MUI, DANIEL SAUFU	
	<b>Examiner</b>	<b>Art Unit</b>	
	Vernal U. Brown	2612	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1)  Responsive to communication(s) filed on 16 December 2003.  
2a)  This action is **FINAL**.                      2b)  This action is non-final.  
3)  Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4)  Claim(s) 1-24 is/are pending in the application.  
4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
5)  Claim(s) \_\_\_\_\_ is/are allowed.  
6)  Claim(s) 1-10,13-16,18-24 is/are rejected.  
7)  Claim(s) 11,12 and 17 is/are objected to.  
8)  Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9)  The specification is objected to by the Examiner.  
10)  The drawing(s) filed on \_\_\_\_\_ is/are: a)  accepted or b)  objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
11)  The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12)  Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a)  All    b)  Some \*    c)  None of:  
1.  Certified copies of the priority documents have been received.  
2.  Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3.  Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |



**DETAILED ACTION**

The application of Daniel SauFu Mui filed 12/16/2003 for Relaying key Code Signals Through a remote Control Device has been examined. Claims 1-24 are pending.

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 19-20 are rejected under 35 U.S.C. 102(b) as being anticipated by Pope US Patent 5963624.

Regarding claim 19, Pope teaches generator 12 for generating key code for controlling different consumer devices (col. 3 lines 35-40, figure 1) and teaches storing key codes (code set) on the key code generator (col. 5 lines 7-11). Pope teaches the base unit (code generator) transmit control codes to a plurality of consumer devices (figure 1) inherently including a first and second code. Pope teaches an IR transmitter 87 for relaying the key codes to the consumer devices (col. 3 lines 41-45). The codes are stored in the memory of the base unit (code generator)

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and is therefore not store in the means (IR transmitter) for transmitting the key code signal to the consumer devices.

Regarding claim 20, Pope teaches channel selection included in the function of the remote control (col. 1 lines 59-63).

Claim 13-16, 22, and 24 are rejected under 35 U.S.C. 102(e) as being anticipated by Wouters et al. US Patent 6915109.

Regarding claims 13 and 22, Wouters et al. teaches a device comprising a receiver receiving a RF modulated remote control signal (col. 4 lines 25-28) and a transmitter transmitting an infrared modulated signal generated from the received RF signal (col. 4 lines 28-33). Wouters et al. also teaches the key code corresponding to the key of keypad is transmitted when the key is selected (col. 4 lines 4 lines 48-57).

Regarding claims 14-16, Wouters et al. teaches the key code corresponding to the key of keypad is transmitted when the key is selected (col. 4 lines 4 lines 48-57). A key code corresponding to a second and third key code is therefore transmitted based on the selected key. Wouters et al. teaches fetching the data from memory corresponding to the key code (col. 4 lines 55-58). The data from the memory is inherently store as binary data. The key code therefore comprises binary data.

Regarding claim 24, Wouters et al. teaches a microcontroller in the form of a microprocessor for receiving the key code (col. 4 lines 52-55).

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 3-4, 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pope US Patent 5963624 in view of McNair et al. US Patent 5595342.

Regarding claim 1, Pope teaches receiving a keystroke indicator signal which contains an indication of a key on the remote control device 10 that was pressed (col. 2 lines 61-col. 3 line 19), generating a key code (codes for communicating the control function to the appliances) within the code generator 12 and transmitting the key codes to the appliances (col. 3 lines 35-40). Pope is however silent on teaching modulating the key code onto a carrier signal. McNair et al. in an art related control system teaches the control signal is modulated and transmitted to the controlled apparatus as a conventional practice (col. 2 lines 61-65).

It would have been obvious to one of ordinary skill in the art to modulate the key code onto a carrier signal in Pope because modulation of the key code enables the key code signal to be transmitted wirelessly to the appliances and this also represents a conventional practice.

Regarding claim 3, Pope teaches the key code generator 12 transmitting key code signal (control codes) to the consumer devices (col. 3 lines 35-40).

Regarding claim 4, Pope teaches the key code is indicated by low and high (col. 3 lines 45-47) implying the key code signal include ones and zeroes.

Regarding claim 9, Pope teaches the code generated by the code generator 12 is transmitted to the appliances (col. 3 lines 36-40). The code generated by the code generator is not store in the remote control because it is transmitted to the appliances.

Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Pope US Patent 5963624 in view of McNair et al. US Patent 5595342 and further in view of Goldstein US Patent 5410326.

Regarding claim 2, Pope teaches the remote control receiving key code signals (infrared control signal) from a controller (col. 4 lines 52-56) but is silent on teaching the key code generator transmit key codes to the remote control device. Goldstein in an art related programmable remote control invention teaches a key code generator in the form of a cable box (cable box is considered a key code generator, see page 3 lines 4-5 of the applicant's specification) transmitting key codes to the remote control (col. 13 lines 50-57) in order to update the remote control with new control codes.

It would have been obvious to one of ordinary skill in the art for the key code generator to transmit the key code to the remote control in Pope in view of McNair et al. because this provides the means for updating the remote control with new codes.

Claims 5 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pope US Patent 5963624 in view of McNair et al. US Patent 5595342 and further in view of Teskey US Patent 6747568.

Regarding claim 5, Pope teaches generating a key code for controlling the consumer appliances (col. 3 lines 35-40) but is silent on teaching the key code comprises timing information defining the binary number is modulated. Teskey in an art related remote control system teaches the format of the remote control signal having the necessary timing and modulation information (col. 3 line 60-col. 4 line 8).

It would have been obvious to one of ordinary skill in the art for the key code to include comprises timing information defining the binary number is modulated in Pope in view of McNair because the timing information defining the binary number is modulated represent information regarding the format of the remote control signal that enables the decoding and demodulating of the receive key code signals.

Regarding claim 10, Pope teaches generating a key code for controlling the consumer appliances (col. 3 lines 35-40) but is silent on teaching the key code comprises timing information defining the binary number (ones and zeroes) is modulated. Teskey in an art related remote control system teaches the format of the remote control signal having the necessary timing and modulation information (col. 3 line 60-col. 4 line 8).

It would have been obvious to one of ordinary skill in the art for the key code to include comprises timing information defining the binary number is modulated in Pope in view of McNair because the timing information defining the binary number is modulated represent

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information regarding the format of the remote control signal that enables the decoding and demodulating of the receive key code signals.

Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Pope US Patent 5963624 in view of McNair et al. US Patent 5595342 and further in view of August et al. US Patent 5671267.

Regarding claim 6, Pope teaches the use of the remote control to control the functions of the appliances (col. 2 line 61-col. 3 line 22) but is not explicit in teaching transmitting a keystroke indicator signal that cause the appliance to turn on. One skill in the art recognizes that a remote control is generally use in turning an appliance on/off and is further evidenced by August et al. (col. 8 lines 3-5).

It would have been obvious to one of ordinary skill in the art for the remote control to transmit a keystroke signal for turning the appliance on in Pope in view of McNair because Pope suggests the use of the remote control to control the functions of the appliances and one skill in the art recognizes that a remote control is generally use in turning an appliance on/off and is further evidenced by August et al.

Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Pope US Patent 5963624 in view of McNair et al. US Patent 5595342 and further in view of Wouster et al. US Patent 6915109

Regarding claim 7, Pope teaches the remote control receiving key code signals (infrared control signal) from a controller (col. 4 lines 52-56) and the remote control transmits control signal to the appliances (figure 1) but is silent on teaching modulating the key code onto carrier

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signal that is in the infrared frequency band. Wouters et al. in an art related remote control invention teaches a remote control receiving a RF modulated remote control signal (col. 4 lines 25-28) and a transmitter transmitting an infrared modulated signal generated from the received RF signal (col. 4 lines 28-33).

It would have been obvious to one of ordinary skill in the art to modulate the key code onto carrier signal that is in the infrared frequency band in Pope in view of McNair because infrared signal represents an alternative to radio signal used in the transmission of remote control signal.

Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Pope US Patent 5963624 in view of McNair et al. US Patent 5595342 in view of Wouster et al. US Patent 6915109 and further in view of August et al. US Patent 5671267.

Regarding claim 8, Pope teaches the use of the remote control to control the functions of the appliances (col. 2 line 61-col. 3 line 22) but is not explicit in teaching transmitting a keystroke indicator signal that cause the appliance to turn on. One skill in the art recognizes that a remote control is generally use in turning an appliance on/off and is further evidenced by August et al. (col. 8 lines 3-5).

It would have been obvious to one of ordinary skill in the art for the remote control to transmit a keystroke signal for turning the appliance on in Pope in view of McNair in view of Yamaguchi because Pope suggests the use of the remote control to control the functions of the appliances and one skilled in the art recognizes that a remote control is generally use in turning an appliance on/off and is further evidenced by August et al.

Claim 18 is rejected under 35 U.S.C. 103(a) as being unpatentable over Wouters et al. US Patent 6915109 in view of Teskey US Patent 6747568.

Regarding claim 18, Wouters et al. teaches the remote control transmit command codes to perform various functions (col. 4 lines 4 lines 48-57). Wouters is silent on teaching the key code comprises timing information defining the binary number is modulated. Teskey in an art related remote control system teaches the format of the remote control signal having the necessary timing and modulation information (col. 3 line 60-col. 4 line 8).

It would have been obvious to one of ordinary skill in the art for the key code to include timing information defining the binary number is modulated in Wouters et al. because the timing information defining the binary number represents information regarding the format of the remote control signal that enables the decoding and demodulating of the receive key code signals.

Claim 21 is rejected under 35 U.S.C. 103(a) as being unpatentable over Pope US Patent 5963624 in view of August et al. US Patent 5671267.

Regarding claim 6, Pope teaches the use of the remote control to control the functions of the appliances (col. 2 line 61-col. 3 line 22) but is not explicit in teaching transmitting a keystroke indicator signal that cause the appliance to turn on. One skill in the art recognizes that a remote control is generally use in turning an appliance on/off and is further evidenced by August et al. (col. 8 lines 3-5).



It would have been obvious to one of ordinary skill in the art for the remote control to transmit a keystroke signal for turning the appliance on in Pope because Pope suggests the use of the remote control to control the functions of the appliances and one skilled in the art recognizes that a remote control is generally use in turning an appliance on/off and is further evidenced by August et al.

Claim 23 is rejected under 35 U.S.C. 103(a) as being unpatentable over Wouters et al. US Patent 6915109 in view of Pope US Patent 5963624.

Regarding claim 23, Wouters teaches transmitting key codes to remote control (see response to claim 13) but is not explicit in teaching the key code is not store on the remote control prior to the remote control receiving the key code. Pope in an art related remote control teaches the remote control receiving control codes updates (col. 4 lines 52-60). The receipt of the code update by the remote control implies that the code was not previously stored in the remote control prior transmitting the updates to the remote controller.

It would have been obvious to one of ordinary skill in the art for the key code is not store on the remote control prior to the remote control receiving the key code because the key codes transmitted to the remote control is used as a means of programming the remote control with new codes.

***Allowable Subject Matter***

Claims 11-12 and 17 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Regarding claims 11-12, the prior art of record fail to teach or suggests no more than a single one of the key codes is present on the remote control at any given time.


Regarding claim 17, the prior art of record fail to teach or suggests the first and second key code are not stored in the device at the same time.


#### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Vernal U. Brown whose telephone number is 571-272-3060. The examiner can normally be reached on 8:30-7:00 Monday-Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wendy Garber can be reached on 571-272-7308. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
Vernal Brown  
May 10, 2006

  
BRIAN ZIMMERMAN  
PRIMARY EXAMINER

<b>Notice of Referenc s Cited</b>	Application/Control No. 10/737,029	Applicant(s)/Patent Under Reexamination MUI, DANIEL SAUFU	
	Examiner Vernal U. Brown	Art Unit 2612	Page 1 of 1

**U.S. PATENT DOCUMENTS**

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	Classification
*	A	US-5,963,624	10-1999	Pope, Steven M.	379/110.01
*	B	US-2002/0130803	09-2002	Conway et al.	341/176
*	C	US-2005/0151726	07-2005	Wouters, Johan Agnes Emile	345/172
*	D	US-6,819,259	11-2004	Yamaguchi, Takashi	340/825.69
*	E	US-6,747,568	06-2004	Teskey, John Frederick	340/825.72
*	F	US-5,671,267	09-1997	August et al.	455/420
*	G	US-5,595,342	01-1997	McNair et al.	236/51
	H	US-			
	I	US-			
	J	US-			
	K	US-			
	L	US-			
	M	US-			

**FOREIGN PATENT DOCUMENTS**

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Country	Name	Classification
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**NON-PATENT DOCUMENTS**

*		Include as applicable: Author, Title Date, Publisher, Edition or Volume, Pertinent Pages)
	U	
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	X	

\*A copy of this reference is not being furnished with this Office action. (See MPEP § 707.05(a).)  
Dates in MM-YYYY format are publication dates. Classifications may be US or foreign.

**Search Notes**



Application Number

10/737,029

Examiner

Vernal U. Brown

Applicant(s)/Patent under Examination

MUI, DANIEL SAUFU

Art Unit

2612

**SEARCHED**

Class	Subclass	Date	Examiner
340	825.69	5/10/2006	VB
340	825.72	10/6/2006	VB
340	825.22	10/6/2006	VB
340	5.61	10/6/2006	VB
340	5.64	10/6/2006	VB
340	5.74	10/6/2006	VB
345	172	10/6/2006	VB
345	168	10/6/2006	VB
348	734	10/6/2006	VB

**INTERFERENCE SEARCHED**

Class	Subclass	Date	Examiner

**SEARCH NOTES  
(INCLUDING SEARCH STRATEGY)**

	DATE	EXMR
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**Index of Claims**



Applicati n/C ntr l No.

10/737,029

Examiner

Vernal U. Brown

Applicant(s)/Patent und r  
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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: Daniel SauFu Mui  
Assignee: ZiLOG, Inc.  
Title: "Relaying Key Code Signals Through a Remote Control Device"  
Appl. No.: 10/737,029 Filing Date: December 16, 2003  
Examiner: Vernal U. Brown Art Unit: 2612  
Docket No.: ZIL-568

July 28, 2006

Mail Stop Amendment  
COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, VA 22313-1450

**AMENDMENT**

Dear Sir:

In response to the outstanding, non-final office action dated June 6, 2006 ("Office Action"), Applicant responds as follows and requests the Examiner to amend the above-identified application as follows.

**Amendments to the Specification** begin on page 2 of this Amendment.

**Amendments to the Claims** are reflected in the listing of claims that begins on page 3 of this Amendment.

There are no amendments to the drawings in this Amendment.

The **Remarks** begin on page 9 of this Amendment.

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02 FC:1201 600.00 DP

Applicant: Daniel SauFu Mui  
Serial No.: 10/737,029  
Filing Date: December 16, 2003  
Docket No.: ZIL-568

**Amendments to the Specification:**

Please replace paragraph [0006] with the following replacement paragraph.

[0006] A system for relaying a key code through a remote control device to an electronic consumer device allows the electronic consumer device to be controlled without storing the associated codeset on the remote control device. Upon receiving a keystroke indicator signal from a remote control device, a key code generator device, such as a set-top box, identifies the particular codeset usable to communicate with the selected electronic consumer device. The keystroke indicator signal contains an indication of a key on the remote control device that was pressed, which corresponds to a function of the selected electronic consumer device. Using the identified codeset and the indication of the pressed key, the key code generator device generates a key code and modulates that key code onto a radio frequency carrier signal, thereby generating a first key code signal. The remote control device receives the first key code signal from the key code generator device and modulates the key code onto an infrared frequency carrier signal, thereby generating a second key code signal. The remote control device relays the key code to the selected electronic consumer device in the second key code signal. The key code causes the selected electronic consumer device to perform the desired function. The key code is not stored on the remote control device in a permanent manner, but rather ~~then~~the key code is relayed through the remote control device.



Applicant: Daniel SauFu Mui  
Serial No.: 10/737,029  
Filing Date: December 16, 2003  
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**Amendments to the Claims:**

This listing of claims replaces all prior versions and listings of claims in the application.

**Listing of Claims**

1. (original): A method comprising:
  - (a) receiving a keystroke indicator signal from a remote control device;
  - (b) generating a key code within a key code generator device;
  - (c) modulating said key code onto a carrier signal, thereby generating a key code signal; and
  - (d) transmitting said key code signal from said key code generator device.
2. (original): The method of Claim 1, wherein said key code signal is transmitted in (d) from said key code generator device to said remote control device.
3. (original): The method of Claim 1, wherein said key code signal is transmitted in (d) from said key code generator device to an electronic consumer device.
4. (original): The method of Claim 1, wherein said key code consists of a binary number.
5. (original): The method of Claim 1, wherein said key code comprises a binary number and timing information, and wherein said timing information defines how said binary number is modulated in (c) onto said carrier signal.

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6. (original): The method of Claim 1, further comprising:

(e) pressing a power-on key of said remote control device causing said remote control device to transmit said keystroke indicator signal that is received in (a), wherein said key code signal transmitted in (d) is received onto an electronic consumer device, and wherein said pressing in (e) causes said electronic consumer device to turn on.

7. (original): The method of Claim 1, wherein said carrier signal is in a radio frequency band, wherein said key code signal is received by said remote control device, and wherein said method further comprises:

(e) modulating said key code onto a second carrier signal, thereby generating a second key code signal, said modulating being performed on said remote control device wherein said second carrier signal is in an infrared frequency band; and

(f) transmitting said second key code signal from said remote control device to an electronic consumer device.

8. (original): The method of Claim 7, further comprising:

(g) pressing a power-on key of said remote control device causing said remote control device to transmit said keystroke indicator signal that is received in (a), wherein the pressing in (g) causes said electronic consumer device to turn on.

9. (original): The method of Claim 1, wherein said key code generated in (b) is part of a codeset, and wherein said remote control device does not store said codeset.

10. (original): The method of Claim 9, wherein said codeset comprises timing information and a plurality of key codes, and wherein said timing information describes a digital one and a digital zero.

Applicant: Daniel SauFu Mui  
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11. (currently amended): ~~The method of Claim 1A~~ method comprising:  
(a) receiving a keystroke indicator signal from a remote control device;  
(b) generating a key code within a key code generator device;  
(c) modulating said key code onto a carrier signal, thereby generating a  
key code signal; and  
(d) transmitting said key code signal from said key code generator device,  
wherein a codeset comprises a plurality of key codes, each one of said plurality  
of key codes corresponding to a function of an electronic consumer device, and  
wherein no more than a single one of said plurality of key codes is present on  
said remote control device at any given time.

12. (original): The method of Claim 11, wherein said function of said electronic  
consumer device is taken from the group consisting of: power on, power off,  
channel advance, channel back, volume up, volume down, cursor up, cursor  
down, cursor right, cursor left, select, play, record, stop, forward, back and  
pause.

13. (currently amended): A remote control device comprising:  
a receiver that receives a first key code signal, wherein said first key code  
signal is generated by modulating a key code onto a first carrier signal, said first  
carrier signal falling within a radio frequency band;  
a transmitter that transmits a second key code signal, wherein said  
second key code signal is generated by modulating said key code onto a second  
carrier signal, said second carrier signal falling within an infrared frequency band;  
and  
a keypad that includes a key that corresponds to said key code, wherein  
said key code corresponds to a function of an electronic consumer device.

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14. (original): The device of Claim 13, wherein said key code corresponds to a second function of a second electronic consumer device, as well as to said function of said electronic consumer device.

15. (original): The device of Claim 14, wherein said transmitter transmits a third key code signal, and wherein said third key code signal is generated by modulating said key code onto a third carrier signal.

16. (original): The device of Claim 14, wherein said key code comprises a first binary number and a second binary number, said first binary number corresponding to said function, and said second binary number corresponding to said second function.

17. (currently amended): ~~The device of Claim 13~~ A device comprising:  
a receiver that receives a first key code signal, wherein said first key code signal is generated by modulating a key code onto a first carrier signal, said first carrier signal falling within a radio frequency band;  
a transmitter that transmits a second key code signal, wherein said second key code signal is generated by modulating said key code onto a second carrier signal, said second carrier signal falling within an infrared frequency band;  
and  
a keypad that includes a key that corresponds to said key code, wherein said key code corresponds to a function of an electronic consumer device,  
wherein said keypad includes a second key that corresponds to a second key code, wherein a third key code signal is generated by modulating said second key code onto a third carrier signal, wherein said third key code signal is received by said receiver, and wherein both said first key code and said second key code are not both stored in said device at the same time.

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18. (original): The device of Claim 13, wherein a codeset comprises timing information and a plurality of key codes, wherein each of said plurality of key codes corresponds to a different function of said electronic consumer device, wherein said key code is a binary number, and wherein said timing information defines how said binary number is modulated onto said first carrier signal.

19. (currently amended): A system comprising:

a key code generator device that generates a first key code and a second key code, wherein a codeset is stored on said key code generator device, said codeset including said first key code and said second key code, wherein said first key code corresponds to a selected function of a first electronic consumer device, and wherein said second key code corresponds to said selected function of a second electronic consumer device; and

means for relaying said first key code and said second key code from said key code generator device through a remote control device to said first electronic consumer device and to said second electronic consumer device without simultaneously storing both said first key code and said second key code on said meansremote control device.

20. (original): The system of Claim 19, wherein said selected function is taken from the group consisting of: power on, power off, channel advance, channel back, volume up, volume down, cursor up, cursor down, cursor right, cursor left, select, play, record, stop, forward, back and pause.

21. (original): The system of Claim 19, wherein said selected function is power on, and wherein said system automatically determines when said first electronic consumer device powers on.

22. (original): A remote control device, comprising:  
an RF receiver;

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an IR transmitter; and

means for receiving a key code from said RF receiver and for sending said key code to said IR transmitter such that said key code is modulated onto an IR carrier signal, said IR carrier signal with said key code modulated thereon being transmitted from said remote control device by said IR transmitter.

23. (original): The remote control device of Claim 22, wherein said key code is not stored on said remote control device immediately prior to said means receiving the key code.

24. (original): The remote control device of Claim 22, wherein said means is a microcontroller.

25. (new): A method comprising:

(a) receiving a keystroke indicator signal from a remote control device;

(b) using said keystroke indicator signal to generate a key code, wherein a key code generator device generates said key code;

(c) modulating said key code onto a carrier signal and thereby generating a key code signal;

(d) transmitting said key code signal from said key code generator device to said remote control device, wherein said remote control device transmits said key code signal to an electronic consumer device.

26. (new): The method of Claim 25, wherein said key code generated in (b) is part of a codeset, and wherein said codeset is not stored on said remote control device.

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### REMARKS

Reconsideration and allowance is respectfully requested.

Before entry of this amendment, claims 1-24 were pending. In the Office Action, claims 1-10, 13-16 and 18-24 were rejected, and claims 11-12 and 17 were objected to. In the present amendment, claims 11, 13, 17, and 19 are amended, and claims 25-26 are added. After entry of the amendment, claims 1-26 are pending.

#### I. Claims 11-12 and 17

Claims 11-12 and 17 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form. (See Office Action, p. 10, lines 19-21.) Applicant amends claim 11 such that claims 11-12 include all of the limitations of the base claim 1. Applicant amends claim 17 to include all of the limitations of the base claim 13.

Withdrawal of the objection to claims 11-12 and 17 is respectfully requested.

#### II. Claims 19-20

Claims 19-20 are rejected under 35 U.S.C. § 102(b) as being anticipated by Pope (USP 5,963,624) (Office Action, p. 2, lines 16-17).

##### A. Independent claim 19

Claim 19 as amended recites, "means for relaying said first key code and said second key code from said key code generator device through a remote control device to said first electronic consumer device and to said second electronic consumer device without simultaneously storing both said first key code and said second key code on said remote control device" (emphasis added). Pope does not form the basis for a valid rejection under § 102(b) because Pope does not disclose all of the limitations of claim 19. Specifically,

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Pope does not disclose relaying a key code from a key code generator device through a remote control device to an electronic consumer device.

The Examiner states that the IR transmitter 87 of base unit 12/80 of Pope discloses the recited means for relaying key codes. (Office Action, p. 2, lines 22-23). The appliance control codes of Pope, however, are not relayed from base unit 12, through handset 10/50, to an appliance 14/16/18.

Because Pope does not disclose all of the elements of claim 19, reconsideration of the § 102(b) rejection and allowance of claim 19 are requested.

B. Dependent claim 20

Claim 20 depends from claim 19 and is allowable for at least the same reasons for which claim 19 is allowable. Reconsideration of the § 102(b) rejection and allowance of claim 20 are requested.

III. Claims 13-16, 22 and 24

Claims 13-16, 22 and 24 are rejected under 35 U.S.C. § 102(e) as being anticipated by Wouters et al. (USP 6,915,109) (Office Action, p. 3, lines 5-6).

A. Independent claim 13 and 22

Claim 13 as amended recites, "A remote control device comprising: a receiver that receives a first key code signal . . . within a radio frequency band; a transmitter that transmits a second key code signal . . . within an infrared frequency band; and a keypad . . ." (emphasis added). Claim 22 recites, "A remote control device, comprising: an RF receiver; an IR transmitter; . . . said IR carrier signal . . . being transmitted from said remote control device by said IR transmitter" (emphasis added). Wouters does not form the basis for a valid rejection under § 102(e) because Wouters does not disclose all of the limitations of either claim 13 or claim 22. Specifically, Wouters does not disclose a remote control device with a keypad that both receives a signal within a radio frequency



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band and transmits a signal within an infrared frequency band. In addition, Wouters does not disclose a remote control device with an RF receiver and an IR transmitter.

Wouters does not disclose a device with a keypad that transmits an IR signal and receives an RF signal. The Examiner cites passages in Wouters from column 4, lines 25-33 and 48-57 (Office Action, p. 3, lines 7-11). The first passage from lines 25-33 describes radio receiver 13 that receives RF signal 10 and transmits a signal to IR transmitter 14. Radio receiver 13 does not include a keypad. Moreover, radio receiver 13 is not a remote control device. The second passage of Wouters from lines 48-57 describes the remote control unit shown in figure 6 of Wouters (mistakenly referred to as figure 7). The remote control unit described in lines 48-57 includes an IR transmitter and an RF transmitter, but does not include an RF receiver. Wouters does not disclose a remote control device that both receives an RF signal and transmits an IR signal.

Because Wouters does not disclose all of the elements of either claim 13 or claim 22, reconsideration of the § 102(e) rejection and allowance of claims 13 and 22 are requested.

#### B. Dependent claims 14-16

Claim 14 recites "said key code corresponds to a second function of a second electronic consumer device, as well as to said function of said electronic consumer device". The Examiner has not presented a *prima facie* argument of anticipation of claim 14 because the Examiner has not stated that Wouters discloses a key code that corresponds both to a function of an electronic consumer device as well as to a second function of a second electronic consumer device. Wouters does not disclose one key code that corresponds to two separate functions of two different electronic consumer devices.

Claim 16 recites "said key code comprises a first binary number and a second binary number, said first binary number corresponding to said function, and said second binary number corresponding to said second function". The

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Examiner has not presented a *prima facie* argument of anticipation of claim 16 because the Examiner has not stated that Wouters discloses a key code comprising both (i) a first binary number that corresponds to a function of an electronic consumer device as well as (ii) a second binary number that corresponds to a second function of a second electronic consumer device. Wouters does not disclose a single key code that comprises two binary numbers, one corresponding to the function of one electronic consumer device, and the other corresponding to a second function of a second electronic consumer device.

Claims 14-16 depend directly or indirectly from claim 13. In addition to the reasons explained above, dependent claims 14-16 are allowable for at least the same reasons for which claim 13 is allowable. Reconsideration of the § 102(e) rejection and allowance of claims 14-16 are requested.

#### C. Dependent claim 24

Claim 24 recites that the means of claim 22 is a microcontroller. The means of claim 22 is a "means for receiving a key code from said RF receiver". The Examiner states that Wouters discloses "a microcontroller in the form of a microprocessor for receiving the key code (col. 4 lines 52-55)" (Office Action, p. 3, lines 18-19). Applicant respectfully disagrees. The cited passage of Wouters does not disclose a microprocessor for receiving a key code from an RF receiver.

The remote control unit disclosed in the cited passage does not include an RF receiver. Thus, the central processing unit (CPU) inside the remote control does not receive a key code from any RF receiver. Instead, Wouters discloses that the CPU determines which code needs transmitting based on which key is tapped by the user. Wouters explains:

"In this case the user taps a key, the CPU (Central processing unit) inside the remote control determines which code (corresponding to the tapped key) needs transmitting (by IR or RF) and fetches the required data from its memory which comprises a data base or other means in

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which tapped codes are linked to data to be transmitted” (Wouters, col. 4, lines 57-62) (emphasis added).

Therefore, Wouters does not disclose a microcontroller that receives a key code from an RF receiver.

Claim 24 depends from claim 22. In addition to the reasons explained above, dependent claim 24 is allowable for at least the same reasons for which claim 22 is allowable. Reconsideration of the § 102(e) rejection and allowance of claim 24 are requested.

#### IV. Claims 1, 3-4 and 9

Claims 1, 3-4 and 9 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Pope in view of McNair et al. (USP 5,595,342) (Office Action, p. 4, lines 9-10). To establish a *prima facie* case of obviousness, the Examiner must demonstrate three criteria. The MPEP § 2142 states:

“To establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the reference (or references when combined) must teach or suggest all the claimed limitations.” MPEP § 2142 (emphasis added).

##### A. Independent claim 1

The combination of Pope and McNair does not form the basis for a valid rejection of claim 1 under § 103(a) because, among other things, the references when combined do not teach or suggest all of the claim elements. Claim 1 recites, “(a) receiving a keystroke indicator signal from a remote control device; (b) generating a key code within a key code generator device . . .”. Neither Pope nor McNair teaches generating a key code within a key code generator device.

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Moreover, neither Pope nor McNair teaches both a keystroke indicator signal and a key code signal.

The Examiner states that "Pope teaches receiving a keystroke indicator signal which contains an indication of a key on the remote control device 10 that was pressed (col. 2 lines 61-col. 3 line 19), generating a key code (codes for communicating the control function to the appliances) within the code generator 12 . . ." (Office Action, p. 4, lines 11-14) (emphasis added). Applicant respectfully disagrees. Pope does not teach generating a key code within a key code generator device.

The appliance control code that is transmitted by base unit 12 of Pope is not generated within base unit 12. Instead, base unit 12 receives the appliance control codes from handset 10/50. Pope explains:

"The present invention uses a digital cordless telephone handset to store a variety of appliance control codes. These appliance control codes can be transmitted to a base unit. The base unit can translate the appliance control codes to control signals such as infrared control signals, to control an electrical appliance" (Pope, col. 1, lines 31-36) (emphasis added) See also Pope, col. 2, lines 48-52 and 63-65.

The appliance control codes are not generated within the base unit 12 of Pope. Instead, the appliance control codes are transmitted from the handset 10/50 to the base unit 12, where they are translated to control signals. Base unit 12 of Pope does not receive a keystroke indicator and then generate a key code. Pope states, "Once an appliance control code is received by the base unit, the base unit will know to transfer the control code to an appliance" (Pope, col. 4, lines 49-51) (emphasis added).

According to the tenets of claim differentiation, a "keystroke indicator signal" cannot be interpreted to be the same as a "key code signal". Such a claim interpretation is presumptively unreasonable. See, e.g., *Karlin Tech. Inc. v. Surgical Dynamics Inc.*, 177 F.3d 968, 50 USPQ2d 1465, 1468 (Fed. Cir. 1999). In addition, such a claim interpretation would render claim 1 internally

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inconsistent because "keystroke indicator/key code" information that was already received by the key code generator device would later be generated by the key code generator device. Thus, Pope does not teach both a keystroke indicator and a key code. The handset 10/50 of Pope transmits an appliance control code and not a keystroke indicator.

McNair does not teach modulating a key code. McNair does not teach a key code. McNair is directed to a control system for a gas-fired, central heating system and does not concern key code signals for electronic consumer devices. Thus, there would be no motivation to combine McNair with Pope even if McNair did disclose a limitation of claim 1 (which it does not).

Neither Pope nor McNair teaches both (i) a keystroke indicator signal and (ii) a key code signal. Nor does either Pope or McNair teach generating a key code within a key code generator device. Because the combination of Pope and McNair does not disclose all of the elements of claim 1, Pope and McNair do not form the basis for a valid rejection under § 103(a). Reconsideration of the § 103(a) rejection and allowance of claim 1 are requested.

#### B. Dependent claims 3-4 and 9

Claim 9 recites, "said key code generated in (b) is part of a codeset, and wherein said remote control device does not store said codeset" (emphasis added). With respect to base claim 1, the Examiner states that "Pope teaches receiving a keystroke indicator signal which contains an indication of a key on the remote control device 10" (Office Action, p. 4, lines 11-12) (emphasis added). Thus, the Examiner considers that handset 10 of Pope teaches the remote control device recited in claim 9. The Examiner then states, "The code generated by the code generator is not store in the remote control because it is transmitted to the appliances" (Office Action, p. 5, lines 6-7). Applicant respectfully disagrees.

The appliance control codes of Pope are stored on handset 10 and are transmitted from handset 10 to base unit 12. Base unit 12 does not generate the

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appliance control codes. Instead base unit 12 receives the appliance control codes and then translates them into infrared control signals. Pope explains:

"The present invention uses a digital cordless telephone handset to store a variety of appliance control codes. These appliance control codes can be transmitted to a base unit. The base unit can translate the appliance control codes to control signals such as infrared control signals, to control an electrical appliance" (Pope, col. 1, lines 31-36) (emphasis added)

"The cordless digital telephone handset includes a memory 66 . . . used to store the appliance control codes. Preferably, the appliance control codes can be transmitted to the base unit 12 . . ." (Pope, col. 2, lines 48-52) (emphasis added).

"Fig. 2 is a diagram of a handset 50 of the present invention. . . . The appliance control codes are stored in a memory 66" (Pope, col. 4, lines 17-28) (emphasis added).

Claims 3-4 and 9 depend from claim 1. In addition to the reasons explained above, dependent claims 3-4 and 9 are allowable for at least the same reasons for which claim 1 is allowable. Reconsideration of the § 103(a) rejection and allowance of claims 3-4 and 9 are requested.

#### V. Dependent claim 2

Claim 2 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Pope in view of McNair and further in view of Goldstein (USP 5,410,326) (Office Action, p. 5, lines 8-10).

Claim 2 includes the following limitations of base claim 1, "(a) receiving a keystroke indicator signal from a remote control device; (b) generating a key code within a key code generator device . . . ." None of Pope, McNair or Goldstein teaches generating a key code within a key code generator device. Moreover, none of Pope, McNair or Goldstein teaches both a keystroke indicator signal and a key code signal.

In addition, claim 2 recites "wherein said key code signal is transmitted in

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(d) from said key code generator device to said remote control device". The Examiner seems to admit that Pope and McNair are silent on teaching that the key code generator transmits the key code signal to the remote control device. (Office Action, p. 5, lines 12-13) (emphasis added).

None of Pope, McNair or Goldstein teaches (i) receiving a keystroke indicator signal from a remote control device, (ii) generating a key code within a key code generator, and (iii) transmitting a key code signal from the key code generator device back to the remote control device.

The fact that Goldstein may teach sending an IR code or an entire codeset from a cable television converter box to a remote control device to update the remote control device does not teach transmitting a key code signal from a key code generator device back to the remote control device. Goldstein does not teach transmitting a key code signal as opposed to a key code or a codeset.

In addition, the cable television converter box of Goldstein does not teach a key code generator because the cable television converter box of Goldstein receives complete codesets from a remote database or is loaded with complete codesets. (Goldstein, col. 15, lines 20-68; col. 17, lines 62-67). To the contrary, Goldstein teaches that the GLUE logic 95 in the universal remote control 5, as opposed to the converter box, generates the IR sequences from the codes. Goldstein states, "The glue logic 95 will supply the IR sequences from codes, stored in the RAM 90, upon command of the user. . . . These codes describe carrier frequencies, pulse widths and pulse duration to be generated to the glue logic 95 for producing infrared pulses from the infrared diode 97" (Goldstein, col. 13, lines 23-33). Thus, Goldstein does not teach transmitting a key code signal from a key code generator.

Finally, the motivation posited by the Examiner to combine Goldstein and Pope is non-existent. (See Office Action, p. 5, lines 18-20). There would be no motivation to update the remote control device of claim 2 with new codesets, as allegedly taught by Goldstein, because claim 2 does not recite that any key code or codeset is ever stored on the remote control device. Claim 2 recites

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transmitting a key code signal to the remote control device and does not recite transmitting a codeset to the remote control device. The motivation proposed by the Examiner would only result in a combination wherein codesets, or at least key codes, are stored on a remote control device.

The combination of Pope, McNair and Goldstein does not form the basis for a valid rejection of claim 2 under § 103(a) because the combination does not teach transmitting a key code signal from the key code generator device back to the remote control device. Moreover, none of Pope, McNair or Goldstein teaches both (i) a keystroke indicator signal and (ii) a key code signal. Nor does any of Pope, McNair or Goldstein teach generating a key code within a key code generator device. Finally, there is no motivation to combine the teachings of Goldstein with the teachings of Pope and McNair in such a way as to obtain all of the limitations of claim 2. Therefore, reconsideration of the § 103(a) rejection and allowance of claim 2 are requested.

#### VI. Dependent claims 5 and 10

Claims 5 and 10 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Pope in view of McNair and further in view of Teskey (USP 6,747,568) (Office Action, p. 6, lines 1-3).

Claims 5 and 10 depend directly or indirectly from claim 1 and include the following limitations of claim 1: "(a) receiving a keystroke indicator signal from a remote control device; (b) generating a key code within a key code generator device . . . ." None of Pope, McNair or Teskey teaches generating a key code within a key code generator device. Moreover, none of Pope, McNair or Teskey teaches both a keystroke indicator signal and a key code signal.

In addition, claim 10 recites that "said timing information describes a digital one and a digital zero". The Examiner admits that Pope "is silent on teaching the key code comprises timing information defining the binary number (ones and zeros) in modulated." But the Examiner states that Teskey "teaches the format of the remote control signal having the necessary timing and modulation



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information (col. line 60-col. 4 line 8)" (Office Action, p. 6, lines 15-18). Applicant disagrees that Teskey teaches "the necessary timing and modulation information." The passage of Teskey cited by the Examiner does not teach timing information that defines a digital one or a digital zero. In fact, Teskey does not mention a digital one, a digital zero or any type of mark/space representation.

The combination of Pope, McNair and Teskey does not form the basis for a valid rejection of either claim 5 or claim 10 under § 103(a) because the combination does not teach both (i) a keystroke indicator signal and (ii) a key code signal. Nor does any of Pope, McNair or Teskey teach generating a key code within a key code generator device. And with regard to claim 10, Teskey does not teach timing information that defines a digital one or a digital zero. Therefore, reconsideration of the § 103(a) rejection and allowance of claims 5 and 10 are requested.

#### VII. Dependent claim 6

Claim 6 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Pope in view of McNair and further in view of August (USP 5,671,267) (Office Action, p. 7, lines 3-5).

Claim 6 includes the following limitations of base claim 1, "(a) receiving a keystroke indicator signal from a remote control device; (b) generating a key code within a key code generator device . . . ." None of Pope, McNair or August teaches generating a key code within a key code generator device. Moreover, none of Pope, McNair or August teaches both a keystroke indicator signal and a key code signal.

In addition, claim 6 recites, "(e) pressing a power-on key of said remote control device causing said remote control device to transmit said keystroke indicator signal that is received in (a), wherein said key code signal transmitted in (d) is received onto an electronic consumer device, and wherein said pressing in (e) causes said electronic consumer device to turn on" (emphasis added). The Examiner states that Pope "is not explicit in teaching transmitting a keystroke

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indicator signal that cause the appliance to turn on. One skill in the art recognizes that a remote control is generally use in turning an appliance on/off and is further evidence by August et al. (col. 8 lines 3-5)" (Office Action, p. 7, lines 7-8). The Examiner does not explicitly state that August teaches a remote control device transmitting a keystroke indicator signal, and indeed August does not teach a keystroke indicator signal. The passage of August cited by the Examiner teaches handset unit 10 of August using a key code signal, as opposed to a keystroke indicator signal, to turn a television set on and off. According to the tenets of claim differentiation, a "keystroke indicator signal" cannot be interpreted to be the same as a "key code signal".

None of Pope, McNair or August teaches (i) receiving a keystroke indicator signal from a remote control device, (ii) generating a key code within a key code generator, and (iii) transmitting a key code signal from the key code generator to an electronic consumer device to turn on the electronic consumer device.

The combination of Pope, McNair and August does not form the basis for a valid rejection of claim 6 under § 103(a) because the combination does not teach both (i) a keystroke indicator signal and (ii) a key code signal. Nor does any of Pope, McNair or August teach generating a key code within a key code generator device. Reconsideration of the § 103(a) rejection and allowance of claim 6 are requested.

#### VIII. Dependent claim 7

Claim 7 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Pope in view of McNair and further in view of Wouters (Office Action, p. 7, lines 16-18).

Claim 7 includes the following limitations of base claim 1, "(a) receiving a keystroke indicator signal from a remote control device; (b) generating a key code within a key code generator device . . . ." None of Pope, McNair or Wouters teaches generating a key code within a key code generator device. Moreover,

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none of Pope, McNair or Wouters teaches both a keystroke indicator signal and a key code signal.

In addition, claim 7 recites "wherein said key code signal is received by said remote control device". The Examiner states that "Pope teaches the remote control receiving key code signals (infrared control signal) from a controller (col. 4 lines 52-56)" (Office Action, p. 7, lines 19-20). The Examiner does not state, however, that Pope teaches the remote control device receiving a key code signal from the key code generator device that generated the key code. The passage of Pope cited by the Examiner teaches receiving an infrared signal from a controller, such as a television remote control. The cited passage does not teach receiving a key code signal from a key code generator device.

The combination of Pope, McNair and Wouters does not form the basis for a valid rejection of claim 7 under § 103(a) because the combination does not teach receiving a key code signal from the key code generator device back on the remote control device. Moreover, none of Pope, McNair or Wouters teaches both (i) a keystroke indicator signal and (ii) a key code signal. Nor does any of Pope, McNair or Wouters teach generating a key code within a key code generator device. Therefore, reconsideration of the § 103(a) rejection and allowance of claim 7 are requested.

#### IX. Dependent claim 8

Claim 8 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Pope in view of McNair and in view of Wouters and further in view of August (Office Action, p. 8, lines 9-11).

The 4-way combination of Pope, McNair, Wouters and August does not form the basis for a valid rejection of claim 8 under § 103(a) for the same reasons explained above with relation to claims 1 and 7. The 4-way combination does not teach receiving a key code signal from the key code generator device back on the remote control device. Nor does the 4-way combination teach both (i) a keystroke indicator signal and (ii) a key code signal. Nor does the 4-way

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combination teach generating a key code within a key code generator device.  
Therefore, reconsideration of the § 103(a) rejection and allowance of claim 8 are requested.

X. Dependent claim 18

Claim 18 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Wouters in view of Teskey (Office Action, p. 9, lines 1-2).

The combination of Wouters and Teskey does not form the basis for a valid rejection of claim 18 under § 103(a) for the same reasons explained above with relation to claim 13. Neither Wouters nor Teskey discloses a device with a keypad that both transmits an IR signal and receives an RF signal.

Because combination of Wouters and Teskey does not disclose all of the elements of claim 18, reconsideration of the § 102(e) rejection and allowance of claim 18 are requested

XI. Dependent claim 21

Claim 21 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Pope in view of August (Office Action, p. 9, lines 13-14).

The combination of Pope and August does not form the basis for a valid rejection of claim 21 under § 103(a) for the same reasons explained above with relation to claim 19. Neither Pope nor August discloses relaying first and second key codes from a key code generator device through a remote control device to both a first electronic consumer device and a second electronic consumer device without simultaneously storing both the first and second key codes on the remote control device.

Because combination of Pope and August does not disclose all of the elements of claim 21, reconsideration of the § 102(e) rejection and allowance of claim 21 are requested.

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XII. Dependent claim 23

Claim 23 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Wouters in view of Pope (Office Action, p. 10, lines 6-7).

The combination of Wouters and Pope does not form the basis for a valid rejection of claim 23 under § 103(a) for the same reasons explained above with relation to claim 22. In addition, neither Wouters nor Pope discloses a remote control device with both an RF receiver and an IR transmitter. The remote control unit 3 of Wouters does not include an RF receiver. The handset 10/50 of Pope does not include an IR transmitter. In fact, Pope teaches against including an IR transmitter on the handset. Pope explains:

"One advantage of having the infrared transmitter attached to the base unit 12 is that the base unit 12 can be typically powered by house current. Since no battery is used, the infrared transmitter can draw more power than is used in battery-type systems. For example, if a button is continuously pressed in a battery-type system, in order to conserve power the infrared signal is not continuously sent, but is sent intermittently. The base unit 12 connected to AC power need not be limited in this fashion. Additionally, it is also possible to have the base unit 12 supply a greater amount of power to the infrared transmitter to transmit a greater amount of infrared energy. In this manner, it may be possible for the infrared bulb to not be focused directly towards the appliance" (Pope, col. 3, lines 46-60) (emphasis added).

Because combination of Wouters and Pope does not disclose the limitations as recited by claim 23, reconsideration of the § 102(e) rejection and allowance of claim 23 are requested.

XIII. New claims 25-26

Applicant is adding new claims 25-26, each of which is supported by the specification and allowable over the cited references. No new matter is added.


XIV. Conclusion

In view of the foregoing amendments and remarks, Applicant respectfully

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submits that the entire application (claims 1-26 are pending) is in condition for allowance. Applicant respectfully requests that a timely Notice of Allowance be issued in this case. If the Examiner would like to discuss any aspect of this application, the Examiner is requested to contact the undersigned at (925) 621-2121.

I hereby certify that this correspondence is being deposited with the United States Postal Service as First Class Mail in an envelope addressed to: Mail Stop Amendment, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

By   
Darien K. Wallace

Date of Deposit: July 28, 2006

Respectfully submitted,



Darien K. Wallace  
Attorney for Applicants  
Reg. No. 53,736  
Customer No. 47,713



*JRW*

**AMENDMENT TRANSMITTAL LETTER**

July 28, 2006

MAIL STOP AMENDMENT  
COMMISSIONER FOR PATENTS  
P.O. Box 1450  
ALEXANDRIA, VA 22313-1450

Re: Applicant: Daniel SauFu Mui  
Assignee: ZiLOG, Inc.  
Title: "Relaying Key Code Signals Through a Remote Control Device"  
Serial No.: 10/737,029 Filed: December 16, 2003  
Examiner: Vernal U. Brown Art Unit: 2612  
Atty. Docket No.: ZIL-568

Dear Sir:

Transmitted herewith are the following documents:

- (1) Amendment with drawings (24 pages);
- (2) A check for additional claim fees (\$700.00)
- (3) Return Postcard; and
- (4) This transmittal sheet (in duplicate).

- No additional Fee is required.
- The fee has been calculated as shown below:

CLAIMS AS AMENDED						
	REMAINING AFTER AMENDMENT		HIGHEST NO. PREVIOUSLY PAID FOR	EXTRA CLAIMS PRESENT	RATE	ADDITIONAL FEE
TOTAL CLAIMS	26	minus	24	2	\$50	\$100.00
INDEP. CLAIMS	7	minus	4	3	\$200	\$600.00
Total Additional Claim Fee						\$700.00
IDS fee under 37 C.F.R. §1.17(p)						\$0.00
TOTAL						\$700.00
<input checked="" type="checkbox"/> A check is attached for the amount of:						\$700.00

I hereby certify that this correspondence is being deposited with the United States Postal Service as First Class Mail in an envelope addressed to: Mail Stop Amendment, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

By *Darien K. Wallace*  
Darien K. Wallace

Date of Deposit: July 28, 2006

Respectfully submitted,

*Darien K. Wallace*

Darien K. Wallace  
Attorney for Applicants  
Reg. No. 53,736  
Customer No. 47,713

**PATENT APPLICATION FEE DETERMINATION RECORD**  
Effective October 1, 2003

Application or Docket Number

211-568

10937020

**CLAIMS AS FILED - PART I**

	(Column 1)	(Column 2)
TOTAL CLAIMS	24	
FOR	NUMBER FILED	NUMBER EXTRA
TOTAL CHARGEABLE CLAIMS	24 minus 20 = *	4
INDEPENDENT CLAIMS	4 minus 3 = *	1
MULTIPLE DEPENDENT CLAIM PRESENT	<input type="checkbox"/>	

SMALL ENTITY TYPE  OR

OTHER THAN SMALL ENTITY

RATE	FEE
BASIC FEE	385.00
XS 9=	
X43=	
+145=	
TOTAL	

RATE	FEE
BASIC FEE	770.00
XS18=	72
X86=	86
+290=	0
TOTAL	928

\* If the difference in column 1 is less than zero, enter "0" in column 2

**CLAIMS AS AMENDED - PART II**

	(Column 1)	(Column 2)	(Column 3)
AMENDMENT A	CLAIMS REMAINING AFTER AMENDMENT	HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA
	Total	* 26 Minus ** 24 =	2
	Independent	* 7 Minus *** 4 =	3
FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM <input type="checkbox"/>			

SMALL ENTITY OR

OTHER THAN SMALL ENTITY

RATE	ADDITIONAL FEE
XS 9=	
X43=	
+145=	
TOTAL ADDIT. FEE	

RATE	ADDITIONAL FEE
XS18=	100
X86=	600
+290=	
TOTAL ADDIT. FEE	700

	(Column 1)	(Column 2)	(Column 3)
AMENDMENT B	CLAIMS REMAINING AFTER AMENDMENT	HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA
	Total	* Minus ** =	
	Independent	* Minus *** =	
FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM <input type="checkbox"/>			

RATE	ADDITIONAL FEE
XS 9=	
X43=	
+145=	
TOTAL ADDIT. FEE	

RATE	ADDITIONAL FEE
XS18=	
X86=	
+290=	
TOTAL ADDIT. FEE	

	(Column 1)	(Column 2)	(Column 3)
AMENDMENT C	CLAIMS REMAINING AFTER AMENDMENT	HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA
	Total	* Minus ** =	
	Independent	* Minus *** =	
FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM <input type="checkbox"/>			

RATE	ADDITIONAL FEE
XS 9=	
X43=	
+145=	
TOTAL ADDIT. FEE	

RATE	ADDITIONAL FEE
XS18=	
X86=	
+290=	
TOTAL ADDIT. FEE	

\* If the entry in column 1 is less than the entry in column 2, write "0" in column 3.  
 \*\* If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20."  
 \*\*\* If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3."  
 The "Highest Number Previously Paid For" (Total or Independent) is the highest number found in the appropriate box in column 1.





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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/737,029	12/16/2003	Daniel SauFu Mui	ZIL-568	4506

47713 7590 10/19/2006  
IMPERIUM PATENTENT WORKS  
P.O. BOX 587  
SUNOL, CA 94586

EXAMINER

BROWN, VERNAL U

ART UNIT PAPER NUMBER

2612

DATE MAILED: 10/19/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/737,029	MUI, DANIEL SAUFU	
	<b>Examiner</b>	<b>Art Unit</b>	
	Vernal U. Brown	2612	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1)  Responsive to communication(s) filed on 06 August 2006.
- 2a)  This action is **FINAL**.                      2b)  This action is non-final.
- 3)  Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4)  Claim(s) 1-26 is/are pending in the application.  
4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5)  Claim(s) 11, 12 and 17 is/are allowed.
- 6)  Claim(s) 1-10, 13-16, 19-21, 18, 22-26 is/are rejected.
- 7)  Claim(s) \_\_\_\_\_ is/are objected to.
- 8)  Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9)  The specification is objected to by the Examiner.
- 10)  The drawing(s) filed on \_\_\_\_\_ is/are: a)  accepted or b)  objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11)  The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12)  Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a)  All    b)  Some \*    c)  None of:
1.  Certified copies of the priority documents have been received.
  2.  Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3.  Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

**DETAILED ACTION**

This action is responsive to communication filed on August 06, 2006.

***Response to Amendment***

The examiner has acknowledged the amendment of claims 11, 13, 17, 19, and the addition of claims 25-26.

***Response to Arguments***

Applicant's arguments filed August 6, 2006 have been fully considered but they are not persuasive.

Applicant argues on page 10 that the reference of Wouters does not disclose a remote control device with a keypad that receive a signal in a radio frequency range and transmit a signal in a infrared frequency band, it is the examiner's position that Wouters teaches a remote control represented by the system of devices 1 and 2 that includes a receiver (13), keypad (3) and a transmitter (14) that transmit infrared code that received radio frequency signal (col. 3 lines 21-35).

Applicant's argues 11 (claims 14-16) that the reference of Wouters does not teach a key code that corresponds both to a function of an electronic consumer device as well as to a second function of a second electronic consumer device, it is the position Wouters teaches a key code generator (3) for generating key codes for controlling different function on various electrical appliances (col. 1 lines 24-26, col. 3 lines 21-35). The key codes for controlling the different devices inherently includes a first and second key code.

Regarding applicant's argument regarding claim 24 on page 12, Wouters teaches the microcontroller controlling the operation of the remote by converting the key code indications, which is the function to be performed by the device, into IR control signal and the IR control signal is transmitted by the remote control to the electronic device (col. 4 lines 50-60).

Regarding applicant's argument regarding claims 1, 3-4, and 9, Pope teaches receiving a keystroke indicator signal which contains an indication of a key on the remote control device 10 that was pressed (col. 2 lines 61-col. 3 line 19), generating a key code (codes for communicating the control function to the appliances) within the code generator 12. Applicant's describe the key stroke indicator signal as the signal that indicate which key on the remote control was pressed (page 3 lines 6-9) and also disclosed that the key code corresponds to a function of the electronic device (page 1 paragraph 003).

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

- (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.
- (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claim 13-16, 19, 22, and 24-26 are rejected under 35 U.S.C. 102(e) as being anticipated by Wouters et al. US Patent 6915109.

Regarding claims 13 and 22, Wouters et al. teaches a remote control which includes the system of devices 1 and 2 (figure 1) comprising a receiver receiving a RF modulated remote control signal (col. 4 lines 25-28) and a transmitter transmitting an infrared modulated signal generated from the received RF signal (col. 4 lines 28-33). Wouters et al. also teaches the key code corresponding to the key of keypad is transmitted when the key is selected (col. 4 lines 4 lines 48-57).

Regarding claims 14-16, Wouters et al. teaches the key code corresponding to the key of keypad is transmitted when the key is selected (col. 4 lines 4 lines 48-57). A key code corresponding to a second and third key code is therefore transmitted based on the selected key. Wouters et al. teaches fetching the data from memory corresponding to the key code (col. 4 lines 55-58). The data from the memory is inherently store as binary data. The key code therefore comprises binary data.

Regarding claims 19, Wouters et al. teaches a key code generator (3) for generating key codes for controlling different function on various electrical appliances (col. 1 lines 24-26, col. 3 lines 21-35). The key codes for controlling the different devices inherently includes a first and second key code. Wouters et al. teaches an antenna (9) for transmitting the key code from the key code generator to a remote control (12) and the remote control 12 transmit the key code to the selected appliances (col. 3 lines 31-34). Wouters et al. teaches the key code receive by the remote control is demodulated, decoded and transmitted to the appliance (col. 4 lines 25-37). The key code is therefore not stored in the memory of the remote control .

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Regarding claim 24, Wouters et al. teaches a microcontroller in the form of a microprocessor for receiving the key code (col. 4 lines 52-55).

Regarding claims 25-26, Wouters et al. teaches receiving a key stroke indicator signal (5) from a remote control (3) and the key code indicator signal is use by key code generator 8 to generate a key code (col. 3 lines 21-30);

modulating the key code signal unto a carrier and transmitting the key code to the remote control (12) (col. 4 lines 28-33) and the remote control transmit the key code to the electronic device (col. 3 lines 31-34). Wouters et al. teaches the key code receive by the remote control is demodulated, decoded and transmitted to the appliance (col. 4 lines 25-37). The key code is therefore not stored in the memory of the remote control .

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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Claims 1, 3-4, 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pope US Patent 5963624 in view of McNair et al. US Patent 5595342.

Regarding claim 1, Pope teaches receiving a keystroke indicator signal which contains an indication of a key on the remote control device 10 that was pressed (col. 2 lines 61-col. 3 line 19), generating a key code (codes for communicating the control function to the appliances) within the code generator 12 and transmitting the key codes to the appliances (col. 3 lines 35-40). Pope is however silent on teaching modulating the key code onto a carrier signal. McNair et al. in an art related control system teaches the control signal is modulated and transmitted to the controlled apparatus as a conventional practice (col. 2 lines 61-65).

It would have been obvious to one of ordinary skill in the art to modulate the key code onto a carrier signal in Pope because modulation of the key code enables the key code signal to be transmitted wirelessly to the appliances and this also represents a conventional practice.

Regarding claim 3, Pope teaches the key code generator 12 transmitting key code signal (control codes) to the consumer devices (col. 3 lines 35-40).

Regarding claim 4, Pope teaches the key code is indicated by low and high (col. 3 lines 45-47) implying the key code signal include ones and zeroes.

Regarding claim 9, Pope teaches the code generated by the code generator 12 is transmitted to the appliances (col. 3 lines 36-40). The code generated by the code generator is not store in the remote control because it is transmitted to the appliances.

Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Pope US Patent 5963624 in view of McNair et al. US Patent 5595342 and further in view of Goldstein US Patent 5410326.

Regarding claim 2, Pope teaches the remote control receiving key code signals (infrared control signal) from a controller (col. 4 lines 52-56) but is silent on teaching the key code generator transmit key codes to the remote control device. Goldstein in an art related programmable remote control invention teaches a key code generator in the form of a cable box (cable box is considered a key code generator, see page 3 lines 4-5 of the applicant's specification) transmitting key codes to the remote control (col. 13 lines 50-57) in order to update the remote control with new control codes.

It would have been obvious to one of ordinary skill in the art for the key code generator to transmit the key code to the remote control in Pope in view of McNair et al. because this provides the means for updating the remote control with new codes.

Claims 5 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pope US Patent 5963624 in view of McNair et al. US Patent 5595342 and further in view of Teskey US Patent 6747568.

Regarding claim 5, Pope teaches generating a key code for controlling the consumer appliances (col. 3 lines 35-40) but is silent on teaching the key code comprises timing information defining the binary number is modulated. Teskey in an art related remote control system teaches the format of the remote control signal having the necessary timing and modulation information (col. 3 line 60-col. 4 line 8).



It would have been obvious to one of ordinary skill in the art for the key code to include comprises timing information defining the binary number is modulated in Pope in view of McNair because the timing information defining the binary number is modulated represent information regarding the format of the remote control signal that enables the decoding and demodulating of the receive key code signals.

Regarding claim 10, Pope teaches generating a key code for controlling the consumer appliances (col. 3 lines 35-40) but is silent on teaching the key code comprises timing information defining the binary number (ones and zeroes) is modulated. Teskey in an art related remote control system teaches the format of the remote control signal having the necessary timing and modulation information (col. 3 line 60-col. 4 line 8).

It would have been obvious to one of ordinary skill in the art for the key code to include comprises timing information defining the binary number is modulated in Pope in view of McNair because the timing information defining the binary number is modulated represent information regarding the format of the remote control signal that enables the decoding and demodulating of the receive key code signals.

Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Pope US Patent 5963624 in view of McNair et al. US Patent 5595342 and further in view of August et al. US Patent 5671267.

Regarding claim 6, Pope teaches the use of the remote control to control the functions of the appliances (col. 2 line 61-col. 3 line 22) but is not explicit in teaching transmitting a keystroke indicator signal that cause the appliance to turn on. One skill in the art recognizes that

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a remote control is generally use in turning an appliance on/off and is further evidenced by August et al. (col. 8 lines 3-5).

It would have been obvious to one of ordinary skill in the art for the remote control to transmit a keystroke signal for turning the appliance on in Pope in view of McNair because Pope suggests the use of the remote control to control the functions of the appliances and one skill in the art recognizes that a remote control is generally use in turning an appliance on/off and is further evidenced by August et al.

Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Pope US Patent 5963624 in view of McNair et al. US Patent 5595342 and further in view of Wouster et al. US Patent 6915109

Regarding claim 7, Pope teaches the remote control receiving key code signals (infrared control signal) from a controller (col. 4 lines 52-56) and the remote control transmits control signal to the appliances (figure 1) but is silent on teaching modulating the key code onto carrier signal that is in the infrared frequency band. Wouters et al. in an art related remote control invention teaches a remote control receiving a RF modulated remote control signal (col. 4 lines 25-28) and a transmitter transmitting an infrared modulated signal generated from the received RF signal (col. 4 lines 28-33).

It would have been obvious to one of ordinary skill in the art to modulate the key code onto carrier signal that is in the infrared frequency band in Pope in view of McNair because infrared signal represents an alternative to radio signal used in the transmission of remote control signal.

Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Pope US Patent 5963624 in view of McNair et al. US Patent 5595342 in view of Wouster et al. US Patent 6915109 and further in view of August et al. US Patent 5671267.

Regarding claim 8, Pope teaches the use of the remote control to control the functions of the appliances (col. 2 line 61-col. 3 line 22) but is not explicit in teaching transmitting a keystroke indicator signal that cause the appliance to turn on. One skill in the art recognizes that a remote control is generally use in turning an appliance on/off and is further evidenced by August et al. (col. 8 lines 3-5).

It would have been obvious to one of ordinary skill in the art for the remote control to transmit a keystroke signal for turning the appliance on in Pope in view of McNair in view of Yamaguchi because Pope suggests the use of the remote control to control the functions of the appliances and one skilled in the art recognizes that a remote control is generally use in turning an appliance on/off and is further evidenced by August et al.

Claim 18 is rejected under 35 U.S.C. 103(a) as being unpatentable over Wouters et al. US Patent 6915109 in view of Teskey US Patent 6747568.

Regarding claim 18, Wouters et al. teaches the remote control transmit command codes to perform various functions (col. 4 lines 4 lines 48-57). Wouters is silent on teaching the key code comprises timing information defining the binary number is modulated. Teskey in an art related remote control system teaches the format of the remote control signal having the necessary timing and modulation information (col. 3 line 60-col. 4 line 8).

It would have been obvious to one of ordinary skill in the art for the key code to include timing information defining the binary number is modulated in Wouters et al. because the timing information defining the binary number represents information regarding the format of the remote control signal that enables the decoding and demodulating of the receive key code signals.

Claims 20-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wouters et al. US Patent 6915109 in view of August et al. US Patent 5671267.

Regarding claims 20-21, Wouters teaches the use of the remote control to control the functions of the appliances (col. 3 lines 31-35) but is not explicit in teaching transmitting a keystroke indicator signal that cause the appliance to turn on. One skill in the art recognizes that a remote control is generally use in turning an appliance on/off and is further evidenced by August et al. (col. 8 lines 3-5).

It would have been obvious to one of ordinary skill in the art for the remote control to transmit a keystroke signal for turning the appliance on in Wouters because Wouters suggests the use of the remote control to control the functions of the appliances and one skill in the art recognizes that a remote control is generally use in turning an appliance on/off and is further evidenced by August et al.

Claim 23 is rejected under 35 U.S.C. 103(a) as being unpatentable over Wouters et al. US Patent 6915109 in view of Pope US Patent 5963624.

Regarding claim 23, Wouters teaches transmitting key codes to remote control (see response to claim 13) but is not explicit in teaching the key code is not store on the remote

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control prior to the remote control receiving the key code. Pope in an art related remote control teaches the remote control receiving control codes updates (col. 4 lines 52-60). The receipt of the code update by the remote control implies that the code was not previously stored in the remote control prior transmitting the updates to the remote controller.

It would have been obvious to one of ordinary skill in the art for the key code is not store on the remote control prior to the remote control receiving the key code because the key codes transmitted to the remote control is used as a means of programming the remote control with new codes.

*Allowable Subject Matter*

Claims 11-12, and 17 are allowed.

Regarding claims 11-12, the prior art of record fail to teach or suggests no more than a single one of the key codes is present on the remote control at any given time.

Regarding claim 17, the prior art of record fail to teach or suggests the first and second key code are not stored in the device at the same time.

*Conclusion*

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO**

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MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

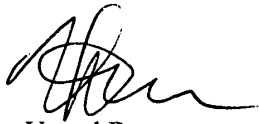
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Vernal U. Brown whose telephone number is 571-272-3060. The examiner can normally be reached on 8:30-7:00 Monday-Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wendy Garber can be reached on 571-272-7308. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.


Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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Vernal Brown  
October 4, 2006



BRIAN ZIMMERMAN  
PRIMARY EXAMINER

**Index of Claims**



Application/Control No.

10/737,029

Examiner

Vernal U. Brown

Applicant(s)/Patent under Reexamination

MUI, DANIEL SAUFU

Art Unit

2612

√	Rejected
=	Allowed

-	(Through numeral) Cancelled
+	Restricted

N	Non-Elected
I	Interference

A	Appeal
O	Objected

Claim		Date			
Final	Original	10/4/06			
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**AMENDMENT TRANSMITTAL LETTER**

December 19, 2006

MAIL STOP AF  
COMMISSIONER FOR PATENTS  
P.O. Box 1450  
ALEXANDRIA, VA 22313-1450

Re: Applicant: Daniel SauFu Mui  
Assignee: ZiLOG, Inc.  
Title: "Relaying Key Code Signals Through a Remote Control Device"  
Serial No.: 10/737,029  
Examiner: Vernal U. Brown  
Atty. Docket No.: ZIL-568  
Filed: December 16, 2003  
Art Unit: 2612

Dear Sir:

Transmitted herewith are the following documents:

- (1) Amendment with drawings (27 pages);
- (2) Return Postcard; and
- (3) This transmittal sheet (in duplicate).

- No additional Fee is required.
- The fee has been calculated as shown below:

CLAIMS AS AMENDED						
	REMAINING AFTER AMENDMENT		HIGHEST NO. PREVIOUSLY PAID FOR	EXTRA CLAIMS PRESENT	RATE	ADDITIONAL FEE
TOTAL CLAIMS	26	minus	26	0	\$50	\$0.00
INDEP. CLAIMS	7	minus	7	0	\$200	\$0.00
Total Additional Claim Fee						\$0.00
Fee for Extension of Time ( _ month) [\$1.17(a)(1)]						\$0.00
TOTAL						\$0.00
TOTAL						\$0.00

- A check is attached for the amount of:

I hereby certify that this correspondence is being deposited with the United States Postal Service as First Class Mail in an envelope addressed to: Mail Stop AF, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

By *Darien K. Wallace*  
Darien K. Wallace

Date of Deposit: December 19, 2006

Respectfully submitted,

*Darien K. Wallace*

Darien K. Wallace  
Attorney for Applicants  
Reg. No. 53,736  
Customer No. 47,713



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: Daniel SauFu Mui

Assignee: ZiLOG, Inc.

Title: "Relaying Key Code Signals Through a Remote Control Device"

Appl. No.: 10/737,029

Filing Date: December 16, 2003

Examiner: Vernal U. Brown

Art Unit: 2612

Docket No.: ZIL-568

December 19, 2006

Mail Stop AF  
COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, VA 22313-1450

**AMENDMENT**

Dear Sir:

In response to the outstanding, final office action dated October 19, 2006 ("Office Action"), Applicant responds as follows and requests the Examiner to amend the above-identified application as follows.

There are no amendments to the specification in this Amendment.

**Amendments to the Claims** are reflected in the listing of claims that begins on page 2 of this Amendment.

There are no amendments to the drawings in this Amendment.

The **Remarks** begin on page 8 of this Amendment.

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Filing Date: December 16, 2003  
Docket No.: ZIL-568

**Amendments to the Claims:**

This listing of claims replaces all prior versions and listings of claims in the application.

**Listing of Claims**

1. (original): A method comprising:
  - (a) receiving a keystroke indicator signal from a remote control device;
  - (b) generating a key code within a key code generator device;
  - (c) modulating said key code onto a carrier signal, thereby generating a key code signal; and
  - (d) transmitting said key code signal from said key code generator device.
2. (original): The method of Claim 1, wherein said key code signal is transmitted in (d) from said key code generator device to said remote control device.
3. (original): The method of Claim 1, wherein said key code signal is transmitted in (d) from said key code generator device to an electronic consumer device.
4. (original): The method of Claim 1, wherein said key code consists of a binary number.
5. (original): The method of Claim 1, wherein said key code comprises a binary number and timing information, and wherein said timing information defines how said binary number is modulated in (c) onto said carrier signal.
6. (original): The method of Claim 1, further comprising:
  - (e) pressing a power-on key of said remote control device causing said remote control device to transmit said keystroke indicator signal that is received

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in (a), wherein said key code signal transmitted in (d) is received onto an electronic consumer device, and wherein said pressing in (e) causes said electronic consumer device to turn on.

7. (original): The method of Claim 1, wherein said carrier signal is in a radio frequency band, wherein said key code signal is received by said remote control device, and wherein said method further comprises:

(e) modulating said key code onto a second carrier signal, thereby generating a second key code signal, said modulating being performed on said remote control device wherein said second carrier signal is in an infrared frequency band; and

(f) transmitting said second key code signal from said remote control device to an electronic consumer device.

8. (original): The method of Claim 7, further comprising:

(g) pressing a power-on key of said remote control device causing said remote control device to transmit said keystroke indicator signal that is received in (a), wherein the pressing in (g) causes said electronic consumer device to turn on.

9. (original): The method of Claim 1, wherein said key code generated in (b) is part of a codeset, and wherein said remote control device does not store said codeset.

10. (original): The method of Claim 9, wherein said codeset comprises timing information and a plurality of key codes, and wherein said timing information describes a digital one and a digital zero.

11. (previously presented): A method comprising:

(a) receiving a keystroke indicator signal from a remote control device;

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(b) generating a key code within a key code generator device;

(c) modulating said key code onto a carrier signal, thereby generating a key code signal; and

(d) transmitting said key code signal from said key code generator device, wherein a codeset comprises a plurality of key codes, each one of said plurality of key codes corresponding to a function of an electronic consumer device, and wherein no more than a single one of said plurality of key codes is present on said remote control device at any given time.

12. (original): The method of Claim 11, wherein said function of said electronic consumer device is taken from the group consisting of: power on, power off, channel advance, channel back, volume up, volume down, cursor up, cursor down, cursor right, cursor left, select, play, record, stop, forward, back and pause.

13. (previously presented): A remote control device comprising:

a receiver that receives a first key code signal, wherein said first key code signal is generated by modulating a key code onto a first carrier signal, said first carrier signal falling within a radio frequency band;

a transmitter that transmits a second key code signal, wherein said second key code signal is generated by modulating said key code onto a second carrier signal, said second carrier signal falling within an infrared frequency band; and

a keypad that includes a key that corresponds to said key code, wherein said key code corresponds to a function of an electronic consumer device.

14. (original): The device of Claim 13, wherein said key code corresponds to a second function of a second electronic consumer device, as well as to said function of said electronic consumer device.

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15. (original): The device of Claim 14, wherein said transmitter transmits a third key code signal, and wherein said third key code signal is generated by modulating said key code onto a third carrier signal.

16. (original): The device of Claim 14, wherein said key code comprises a first binary number and a second binary number, said first binary number corresponding to said function, and said second binary number corresponding to said second function.

17. (previously presented): A device comprising:

a receiver that receives a first key code signal, wherein said first key code signal is generated by modulating a key code onto a first carrier signal, said first carrier signal falling within a radio frequency band;

a transmitter that transmits a second key code signal, wherein said second key code signal is generated by modulating said key code onto a second carrier signal, said second carrier signal falling within an infrared frequency band;  
and

a keypad that includes a key that corresponds to said key code, wherein said key code corresponds to a function of an electronic consumer device, wherein said keypad includes a second key that corresponds to a second key code, wherein a third key code signal is generated by modulating said second key code onto a third carrier signal, wherein said third key code signal is received by said receiver, and wherein both said first key code and said second key code are not both stored in said device at the same time.

18. (original): The device of Claim 13, wherein a codeset comprises timing information and a plurality of key codes, wherein each of said plurality of key codes corresponds to a different function of said electronic consumer device, wherein said key code is a binary number, and wherein said timing information defines how said binary number is modulated onto said first carrier signal.

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19. (previously presented): A system comprising:

a key code generator device that generates a first key code and a second key code, wherein a codeset is stored on said key code generator device, said codeset including said first key code and said second key code, wherein said first key code corresponds to a selected function of a first electronic consumer device, and wherein said second key code corresponds to said selected function of a second electronic consumer device; and

means for relaying said first key code and said second key code from said key code generator device through a remote control device to said first electronic consumer device and to said second electronic consumer device without simultaneously storing both said first key code and said second key code on said remote control device.

20. (original): The system of Claim 19, wherein said selected function is taken from the group consisting of: power on, power off, channel advance, channel back, volume up, volume down, cursor up, cursor down, cursor right, cursor left, select, play, record, stop, forward, back and pause.

21. (original): The system of Claim 19, wherein said selected function is power on, and wherein said system automatically determines when said first electronic consumer device powers on.

22. (currently amended): A remote control device, comprising:

a keypad;

an RF receiver;

an IR transmitter; and

means for receiving a key code from said RF receiver and for sending said key code to said IR transmitter such that said key code is modulated onto an IR

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carrier signal, said IR carrier signal with said key code modulated thereon being transmitted from said remote control device by said IR transmitter.

23. (original): The remote control device of Claim 22, wherein said key code is not stored on said remote control device immediately prior to said means receiving the key code.

24. (original): The remote control device of Claim 22, wherein said means is a microcontroller.

25. (currently amended): A method comprising:

- (a) receiving a keystroke indicator signal from a remote control device;
- (b) using said keystroke indicator signal to generate a key code, wherein a key code generator device generates said key code;
- (c) modulating said key code onto a carrier signal and thereby generating a key code signal; and
- (d) transmitting said key code signal from said key code generator device to said remote control device, wherein said remote control device transmits said key code signal to an electronic consumer device.

26. (previously presented): The method of Claim 25, wherein said key code generated in (b) is part of a codeset, and wherein said codeset is not stored on said remote control device.



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### REMARKS

Reconsideration and allowance is respectfully requested.

Before entry of this amendment, claims 1-26 were pending. In the Office Action, claims 1-10, 13-16 and 18-26 were rejected, and claims 11-12 and 17 were allowed. In the present amendment, claims 22 and 25 are amended. After entry of the amendment, claims 1-26 are pending.

#### I. Claims 13-16, 19, 22 and 24-26

Claims 13-16, 19, 22 and 24-26 are rejected under 35 U.S.C. § 102(e) as being anticipated by Wouters et al. (USP 6,915,109) (Office Action, p. 4, lines 1-2).

##### A. Independent claims 13 and 22

Claim 13 recites, "A remote control device comprising: a receiver that receives a first key code signal . . . within a radio frequency band; a transmitter that transmits a second key code signal . . . within an infrared frequency band; and a keypad . . ." (emphasis added). Claim 22 as amended recites, "A remote control device, comprising: a keypad; an RF receiver; an IR transmitter" (emphasis added). Wouters does not form the basis for a valid rejection under § 102(e) because Wouters does not disclose all of the limitations of either claim 13 or claim 22. Specifically, Wouters does not disclose a device with a keypad that both receives a signal within a radio frequency band and transmits a signal within an infrared frequency band.

Wouters does not disclose a device with a keypad that transmits an IR signal and receives an RF signal. The Examiner has not stated a *prima facie* case of anticipation because that Examiner has not alleged that Wouters discloses a single device with a keypad that both transmits an IR signal and receives an RF signal. Instead, the Examiner states, "Wouters et al. teaches a remote control which includes the system of devices 1 and 2 (figure 1)

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comprising a receiver receiving a RF modulated remote control signal (col. 4 lines 25-28) and a transmitter transmitting an infrared modulated signal generated from the received RF signal (col. 4 lines 28-33).” (Office Action, p. 4, lines 3-6). The Examiner’s statement that Wouters discloses a system of devices 1 and 2 that comprise an RF receiver and an IR transmitter is insufficient to allege a *prima facie* case of anticipation of claims that recite a device comprising a keypad, a receiver and a transmitter. For example, claim 13 does not recite a system of devices, but rather “a remote control device”. The RF receiver, IR transmitter and keypad of Wouters are not on the same device. In fact, in Wouters the keypad on remote control unit 3 is in a separate room (1) from receiver 13 and transmitter 14 (room 2). And the unit 3, receiver 13 and transmitter 14 are the basis for the Examiner’s argument. (See Office Action, p. 2, lines 10-13).

The Examiner cites column 4, lines 25-28, of Wouters as disclosing an RF receiver and column 4, lines 28-33, as disclosing an IR transmitter (Office Action, p. 4, lines 5-6). The first passage from lines 25-28 describes radio receiver 13 on a device in room 2. The second passage from lines 28-33 refers to an IR transmitter also in room 2. Wouters does not disclose a keypad in room 2. The only keypad disclosed in Wouters is on IR remote control unit 3 in room 1. The remote control unit 3 described in lines 48-57 includes IR transmitter 4 and RF transmitter 8, but does not include an RF receiver. Thus, the Examiner does not state that Wouters discloses a single device with a keypad, an RF receiver and an IR transmitter. Nor does Wouters disclose a device with all three of these elements.

Because Wouters does not disclose all of the elements of either claim 13 or claim 22, reconsideration of the § 102(e) rejection and allowance of claims 13 and 22 are requested.

#### B. Dependent claims 14-16

Claim 14 recites “said key code corresponds to a second function of a

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second electronic consumer device, as well as to said function of said electronic consumer device". The Examiner has not presented a *prima facie* argument of anticipation of claim 14 because the Examiner has not stated that Wouters discloses a single key code that corresponds to two separate functions. Instead, the Examiner states, "A key code corresponding to a second and third key code is therefore transmitted based on the selected key." (Office Action, p. 4, lines 10-11) (emphasis added). But claim 14 does not recite second and third key codes; claim 14 recites only one key code. In addition, the Examiner states that "Wouters teaches a key code generator (3) for generating key codes for controlling different function on various electrical appliances (col. 1 lines 24-26, col. 3 lines 21-35). The key codes for controlling the different devices inherently includes a first and second key code." (Office Action, p. 2, lines 17-20) (emphasis added). Claim 14 does not recite first and second key codes. Instead, claim 14 recites "said key code", "said function" and "a second function". The Examiner has not stated that Wouters discloses one key code that corresponds both to a function of an electronic consumer device as well as to a second function of a second electronic consumer device. And in fact Wouters does not disclose one key code that corresponds to two separate functions of two different electronic consumer devices.

Claim 16 recites "said key code comprises a first binary number and a second binary number, said first binary number corresponding to said function, and said second binary number corresponding to said second function". The Examiner has not presented a *prima facie* argument of anticipation of claim 16 because the Examiner has not stated that Wouters discloses a key code comprising both (i) a first binary number that corresponds to a function of an electronic consumer device as well as (ii) a second binary number that corresponds to a second function of a second electronic consumer device. Instead, the Examiner simply states, "The data from the memory is inherently store as binary data. The key code therefore comprises binary data." (Office Action, p. 4, lines 13-14). The Examiner does not mention a first binary number

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of a key code corresponding to a first function, as well as a second binary number of the same key code corresponding to a second function. In fact, Wouters does not disclose a single key code that comprises two binary numbers, one corresponding to the function of one electronic consumer device, and the other corresponding to a second function of a second electronic consumer device.

Claims 14-16 depend directly or indirectly from claim 13. In addition to the reasons explained above, dependent claims 14-16 are allowable for at least the same reasons for which claim 13 is allowable. Reconsideration of the § 102(e) rejection and allowance of claims 14-16 are requested.

C. Dependent claim 24

Claim 24 recites that the means of claim 22 is a microcontroller. The means of claim 22 is a “means for receiving a key code from said RF receiver”. The Examiner states that Wouters discloses “a microcontroller in the form of a microprocessor for receiving the key code (col. 4 lines 52-55)” (Office Action, p. 5, lines 1-2). The passage of Wouters cited by the Examiner, however, does not disclose a microprocessor for receiving a key code from an RF receiver.

The remote control unit disclosed in the passage cited by the Examiner does not include an RF receiver. Therefore, the central processing unit (CPU) that is inside remote control unit 3 of Wouters does not receive a key code from any RF receiver. Instead, Wouters discloses that the CPU determines which code needs transmitting based on which key is tapped by the user. (No keypad is included in the devices in room 2 of Wouters.) Wouters explains:

“In this case the user taps a key, the CPU (Central processing unit) inside the remote control determines which code (corresponding to the tapped key) needs transmitting (by IR or RF) and fetches the required data from its memory which comprises a data base or other means in which tapped codes are linked to data to be transmitted” (Wouters, col. 4, lines 57-62) (emphasis added).

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Thus, Wouters does not disclose a microcontroller that receives a key code from an RF receiver.

Claim 24 depends from claim 22. In addition to the reasons explained above, dependent claim 24 is allowable for at least the same reasons for which claim 22 is allowable. Reconsideration of the § 102(e) rejection and allowance of claim 24 are requested.

D. Independent claim 19

In the Office action dated June 6, 2006, claim 19 was rejected as being anticipated by Pope (USP 5,963,624). Now in the present final Office Action, claim 19 is rejected under a new argument as being anticipated by Wouters.

Claim 19 recites, "said codeset including said first key code and said second key code, wherein said first key code corresponds to a selected function of a first electronic consumer device, and wherein said second key code corresponds to said selected function of a second electronic consumer device" (emphasis added). Wouters does not form the basis for a valid rejection under § 102(e) because Wouters does not disclose a codeset that includes two key codes: one key code corresponding to a function of one electronic consumer device, and the other key code corresponding to the same function ("said selected function") of another electronic consumer device.

The Examiner has not presented a *prima facie* argument of anticipation of claim 19 because the Examiner has not stated that Wouters discloses the two recited key codes that correspond to the same function on different electronic consumer devices. Nor has the Examiner stated that Wouters discloses that those two key codes are included in a codeset stored on a key code generator device. In fact, Wouters does not mention key codes that correspond to the same function on separate electronic consumer devices.

Because Wouters does not disclose all of the elements of claim 19, reconsideration of the § 102(b) rejection and allowance of claim 19 are requested.

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E. Independent claim 25

Claim 25 recites, “receiving a keystroke indicator signal from a remote control device; . . . transmitting said key code signal from said key code generator device to said remote control device, wherein said remote control device transmits said key code signal to an electronic consumer device.” (emphasis added). Wouters does not form the basis for a valid rejection of claim 25 under § 102(e) because Wouters does not disclose (i) receiving a keystroke indicator signal from a remote control device, (ii) transmitting a key code signal to the remote control device, and then (iii) transmitting the key code signal from the remote control device to an electronic consumer device.

The Examiner has not stated a *prima facie* case of anticipation because that Examiner has not alleged that Wouters discloses (i) receiving a signal from a remote control device, (ii) transmitting a second signal to the remote control device, and (iii) transmitting a third signal from the remote control device.

Instead, the Examiner states that Wouters discloses:

“receiving a key stroke indicator signal (5) from a remote control (3) and the key code indicator signal is used by key code generator 8 to generate a key code (col. 3 lines 21-30); modulating the key code signal unto a carrier and transmitting the key code to the remote control (12) (col. 4 lines 28-33) and the remote control transmit the key code to the electronic device (col. 3 lines 31-34). Wouters et al. teaches the key code receive by the remote control is demodulated, decoded and transmitted to the appliance (col. 4 lines 25-37).” (Office Action, p. 5, lines 3-9) (emphasis added)

The Examiner argues that the recited “keystroke indicator signal” is disclosed by infrared signal 5 of Wouters. Moreover, the Examiner argues that the recited “remote control device” is infrared remote control unit 3 of Wouters. But then the Examiner improperly argues that the item labeled 12 in room 2 of Wouters is also the recited remote control device. This is improper. The Examiner has engaged in improper claim construction by arguing (i) that the recited remote control device from which a keystroke indicator signal is received is disclosed by item 3 in room 1 of Wouters for purposes of one claim limitation, and (ii) that the same

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recited remote control device is disclosed by item 12 in room 2 of Wouters for purposes of another limitation of the same claim. Alternatively, the Examiner is arguing that the recited remote control device is in two rooms of Wouters at the same time. Therefore, Wouters does not disclose the recited remote control device from which a first signal is received and to which a second signal is transmitted.

An additional reason why the Examiner's argument fails is that Wouters does not disclose that item 12 in figure 1 is a remote control device. The reference numeral 12 does not appear at all in the specification of Wouters.

Because Wouters does not disclose all of the elements of claim 25, reconsideration of the § 102(b) rejection and allowance of claim 25 are requested.

#### F. Dependent claim 26

Claim 26 recites, "wherein said codeset is not stored on said remote control device". The Examiner states that infrared remote control unit 3 of Wouters discloses the recited "remote control device". (Office Action, p. 5, line 4) The Examiner also states, "The key code is therefore not stored in the memory of the remote control" (Office Action, p. 5, lines 9-10). First, the Examiner has not stated a *prima facie* case of anticipation of claim 26 because claim 26 does not recite "wherein the key code is not stored on said remote control device". Second, Wouters does not disclose that a codeset is not stored on infrared remote control unit 3. In fact, Wouters suggests the contrary:

"In this system a remote control unit is used which comprises both an IR transmitter and an antenna for transmission of RF signals. In this case the user taps a key, the CPU (Central processing unit) inside the remote control determines which code (corresponding to the tapped key) needs transmitting (by IR or RF) and fetches the required data from its memory which comprises a data base or other means in which tapped codes are linked to data to be transmitted." (Wouters, col. 4, lines 54-62) (emphasis added).

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Third, dependent claim 26 is allowable for at least the same reasons for which claim 25 is allowable because claim 26 depends from claim 25. Reconsideration of the § 102(e) rejection and allowance of claim 26 are requested.

## II. Claims 1, 3-4 and 9

Claims 1, 3-4 and 9 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Pope (USP 5,963,624) in view of McNair et al. (USP 5,595,342) (Office Action, p. 6, lines 1-2).

### A. Independent claim 1

Claim 1 recites, “(a) receiving a keystroke indicator signal from a remote control device; (b) generating a key code within a key code generator device . . . generating a key code signal”. The combination of Pope and McNair does not form the basis for a valid rejection of claim 1 under § 103(a) because the references when combined do not teach (i) generating a key code within a key code generator device, (ii) a keystroke indicator signal as well as a key code signal, or (iii) modulating a key code.

#### (i) Neither Pope nor McNair teaches generating a key code within a key code generator device.

The Examiner states that “Pope teaches receiving a keystroke indicator signal which contains an indication of a key on the remote control device 10 that was pressed (col. 2 lines 61-col. 3 line 19), generating a key code (codes for communicating the control function to the appliances) within the code generator 12 . . .” (Office Action, p. 6, lines 3-6) (emphasis added). Pope does not, however, teach generating a key code within base unit 12. The appliance control code that is transmitted by base unit 12 of Pope is not generated within base unit 12. Instead, base unit 12 receives the appliance control codes from handset 10/50. Pope explains:

“The present invention uses a digital cordless telephone handset to store a variety of appliance control codes. These appliance control



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codes can be transmitted to a base unit. The base unit can translate the appliance control codes to control signals such as infrared control signals, to control an electrical appliance" (Pope, col. 1, lines 31-36) (emphasis added) See also Pope, col. 2, lines 48-52 and 63-65.

The appliance control codes are not generated within the base unit 12 of Pope. Instead, the appliance control codes are transmitted from the handset 10/50 to the base unit 12, where they are translated to control signals. Base unit 12 of Pope does not receive a keystroke indicator and then generate a key code. Thus, Pope does not teach the recited "receiving a keystroke indicator signal from a remote control device" (emphasis added). Pope states, "Once an appliance control code is received by the base unit, the base unit will know to transfer the control code to an appliance" (Pope, col. 4, lines 49-51) (emphasis added). Thus, in Pope, an appliance control code is received by base unit 12 and is then transferred to an appliance; the appliance control code is not generated within base unit 12.

(ii) Pope and McNair do not teach both a keystroke indicator signal and a key code signal.

The Examiner states that "Pope teaches receiving a keystroke indicator signal which contains an indication of a key on the remote control device 10 that was pressed (col. 2 lines 61-col. 3 line 19), . . ." (Office Action, p. 6, lines 3-6). Nowhere, however, does Pope teach a keystroke indicator signal in the passage cited by the Examiner, which is reproduced below in its entirety:

"Keypad 30 includes the numbers 1-9, the "star" and the "pound" key. Additionally, "up arrow" key 30a and "down arrow" key 30b can be used to scroll through a menu. A "transmit" key 30c can be used to transmit the appliance control code once the appliance control has been selected. In one embodiment, the user gets into the menu by pressing an "up arrow" or a "down arrow" key. Alternately a "menu" button (not shown) is used. The keys for numbers 1-9 can have different meanings once the user is in the menu. Menu functions can be printed above the normal telephone control keys. FIG. 1 shows compact disc, television, cable and AC signal control menu-function buttons. The setup menu can be entered, one of

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these buttons pressed, and then using the up and down arrows, the specific controls for a given electrical appliance can be scrolled through. The different appliance controls can be listed in the order of frequency of use. For example, the "mute" function could be the first function listed in each menu selection.

Alternately, individual functions can be mapped with the associated buttons of the keypad, and a display 32 need not be used. Buttons similar to a "shift," "alt," and "control" on a normal computer keypad can be used to change the meanings of buttons "0" to "9," "star," and "pound." The different meanings associated with different buttons can be printed in different colors, which are the same colors of the associated buttons "shift," "alt," or "control." (Pope, col. 2, line 61 – col. 3, line 19) (emphasis added)

Thus, the passage of Pope above teaches appliance controls and appliance control codes but does not teach a keystroke indicator signal as the Examiner maintains.

Moreover, it is improper to construe the appliance control codes of Pope to teach both a keystroke indicator signal and a key code signal. According to the tenets of claim differentiation, a "keystroke indicator signal" cannot be interpreted to be the same as a "key code signal". Such a claim interpretation is presumptively unreasonable. *See, e.g., Karlin Tech. Inc. v. Surgical Dynamics Inc.*, 177 F.3d 968, 50 USPQ2d 1465, 1468 (Fed. Cir. 1999). In addition, such a claim interpretation would render claim 1 internally inconsistent because "keystroke indicator/key code" information that was already received by the key code generator device would later be generated by the key code generator device. Thus, Pope does not teach both a keystroke indicator and a key code. The handset 10/50 of Pope transmits an appliance control code and not a keystroke indicator.

(iii) Neither Pope nor McNair teaches modulating a key code.

The Examiner admits that Pope is silent on teaching modulating a key code onto a carrier signal. (Office Action, p. 6, line 7) Moreover, McNair does not teach modulating a key code. McNair does not teach a key code. And the

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Examiner does not state that McNair teaches modulating a key code onto a carrier signal. Instead, the Examiner states that McNair teaches “the control signal is modulated” (Office Action, p. 6, line 8). This is insufficient to establish a *prima facie* case of obviousness.

Moreover, there would be no motivation to combine McNair with Pope even if McNair did disclose a limitation of claim 1 (which it does not). McNair is directed to a control system for a gas-fired, central heating system and does not concern key code signals for electronic consumer devices.

Therefore, Pope and McNair do not form the basis for a valid rejection under § 103(a) because neither Pope nor McNair teaches (i) generating a key code within a key code generator device, (ii) a keystroke indicator signal as well as a key code signal, or (iii) modulating a key code. In addition, there is no motivation to combine McNair with Pope to arrive at all of the limitations of claim 1. For these reasons, reconsideration of the § 103(a) rejection and allowance of claim 1 are requested.

#### B. Dependent claims 3-4 and 9

Claim 9 recites, “said key code generated in (b) is part of a codeset, and wherein said remote control device does not store said codeset” (emphasis added). With respect to base claim 1, the Examiner states that “Pope teaches receiving a keystroke indicator signal which contains an indication of a key on the remote control device 10” (Office Action, p. 6, lines 3-4) (emphasis added). Thus, the Examiner considers that handset 10 of Pope teaches the remote control device recited in claim 9. The Examiner then states, “The code generated by the code generator is not store in the remote control because it is transmitted to the appliances” (Office Action, p. 6, lines 18-19). This incorrectly characterizes the teachings of Pope. The appliance control codes of Pope are indeed stored on handset 10 and are transmitted from handset 10 to base unit 12. Pope explains:

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“The present invention uses a digital cordless telephone handset to store a variety of appliance control codes. These appliance control codes can be transmitted to a base unit. The base unit can translate the appliance control codes to control signals such as infrared control signals, to control an electrical appliance” (Pope, col. 1, lines 31-36) (emphasis added)

“The cordless digital telephone handset includes a memory 66 . . . used to store the appliance control codes. Preferably, the appliance control codes can be transmitted to the base unit 12 . . .” (Pope, col. 2, lines 48-52) (emphasis added).

“Fig. 2 is a diagram of a handset 50 of the present invention. . . . The appliance control codes are stored in a memory 66” (Pope, col. 4, lines 17-28) (emphasis added).

Base unit 12 does not generate the appliance control codes. Instead, base unit 12 receives the appliance control codes, which were stored in memory 66 of handset 10, and then translates the appliance control codes into infrared control signals. Thus, Pope does not teach that handset 10 does not store a codeset.

Claims 3-4 and 9 depend from claim 1. In addition to the reasons explained above, dependent claims 3-4 and 9 are allowable for at least the same reasons for which claim 1 is allowable. Reconsideration of the § 103(a) rejection and allowance of claims 3-4 and 9 are requested.

### III. Dependent claim 2

Claim 2 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Pope in view of McNair and further in view of Goldstein (USP 5,410,326) (Office Action, p. 7, lines 1-2).

Claim 2 includes the following limitations of base claim 1, “(a) receiving a keystroke indicator signal from a remote control device; (b) generating a key code within a key code generator device . . . .” Claim 2 also recites “wherein said key code signal is transmitted in (d) from said key code generator device to said remote control device”.

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None of Pope, McNair or Goldstein teaches either (i) generating a key code within a key code generator device or (ii) both a keystroke indicator signal and a key code signal. Moreover, the Examiner seems to admit that Pope and McNair are silent on teaching that the key code generator transmits the key code signal to the remote control device. (Office Action, p. 7, lines 4-10). And Goldstein does not teach this limitation.

None of Pope, McNair or Goldstein teaches transmitting a key code signal from the key code generator device back to the remote control device. The fact that Goldstein may teach sending an IR code or an entire codeset from a cable television converter box to a remote control device to update the remote control device does not teach transmitting a key code signal from a key code generator device back to the remote control device. Indeed, Goldstein does not teach transmitting a key code signal as opposed to a key code or a codeset. The cable television converter box of Goldstein does not teach a key code generator because the cable television converter box of Goldstein receives complete codesets from a remote database or is loaded with complete codesets. (Goldstein, col. 15, lines 20-68; col. 17, lines 62-67). The television converter box of Goldstein is not a key code generator because the GLUE logic 95 in the universal remote control 5, as opposed to the television converter box, generates the IR sequences from the codes. Goldstein states, "The glue logic 95 will supply the IR sequences from codes, stored in the RAM 90, upon command of the user. . . . These codes describe carrier frequencies, pulse widths and pulse duration to be generated to the glue logic 95 for producing infrared pulses from the infrared diode 97" (Goldstein, col. 13, lines 23-33) (emphasis added). Thus, Goldstein does not teach transmitting a key code signal from a key code generator.

In addition, the motivation posited by the Examiner to combine Goldstein and Pope is non-existent. (See Office Action, p. 7, lines 11-13). There would be no motivation to update the remote control device of claim 2 with new codesets, as allegedly taught by Goldstein, because claim 2 does not recite that any key

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code or codeset is ever stored on the remote control device. Claim 2 recites transmitting a key code signal to the remote control device and does not recite transmitting a codeset to the remote control device. The motivation proposed by the Examiner would only result in a combination wherein codesets, or at least key codes, are stored on a remote control device.

The combination of Pope, McNair and Goldstein does not form the basis for a valid rejection of claim 2 under § 103(a) because the combination does not teach (i) generating a key code within a key code generator device, (ii) both a keystroke indicator signal and a key code signal, or (iii) transmitting a key code signal from the key code generator device back to the remote control device. Finally, there is no motivation to combine the teachings of Goldstein with the teachings of Pope and McNair in such a way as to obtain all of the limitations of claim 2. Therefore, reconsideration of the § 103(a) rejection and allowance of claim 2 are requested.

#### IV. Dependent claims 5 and 10

Claims 5 and 10 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Pope in view of McNair and further in view of Teskey (USP 6,747,568) (Office Action, p. 7, lines 14-16).

Claims 5 and 10 depend directly or indirectly from claim 1 and include the following limitations of claim 1: "(a) receiving a keystroke indicator signal from a remote control device; (b) generating a key code within a key code generator device . . . ." None of Pope, McNair or Teskey teaches (i) generating a key code within a key code generator device or (ii) both a keystroke indicator signal and a key code signal.

In addition, claim 10 recites that "said timing information describes a digital one and a digital zero". The Examiner admits that Pope "is silent on teaching the key code comprises timing information defining the binary number (ones and zeros) in modulated." But the Examiner states that Teskey "teaches the format of the remote control signal having the necessary timing and modulation

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information (col. line 60-col. 4 line 8)” (Office Action, p. 8, lines 7-10). Teskey does not, however, teach “the necessary timing and modulation information.” The passage of Teskey cited by the Examiner does not teach timing information that defines a digital one or a digital zero. In fact, Teskey does not mention a digital one, a digital zero or any type of mark/space representation.

The combination of Pope, McNair and Teskey does not form the basis for a valid rejection of either claim 5 or claim 10 under § 103(a) because the combination does not teach (i) generating a key code within a key code generator device or (ii) both a keystroke indicator signal and a key code signal. And with regard to claim 10, Teskey does not teach timing information that defines a digital one or a digital zero. Therefore, reconsideration of the § 103(a) rejection and allowance of claims 5 and 10 are requested.

#### V. Dependent claim 6

Claim 6 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Pope in view of McNair and further in view of August (USP 5,671,267) (Office Action, p. 8, lines 16-18).

Claim 6 includes the following limitations of base claim 1, “(a) receiving a keystroke indicator signal from a remote control device; (b) generating a key code within a key code generator device . . . .” None of Pope, McNair or August teaches (i) generating a key code within a key code generator device or (ii) both a keystroke indicator signal and a key code signal.

In addition, claim 6 recites, “(e) pressing a power-on key of said remote control device causing said remote control device to transmit said keystroke indicator signal that is received in (a), wherein said key code signal transmitted in (d) is received onto an electronic consumer device, and wherein said pressing in (e) causes said electronic consumer device to turn on” (emphasis added). The Examiner states that Pope “is not explicit in teaching transmitting a keystroke indicator signal that cause the appliance to turn on. One skill in the art recognizes that a remote control is generally use in turning an appliance on/off and is further

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evidence by August et al. (col. 8 lines 3-5)” (Office Action, p. 8, line 20 – p. 9, line 2). The Examiner has not presented a *prima facie* case of obviousness because the Examiner has not stated that August teaches a remote control device transmitting a keystroke indicator signal. Indeed, August does not teach a keystroke indicator signal. The passage of August cited by the Examiner teaches handset unit 10 of August using a key code signal, as opposed to a keystroke indicator signal, to turn a television set on and off. Interpreting a “keystroke indicator signal” to be the same as a “key code signal” would be contrary to the tenets of claim differentiation.

The combination of Pope, McNair and August does not teach (i) receiving a keystroke indicator signal from a remote control device, (ii) generating a key code within a key code generator, and (iii) transmitting a key code signal from the key code generator to an electronic consumer device to turn on the electronic consumer device. Nor does the combination teach both a keystroke indicator signal and a key code signal. Reconsideration of the § 103(a) rejection and allowance of claim 6 are requested.

#### VI. Dependent claim 7

Claim 7 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Pope in view of McNair and further in view of Wouters (Office Action, p. 9, lines 8-10).

Claim 7 includes the following limitations of base claim 1, “(a) receiving a keystroke indicator signal from a remote control device; (b) generating a key code within a key code generator device . . . .” The combination of Pope, McNair and Wouters teaches neither (i) generating a key code within a key code generator device nor (ii) both a keystroke indicator signal and a key code signal.

In addition, claim 7 recites “wherein said key code signal is received by said remote control device”. The Examiner states that “Pope teaches the remote control receiving key code signals (infrared control signal) from a controller (col. 4 lines 52-56)” (Office Action, p. 9, lines 11-12). The Examiner has not presented



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a *prima facie* case of obviousness because the Examiner has not stated that Pope teaches a remote control device that receives a key code signal from a key code generator device that generated the key code. The passage of Pope cited by the Examiner teaches receiving an infrared signal from a controller, such as a television remote control. The cited passage does not teach receiving a key code signal from a key code generator device. Interpreting a “remote control device” to be the same as a “key code generator device” recited in the same claim would be contrary to the tenets of claim differentiation.

The combination of Pope, McNair and Wouters does not form the basis for a valid rejection of claim 7 under § 103(a) because the combination does not teach any of (i) receiving a key code signal from the key code generator device back on the remote control device, (ii) both a keystroke indicator signal and a key code signal, or (iii) generating a key code within a key code generator device. Therefore, reconsideration of the § 103(a) rejection and allowance of claim 7 are requested.

#### VII. Dependent claim 8

Claim 8 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Pope in view of McNair and in view of Wouters and further in view of August (Office Action, p. 10, lines 1-3).

The 4-way combination of Pope, McNair, Wouters and August does not form the basis for a valid rejection of claim 8 under § 103(a) for the same reasons explained above with relation to claims 1 and 7. The 4-way combination does not teach any of (i) receiving a key code signal from the key code generator device back on the remote control device, (ii) both a keystroke indicator signal and a key code signal, or (iii) generating a key code within a key code generator device. Therefore, reconsideration of the § 103(a) rejection and allowance of claim 8 are requested.

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VIII. Dependent claim 18

Claim 18 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Wouters in view of Teskey (Office Action, p. 10, lines 14-15).

The combination of Wouters and Teskey does not form the basis for a valid rejection of claim 18 under § 103(a) for the same reasons explained above with relation to claim 13. Neither Wouters nor Teskey discloses a device with a keypad that both transmits an IR signal and receives an RF signal.

Because combination of Wouters and Teskey does not disclose all of the elements of claim 18, reconsideration of the § 102(e) rejection and allowance of claim 18 are requested

IX. Dependent claims 20-21

Claims 20-21 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Wouters in view of August (Office Action, p. 11, lines 6-7).

Both claim 20 and claim 21 depend from claim 19 and incorporate the limitations of claim 19. The combination of Wouters and August does not form the basis for a valid rejection of either claim 20 or claim 21 under § 103(a) for the same reasons explained above with relation to claim 19. Neither Wouters nor August discloses a codeset that includes two key codes: one key code corresponding to a function of one electronic consumer device, and the other key code corresponding to the same function of another electronic consumer device. The Examiner has not presented a *prima facie* argument of obviousness because the Examiner has not stated that the combination of Wouters and August discloses a codeset with two recited key codes that correspond to the same function on different electronic consumer devices. Neither Wouters nor August teaches the recited codeset with key codes that correspond to the same function on separate electronic consumer devices. August does not mention a codeset.

Because combination of Wouters and August does not disclose a codeset with two key codes that correspond to the same function on two electronic

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consumer devices, reconsideration of the § 103(a) rejection and allowance of claims 20-21 are requested.

X. Dependent claim 23

Claim 23 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Wouters in view of Pope (Office Action, p. 11, lines 18-19).

Claim 23 depends from claim 22 and incorporates the limitations of claim 22. The combination of Wouters and Pope does not form the basis for a valid rejection of claim 23 under § 103(a) for the same reasons explained above with relation to claim 22. Neither Wouters nor Pope teaches a device with a keypad, a radio frequency receiver and an infrared transmitter.

The RF receiver, IR transmitter and keypad of Wouters are not on the same device. The remote control unit 3 of Wouters does not include an RF receiver. Pope does not teach an RF receiver. And Pope even teaches against including an IR transmitter on the handset. Pope explains:

"One advantage of having the infrared transmitter attached to the base unit 12 is that the base unit 12 can be typically powered by house current. Since no battery is used, the infrared transmitter can draw more power than is used in battery-type systems. For example, if a button is continuously pressed in a battery-type system, in order to conserve power the infrared signal is not continuously sent, but is sent intermittently. The base unit 12 connected to AC power need not be limited in this fashion. Additionally, it is also possible to have the base unit 12 supply a greater amount of power to the infrared transmitter to transmit a greater amount of infrared energy. In this manner, it may be possible for the infrared bulb to not be focused directly towards the appliance" (Pope, col. 3, lines 46-60) (emphasis added).

Because combination of Wouters and Pope does not disclose all of the limitations of claim 23, reconsideration of the § 103(a) rejection and allowance of claim 23 are requested.

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XI. Conclusion

In view of the foregoing amendments and remarks, Applicant respectfully submits that the entire application (claims 1-26 are pending) is in condition for allowance. Applicant respectfully requests that a timely Notice of Allowance be issued in this case. If the Examiner would like to discuss any aspect of this application, the Examiner is requested to contact the undersigned at (925) 550-5067.

I hereby certify that this correspondence is being deposited with the United States Postal Service as First Class Mail in an envelope addressed to: Mail Stop AF, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

By *Darien K. Wallace*  
Darien K. Wallace

Date of Deposit: December 19, 2006

Respectfully submitted,

*Darien K. Wallace*

Darien K. Wallace  
Attorney for Applicants  
Reg. No. 53,736  
Customer No. 47,713

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**PATENT APPLICATION FEE DETERMINATION RECORD**  
 Substitute for Form PTO-875

**APPLICATION AS FILED - PART I**

FOR	NUMBER FILED (Column 1)	NUMBER EXTRA (Column 2)	RATE (\$) (Small Entity)	FEE (\$) (Small Entity)	RATE (\$) (Other Than Small Entity)	FEE (\$) (Other Than Small Entity)
BASIC FEE (37 CFR 1.16(a), (b), or (c))						
SEARCH FEE (37 CFR 1.16(k), (l), or (m))						
EXAMINATION FEE (37 CFR 1.16(e), (p), or (q))						
TOTAL CLAIMS (37 CFR 1.16(f))		minus 20 =	X =		X =	
INDEPENDENT CLAIMS (37 CFR 1.16(h))		minus 3 =	X =		X =	
APPLICATION SIZE FEE (37 CFR 1.16(s))	If the specification and drawings exceed 100 sheets of paper, the application size fee due is \$260 (\$125 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).					
MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(i))						
* If the difference in column 1 is (less than zero, enter "0" in column 2.			TOTAL		TOTAL	

**APPLICATION AS AMENDED - PART II**

12/26/06

AMENDMENT A	CLAIMS REMAINING AFTER AMENDMENT (Column 1)	HIGHEST NUMBER PREVIOUSLY PAID FOR (Column 2)	PRESENT EXTRA (Column 3)	RATE (\$) (Small Entity)	ADDITIONAL FEE (\$) (Small Entity)	RATE (\$) (Other Than Small Entity)	ADDITIONAL FEE (\$) (Other Than Small Entity)
	Total (37 CFR 1.16(f))	26	Minus ** 26	=	x 25 =		x 50 =
Independent (37 CFR 1.16(h))	7	Minus *** 7	=	x 100 =		x 200 =	
Application Size Fee (37 CFR 1.16(s))							
FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(i))				TOTAL ADD'L FEE		TOTAL ADD'L FEE	

AMENDMENT B	CLAIMS REMAINING AFTER AMENDMENT (Column 1)	HIGHEST NUMBER PREVIOUSLY PAID FOR (Column 2)	PRESENT EXTRA (Column 3)	RATE (\$) (Small Entity)	ADDITIONAL FEE (\$) (Small Entity)	RATE (\$) (Other Than Small Entity)	ADDITIONAL FEE (\$) (Other Than Small Entity)
	Total (37 CFR 1.16(f))		Minus **	=	X =		X =
Independent (37 CFR 1.16(h))		Minus ***	=	X =		X =	
Application Size Fee (37 CFR 1.16(s))							
FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(i))				TOTAL ADD'L FEE		TOTAL ADD'L FEE	

\* If the entry in column 1 is less than the entry in column 2, write "0" in column 3.  
 \*\* If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20".  
 \*\*\* If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3".  
 The "Highest Number Previously Paid For" (Total or Independent) is the highest number found in the appropriate box in column 1.  
 This collection of information is required by 37 CFR 1.16. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.  
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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: Daniel SauFu Mui  
Assignee: ZiLOG, Inc.  
Title: "Relaying Key Code Signals Through a Remote Control Device"  
Appl. No.: 10/737,029 Filing Date: December 16, 2003  
Examiner: Vernal U. Brown Art Unit: 2612  
Docket No.: ZIL-568

July 28, 2006

Mail Stop Amendment  
COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, VA 22313-1450

**AMENDMENT**

Dear Sir:

In response to the outstanding, non-final office action dated June 6, 2006 ("Office Action"), Applicant responds as follows and requests the Examiner to amend the above-identified application as follows.

**Amendments to the Specification** begin on page 2 of this Amendment.

**Amendments to the Claims** are reflected in the listing of claims that begins on page 3 of this Amendment.

There are no amendments to the drawings in this Amendment.

The **Remarks** begin on page 9 of this Amendment.

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/737,029	12/16/2003	Daniel SauFu Mui	ZIL-568	4506

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EXAMINER

BROWN, VERNAL U

ART UNIT	PAPER NUMBER
2612	

MAIL DATE	DELIVERY MODE
02/07/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Advisory Action Before the Filing of an Appeal Brief</b>	<b>Application No.</b> 10/737,029	<b>Applicant(s)</b> MUI, DANIEL SAUFU	
	<b>Examiner</b> Vernal U. Brown	<b>Art Unit</b> 2612	

**--The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

THE REPLY FILED 3 FAILS TO PLACE THIS APPLICATION IN CONDITION FOR ALLOWANCE.

1.  The reply was filed after a final rejection, but prior to or on the same day as filing a Notice of Appeal. To avoid abandonment of this application, applicant must timely file one of the following replies: (1) an amendment, affidavit, or other evidence, which places the application in condition for allowance; (2) a Notice of Appeal (with appeal fee) in compliance with 37 CFR 41.31; or (3) a Request for Continued Examination (RCE) in compliance with 37 CFR 1.114. The reply must be filed within one of the following time periods:

a)  The period for reply expires 3 months from the mailing date of the final rejection.

b)  The period for reply expires on: (1) the mailing date of this Advisory Action, or (2) the date set forth in the final rejection, whichever is later. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of the final rejection.

Examiner Note: If box 1 is checked, check either box (a) or (b). ONLY CHECK BOX (b) WHEN THE FIRST REPLY WAS FILED WITHIN TWO MONTHS OF THE FINAL REJECTION. See MPEP 706.07(f).

Extensions of time may be obtained under 37 CFR 1.136(a). The date on which the petition under 37 CFR 1.136(a) and the appropriate extension fee have been filed is the date for purposes of determining the period of extension and the corresponding amount of the fee. The appropriate extension fee under 37 CFR 1.17(a) is calculated from: (1) the expiration date of the shortened statutory period for reply originally set in the final Office action; or (2) as set forth in (b) above, if checked. Any reply received by the Office later than three months after the mailing date of the final rejection, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**NOTICE OF APPEAL**

2.  The Notice of Appeal was filed on \_\_\_\_\_. A brief in compliance with 37 CFR 41.37 must be filed within two months of the date of filing the Notice of Appeal (37 CFR 41.37(a)), or any extension thereof (37 CFR 41.37(e)), to avoid dismissal of the appeal. Since a Notice of Appeal has been filed, any reply must be filed within the time period set forth in 37 CFR 41.37(a).

**AMENDMENTS**

3.  The proposed amendment(s) filed after a final rejection, but prior to the date of filing a brief, will not be entered because

(a)  They raise new issues that would require further consideration and/or search (see NOTE below);

(b)  They raise the issue of new matter (see NOTE below);

(c)  They are not deemed to place the application in better form for appeal by materially reducing or simplifying the issues for appeal; and/or

(d)  They present additional claims without canceling a corresponding number of finally rejected claims.

NOTE: \_\_\_\_\_. (See 37 CFR 1.116 and 41.33(a)).

4.  The amendments are not in compliance with 37 CFR 1.121. See attached Notice of Non-Compliant Amendment (PTOL-324).

5.  Applicant's reply has overcome the following rejection(s): \_\_\_\_\_.

6.  Newly proposed or amended claim(s) \_\_\_\_\_ would be allowable if submitted in a separate, timely filed amendment canceling the non-allowable claim(s).

7.  For purposes of appeal, the proposed amendment(s): a)  will not be entered, or b)  will be entered and an explanation of how the new or amended claims would be rejected is provided below or appended.

The status of the claim(s) is (or will be) as follows:

Claim(s) allowed: 11, 12 and 17.

Claim(s) objected to: \_\_\_\_\_.

Claim(s) rejected: 1-10, 13-16 and 18-26.

Claim(s) withdrawn from consideration: \_\_\_\_\_.

**AFFIDAVIT OR OTHER EVIDENCE**

8.  The affidavit or other evidence filed after a final action, but before or on the date of filing a Notice of Appeal will not be entered because applicant failed to provide a showing of good and sufficient reasons why the affidavit or other evidence is necessary and was not earlier presented. See 37 CFR 1.116(e).

9.  The affidavit or other evidence filed after the date of filing a Notice of Appeal, but prior to the date of filing a brief, will not be entered because the affidavit or other evidence failed to overcome all rejections under appeal and/or appellant fails to provide a showing of a good and sufficient reasons why it is necessary and was not earlier presented. See 37 CFR 41.33(d)(1).


10.  The affidavit or other evidence is entered. An explanation of the status of the claims after entry is below or attached.

**REQUEST FOR RECONSIDERATION/OTHER**

11.  The request for reconsideration has been considered but does NOT place the application in condition for allowance because:  
See Continuation Sheet.

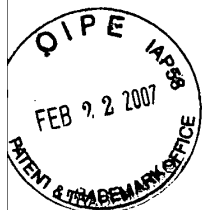
12.  Note the attached Information Disclosure Statement(s). (PTO/SB/08) Paper No(s). \_\_\_\_\_

13.  Other: \_\_\_\_\_

  
**BRIAN ZIMMERMAN**  
**PRIMARY EXAMINER**



Continuation of 11. does NOT place the application in condition for allowance because: Regarding applicant's argument regarding the system of devices as disclosed by Wouters, it is the examiner's position that the remote control device as claimed, is not limited to a single housing. The remote control device of Wouters which includes subcomponents 1 and 12 (figure 1) for receiving a RF modulated remote control signal (col. 4 lines 25-28) and a transmitter transmitting an infrared modulated signal generated from the received RF signal (col. 4 lines 28-33) and further includes a keypad (col. 4 lines 44-58) anticipates the invention as claimed.



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: Daniel SauFu Mui
Assignee: ZiLOG, Inc.
Title: "Relaying Key Code Signals Through a Remote Control Device"
Appl. No.: 10/737,029 Filing Date: December 16, 2003
Examiner: Vernal U. Brown Art Unit: 2612
Docket No.: ZIL-568

February 19, 2007

Mail Stop AF
COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, VA 22313-1450

NOTICE OF APPEAL FROM THE PRIMARY EXAMINER TO THE BOARD OF PATENT APPEALS AND INTERFERENCES

Applicant hereby appeals to the Board of Patent Appeals and Interferences from the decision of the Primary Examiner dated October 19, 2006, finally rejecting claims 1-10, 13-16 and 18-26 of the above-referenced application.

A Petition For A One-Month Extension Of Time is submitted along with this Notice of Appeal. A check is enclosed that includes the \$500 Notice of Appeal fee required under 37 CFR §41.20(b)(1) and the \$120 1-month extension fee.

I hereby certify that this correspondence is being deposited with the United States Postal Service as First Class Mail in an envelope addressed to: Mail Stop AF, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.
By Darien K. Wallace
Date of Deposit: February 19, 2007

Respectfully submitted,

Darien K. Wallace
Darien K. Wallace
Attorney for Applicants
Reg. No. 53,736
Customer No. 47,713
(925) 550-5067

02/23/2007 DEHHANU1 00000049 10737029

01 FC:1401

500.00 DP



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Appellant: Daniel SauFu Mui
Assignee: ZiLOG, Inc.
Title: "Relaying Key Code Signals Through a Remote Control Device"
Appl. No.: 10/737,029 Filing Date: December 16, 2003
Examiner: Vernal U. Brown Art Unit: 2612
Docket No.: ZIL-568

February 19, 2007

Mail Stop AF
COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, VA 22313-1450

PETITION FOR EXTENSION OF TIME

Dear Sir:

Appellant respectfully petitions under 37 C.F.R. §1.136 for a one-month extension of time within which to file a Notice of Appeal following the 3-month period after the final Office Action dated October 19, 2006, such extension allowing the undersigned until February 20, 2007, to file the Notice of Appeal.

As set forth in the enclosed transmittal letter, a check in the amount of \$620.00 is enclosed that includes the one-month extension fee as provided by 37 C.F.R. §1.17(a)(1).

I hereby certify that this correspondence is being deposited with the United States Postal Service as First Class Mail in an envelope addressed to: Mail Stop AF, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.
By Darien K. Wallace
Date of Deposit: February 19, 2007

Respectfully submitted,

[Handwritten signature of Darien K. Wallace]

Darien K. Wallace
Attorney for Applicant
Reg. No. 53,736
Customer No. 47,713

02/23/2007 DEMMANU1 00000049 10737029

02 FC:1251

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AFS  
AD

**NOTICE OF APPEAL TRANSMITTAL LETTER**

February 19, 2007

MAIL STOP APPEAL BRIEF - PATENTS  
COMMISSIONER FOR PATENTS  
P.O. Box 1450  
ALEXANDRIA, VA 22313-1450

Re: Applicant: Daniel SauFu Mui  
Assignee: ZiLOG, Inc.  
Title: "Relaying Key Code Signals Through a Remote Control Device"  
Serial No.: 10/737,029 Filed: December 16, 2003  
Examiner: Vernal U. Brown Art Unit: 2612  
Atty. Docket No.: ZIL-568

Dear Sir:

Transmitted herewith are the following documents:

- (1) Notice of Appeal (1 page);
- (2) Petition for a 1-Month Extension of Time (1 page);
- (3) a check for Notice of Appeal fee and 1-month extension fee (\$620);
- (4) Return Postcard; and
- (5) This transmittal sheet.

- No additional Fee is required.
- The fee has been calculated as shown below:

CLAIMS AS AMENDED						
	REMAINING AFTER AMENDMENT		HIGHEST NO. PREVIOUSLY PAID FOR	EXTRA CLAIMS PRESENT	RATE	ADDITIONAL FEE
TOTAL CLAIMS	26	minus	26	0	\$50	\$0.00
INDEP. CLAIMS	7	minus	7	0	\$200	\$0.00
Total Additional Claim Fee						\$0.00
Fee for Notice of Appeal [§41.20(b)(1)]						\$500.00
Fee for Request for Oral Hearing [§41.20(b)(3)]						\$0.00
Fee for Extension of Time ( 1 month) [§1.17(a)(1)]						\$120.00
TOTAL						\$620.00
<input checked="" type="checkbox"/> A check is attached for the amount of:						\$620.00

I hereby certify that this correspondence is being deposited with the United States Postal Service as First Class Mail in an envelope addressed to: Mail Stop AF, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

By Darien K. Wallace  
Darien K. Wallace

Date of Deposit: February 19, 2007

Respectfully submitted,

Darien K. Wallace  
Attorney for Applicants  
Reg. No. 53,736  
Customer No. 47,713



*TUAF*

### APPEAL BRIEF TRANSMITTAL LETTER

March 24, 2007

MAIL STOP APPEAL BRIEF - PATENTS  
COMMISSIONER FOR PATENTS  
P.O. Box 1450  
ALEXANDRIA, VA 22313-1450

Re: Applicant: Daniel SauFu Mui  
Assignee: ZiLOG, Inc.  
Title: "Relaying Key Code Signals Through a Remote Control Device"  
Serial No.: 10/737,029 Filed: December 16, 2003  
Examiner: Vernal U. Brown Art Unit: 2612  
Atty. Docket No.: ZIL-568

Dear Sir:

Transmitted herewith are the following documents:

- (1) appeal brief (37 pages);
- (2) a check for the appeal brief fee (\$500);
- (6) return postcard; and
- (7) this transmittal sheet.

- No additional Fee is required.
- The fee has been calculated as shown below:

CLAIMS AS AMENDED						
	REMAINING AFTER AMENDMENT		HIGHEST NO. PREVIOUSLY PAID FOR	EXTRA CLAIMS PRESENT	RATE	ADDITIONAL FEE
TOTAL CLAIMS	26	minus	26	0	\$50	\$0.00
INDEP. CLAIMS	7	minus	7	0	\$200	\$0.00
Total Additional Claim Fee						\$0.00
Fee for Appeal Brief [§41.20(b)(2)]						\$500.00
Fee for Request for Oral Hearing [§41.20(b)(3)]						\$0.00
Fee for Extension of Time ( __ month) [§1.17(a)(1)]						\$0.00
TOTAL						\$500.00
<input checked="" type="checkbox"/> A check is attached for the amount of:						\$500.00

I hereby certify that this correspondence is being deposited with the United States Postal Service as First Class Mail in an envelope addressed to: Mail Stop Appeal Brief - Patents, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

By *Darien K. Wallace*  
Darien K. Wallace

Date of Deposit: March 24, 2007

Respectfully submitted,

*Darien K. Wallace*

Darien K. Wallace  
Attorney for Applicants  
Reg. No. 53,736  
Customer No. 47,713

03/27/2007 16:58:48 00000098 10737029 500-00-00 01-FC1402



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Appellant: Daniel SauFu Mui  
Assignee: ZiLOG, Inc.  
Title: "Relaying Key Code Signals Through a Remote Control Device"  
Appl. No.: 10/737,029 Filing Date: December 16, 2003  
Examiner: Vernal U. Brown Art Unit: 2612  
Docket No.: ZIL-568

March 24, 2007

Mail Stop Appeal Brief - Patents  
COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, VA 22313-1450

**APPEAL BRIEF**

This Appeal Brief is filed pursuant to 37 CFR § 41.37 in support of the Notice of Appeal dated on February 19, 2007.

**I. REAL PARTY IN INTEREST**

The real party in interest is the assignee, ZiLOG, Inc., as named in the caption above.

**II. RELATED APPEALS AND INTERFERENCES**

Based on information and belief, there are no appeals or interferences that could directly affect or be directly affected by or have a bearing on the decision by the Board of Patent Appeals and Interferences (the "Board") in the pending appeal.

**III. STATUS OF CLAIMS**

The application at issue, filed on December 16, 2003, included 24 claims. In an amendment dated July 28, 2006, claims 25-26 were added. Claims 1-26 are subject to this Appeal.

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Appellant: Daniel SauFu Mui  
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#### IV. STATUS OF AMENDMENTS

An amendment dated December 19, 2006, was filed subsequent to a final Office action dated October 19, 2006 ("Office Action"). An Advisory Action dated February 7, 2007 ("Advisory Action"), stated that the amendment was entered. The advisory action included an explanation of how the amended claims would be rejected.

#### V. SUMMARY OF CLAIMED SUBJECT MATTER

The following summary pursuant to 37 CFR §41.37(c)(1)(v) is a concise explanation of the claims and is to be read in light of the disclosure. This summary does not limit the claims. (See MPEP §1206).

An embodiment of Appellant's novel system 10 is illustrated in figure 1 (replicated below). System 10 relays a key code through a remote control device

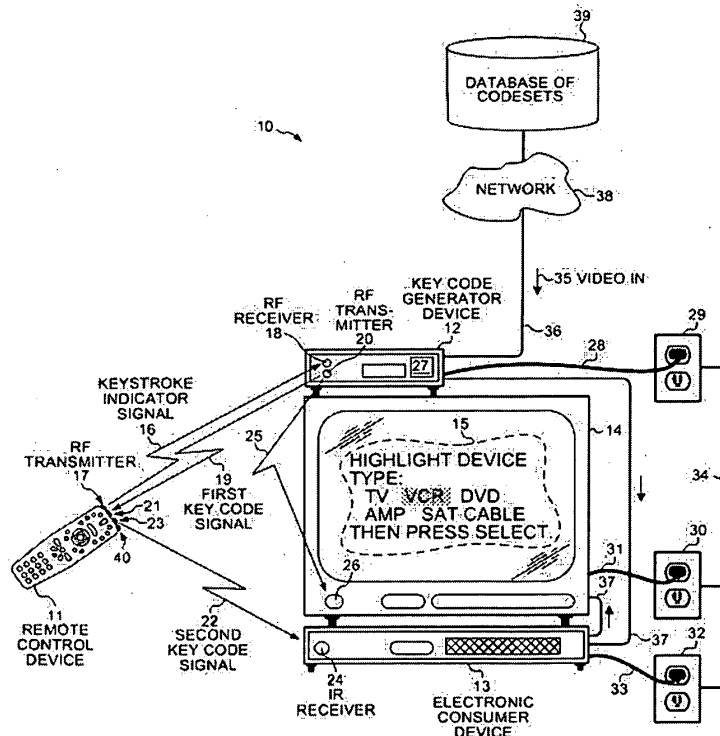


FIG. 1

Appeal Brief  
 Application Serial No. 10/737,029

Appellant: Daniel SauFu Mui  
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Filing Date: December 16, 2003  
Docket No.: ZIL-568

to an electronic consumer device. The key code is not stored in the remote control device in a permanent manner, but rather is relayed through the remote control device. System 10 includes a remote control device 11, a key code generator device 12, a first electronic consumer device 13 (a VCR) and a second electronic consumer device 14 (a TV).

Upon receiving a keystroke indicator signal from remote control 11, key code generator 12 identifies the particular codeset usable to communicate with the selected electronic consumer device. The keystroke indicator signal contains an indication of a key on the remote control that was pressed, which corresponds to a function of the selected electronic consumer device. Using the identified codeset and the indication of the pressed key, key code generator 12 generates a key code and modulates that key code onto a radio frequency carrier signal, thereby generating a first key code signal 19. Remote control 11 receives first key code signal 19 from key code generator 12 and modulates the key code onto an infrared frequency carrier signal, thereby generating a second key code signal 22. Remote control 11 relays the key code to the selected electronic consumer device in second key code signal 22. The key code causes the selected electronic consumer device to perform the desired function.

**A. Independent claim 1**

Independent claim 1 is directed to a method of generating a key code within a key code generator device, as described in steps 101 through 104 in figure 2 (replicated below). As shown in figures 1 and 2, claim 1 recites a method of (a) receiving keystroke indicator signal 16 from remote control device 11 (Specification, p. 6, lines 26-28); (b) generating a key code within key code generator device 12 (Specification, p. 8, lines 14-16); (c) modulating the key code onto a carrier signal thereby generating first key code signal 19 (Specification, p. 8, lines 26-29); and (d) transmitting key code signal 19 from key code generator device 12 (Specification, p. 11, lines 4-5).



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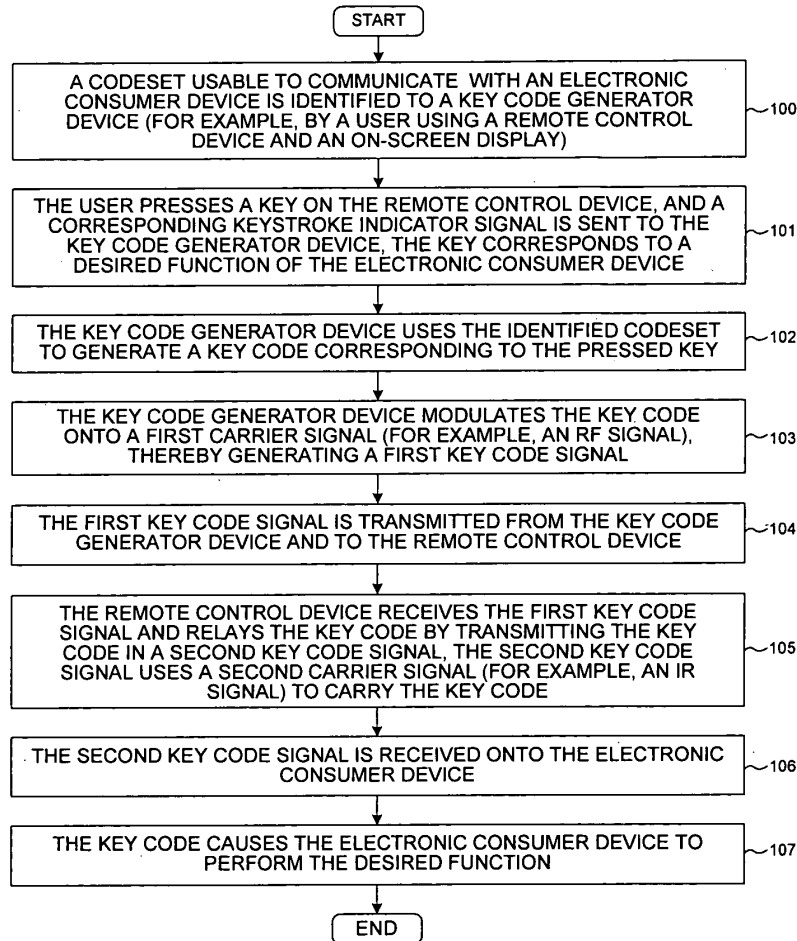
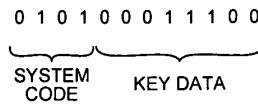


FIG. 2

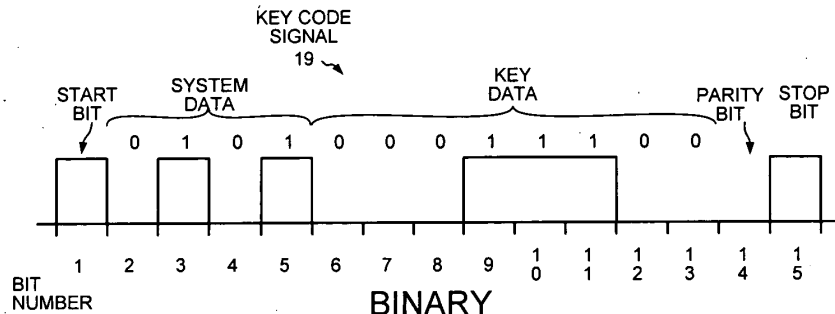
Dependent claim 2 is directed to the method of claim 1, but includes the limitation that first key code signal 19 is transmitted from key code generator device 12 to remote control device 11 (Specification, p. 11, lines 6-7). Dependent claim 3 includes a limitation that first key code signal 19 is transmitted from key code generator 12 to the selected electronic consumer device (Specification, p. 12, lines 13-15). Dependent claim 4 includes the limitation that the key code consists of a binary number (Specification, p. 8, lines 18-20) as depicted in figure 3 (replicated below).

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 Serial No.: 10/737,029  
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 Docket No.: ZIL-568

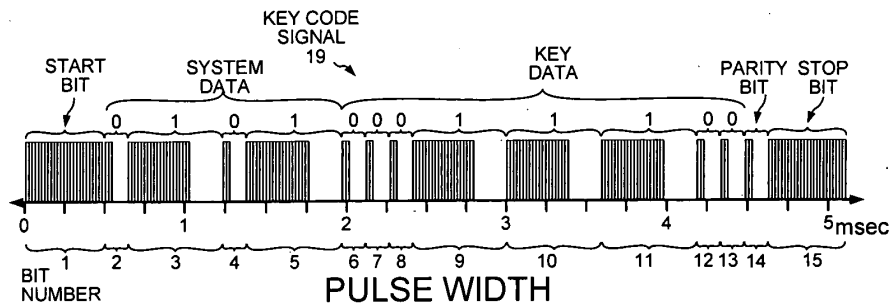


**KEY CODE  
FIG. 3**

Dependent claim 5 includes the limitation that the key code comprises a binary number and timing information. The timing information defines how said binary number is modulated onto the carrier signal to generate first key code signal 19 (Specification, p. 9, lines 9-11) as depicted in figures 4 and 5 (replicated below).



**BINARY  
TRANSMISSION  
FIG. 4**



**PULSE WIDTH  
MODULATION  
FIG. 5**

Dependent claim 6 includes the limitation that keystroke indicator signal 16 corresponds to a power-on function, and first key code signal 19 is received

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onto an electronic consumer device and causes the electronic consumer device to be powered on. Dependent claim 7 recites that first key code signal 19 is received by remote control device 11 and includes the further steps of (e) modulating the key code onto a second carrier signal, thereby generating second key code signal 22 (Specification, p. 11, lines 8-11) and (f) transmitting second key code signal 22 to the selected electronic consumer device (Specification, p. 12, lines 1-3). Claim 7 also includes the limitation that the first carrier signal is in a radio frequency band and the second carrier signal is in an infrared frequency band.

Dependent claim 8 is directed to the method of claim 7, but includes a further limitation that keystroke indicator signal 16 corresponds to a power-on function, and second key code signal 22 causes the selected electronic consumer device to be powered on (Specification, p. 12, lines 4-7).

Dependent claim 9 includes the limitation that the key code is part of a codeset and that the codeset is not stored in remote control device 11 (Specification, p. 19, lines 11-13). Dependent claim 10 is directed to the method of claim 9, but includes a limitation that the codeset comprises timing information and a plurality of key codes. Furthermore, the timing information describes a digital one and a digital zero, as described at page 11, lines 26-28, of the Specification.

#### **B. Independent claim 13**

Independent claim 13 relates to remote control device 11 shown in figure 1. Remote control device 11 comprises: an RF receiver 21 that receives a first key code signal 19 (Specification, p. 11, lines 5-6); an IR transmitter 23 that transmits a second key code signal 22 (Specification, p. 11, lines 17-21); and a keypad that includes a key that corresponds to a key code. The key code corresponds to a function of an electronic consumer device. First key code signal 19 is generated by modulating the key code onto a first carrier signal having a radio frequency band. Second key code signal 22 is generated by

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modulating the key code onto a second carrier signal having an infrared frequency band.

Dependent claim 14 is directed to the remote control device of claim 13, but includes the limitation that the key code corresponds to the function and to a second function. The second function corresponds to a second electronic consumer device. Dependent claim 16 is directed to the remote control device of claim 14, but includes the limitation that the key code comprises a first binary number and a second binary number. The first binary number corresponds to the function, and the second binary number corresponds to the second function.

Dependent claim 18 is directed to the remote control device of claim 13, but includes the limitation that a codeset comprises timing information and a plurality of key codes. Each key code is a binary number and corresponds to a different function of the electronic consumer device. Furthermore, the timing information defines how the binary number is modulated onto the first carrier signal (Specification, p. 11, lines 26-28).

**C. Independent Claim 19**

Claim 19 is directed to a key code generator device and a means for relaying key codes from the key code generator device through a remote control device. The key code generator device generates a first key code and a second key code. Claim 19 recites a "means for relaying said first key code and said second key code from said key code generator device through a remote control device." More specifically, the first key code corresponds to a function of a first electronic consumer device, and the second key code corresponds to the same function of a second electronic consumer device (Specification, p. 15, lines 25-26). As illustrated in Figure 1, the corresponding structure includes remote control device 11.

**D. Independent Claim 22**

Claim 22 is directed to remote control device 11 comprising a key pad, RF

Appellant: Daniel SauFu Mui  
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receiver 21, IR transmitter 23, and a means for receiving a key code from RF receiver 21 and for sending the key code to IR transmitter 23. Claim 24 recites that the corresponding structure includes a microcontroller integrated circuit (Specification, p. 13, line 27).

**E. Independent claim 25**

Independent claim 25 is directed to a method for relaying a key code from key code generator 12 to an electronic consumer device through remote control device 11, and includes the steps 101 through 105 depicted in figure 2. Claim 25 recites a method of (a) receiving keystroke indicator signal 16 from remote control device 11 (Specification, p. 6, lines 26-28); (b) using keystroke indicator signal 16 to generate a key code within key code generator device 12 (Specification, p. 8, lines 14-16); (c) modulating the key code onto a carrier signal thereby generating first key code signal 19 (Specification, p. 8, lines 26-29); and (d) transmitting a key code signal from key code generator device 12 to remote control device 11 (Specification, p. 11, lines 4-7) and transmitting the key code signal to an electronic consumer device from remote control device 11.

Dependent claim 26 is directed to the method of claim 25 but includes the limitation that the key code is part of a codeset, and the codeset is not stored in remote control device 11 (Specification, p. 19, lines 11-13).

**VI. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL**

The following are grounds of rejection to be reviewed on appeal:

- 1) Claims 13-16, 19, 22, and 24-26 stand rejected under 35 USC §102(e) as being anticipated by Wouters et al. (US Patent 6,915,109).
- 2) Claims 1, 3-4, 9 stand rejected under 35 USC §103(a) as being unpatentable over Pope (US Patent 5,963,624) in view of McNair et al. (US Patent 5,595,342).

Appellant: Daniel SauFu Mui  
Serial No.: 10/737,029  
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3) Claim 2 stands rejected under 35 USC §103(a) as being unpatentable over Pope in view of McNair and further in view of Goldstein (US Patent 5,410,326).

4) Claim 5 and 10 stand rejected under 35 USC §103(a) as being unpatentable over Pope in view of McNair and further in view of Teskey (US Patent 6,747,568).

5) Claim 6 stands rejected under 35 USC §103(a) as being unpatentable over Pope in view of McNair and further in view of August et al. (US Patent 5,671,267).

6) Claim 7 stands rejected under 35 USC §103(a) as being unpatentable over Pope in view of McNair and further in view of Wouters.

7) Claim 8 stands rejected under 35 USC §103(a) as being unpatentable over Pope in view of McNair in view of Wouters and further in view of August.

8) Claim 18 stands rejected under 35 USC §103(a) as being unpatentable over Wouters in view of Teskey.

9) Claim 20-21 stand rejected under 35 USC §103(a) as being unpatentable over Wouters in view of August.

10) Claim 23 stands rejected under 35 USC §103(a) as being unpatentable over Wouters in view of Pope.

## VII. ARGUMENT

### A. Claims 13-16, 19, 22, and 24-26 (1st ground of rejection)

Claims 13-16, 19, 22 and 24-26 are rejected under 35 U.S.C. § 102(e) as being anticipated by Wouters et al. US Patent 6,915,109. (Office Action, p. 4, lines 1-2). "A rejection for anticipation under section 102 requires that each and

Appellant: Daniel SauFu Mui  
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every limitation of the claimed invention be disclosed in a single prior art reference.” *In re Paulsen*, 30 F.3d 1475, 1478-79, 31 USPQ2d 1671, 1673 (Fed. Cir. 1994) citing *In re Spada*, 911 F.2d 705, 708, 15 USPQ2d 1655, 1657 (Fed. Cir. 1990).

**1. Independent claims 13 and 22**

Claim 13 recites, “A remote control device comprising: a receiver that receives a first key code signal . . . within a radio frequency band; a transmitter that transmits a second key code signal . . . within an infrared frequency band; and a keypad . . .” (emphasis added). Claim 22 recites, “A remote control device, comprising: a keypad; an RF receiver; an IR transmitter . . .” (emphasis added).

Wouters does not form the basis for a valid rejection under § 102(e) because Wouters does not disclose all of the limitations of either claim 13 or claim 22. Although Wouters discloses a system of devices including an IR remote control unit 3 in room 1 and an RF receiver 13 and an IR transmitter 14 in room 2, Wouters does not disclose a device with a keypad that both receives a signal within a radio frequency band and transmits a signal within an infrared frequency band.

The Examiner has not alleged that Wouters discloses a single device with a keypad that both receives an RF signal and transmits an IR signal. Instead, the Examiner states, “Wouters et al. teaches a remote control which includes the system of devices 1 and 2 (figure 1) comprising a receiver receiving a RF modulated remote control signal (col. 4 lines 25-28) and a transmitter transmitting an infrared modulated signal generated from the received RF signal (col. 4 lines 28-33).” (Office Action, p. 4, lines 3-6). The Examiner’s statement that Wouters discloses a system of devices 1 and 2 that comprise an RF receiver and an IR transmitter is insufficient to allege a *prima facie* case of anticipation of claims that recite a device comprising a keypad, a receiver and a transmitter. In fact, the only keypad disclosed in Wouters is on remote control unit 3, which is located in a separate room (room 1) from RF receiver 13 and IR transmitter 14 (room 2).

Appellant: Daniel SauFu Mui  
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The remote control unit 3 described at column 4, lines 48-57, includes IR transmitter 4 and RF transmitter 8, but does not include an RF receiver. Thus, the Examiner does not state that Wouters discloses a single device with a keypad, an RF receiver and an IR transmitter. Nor does Wouters disclose a device with all three of these elements.

In the Advisory Action, the Examiner states, "Regarding applicant's argument regarding the system of devices as disclosed by Wouters, it is the examiner's position that the remote control device as claimed, is not limited to a single housing" (Advisory Action, p. 2, lines 2-3) (emphasis added). The Examiner then again cites column 4, lines 25-28, column 4, lines 28-33 and column 4, lines 44-58, of Wouters as disclosing all of the elements of claims 13 and 22. The Examiner is improperly interpreting the claim term "remote control device" contrary to how that term is used in the claims and in the specification. Both claims 13 and 22 recite a "device" and not a "system". As the term "remote control device" is depicted in the drawings and used in the specification, such a "remote control device" does not describe a "system" with an RF receiver in one room of a house and an RF transmitter in another room of the house.

Finally, this statement that disavows any claim scope to a "remote control device" with an RF receiver in one room and an RF transmitter in another room is dispositive to claim interpretation. By virtue of this disclaimer of claim scope, the term a "remote control device" is to be interpreted as excluding a "system" with multiple components in separate rooms. *See Invitrogen Corporation v. Biocrest Manufacturing*, 327 F.3d 1364, 1368, 66 USPQ2d 1631, 1633 (Fed. Cir. 2003); *Inverness Med. Switz. GmbH v. Princeton Biomeditech Corp.*, 309 F.3d, 1365, 1372, 64 USPQ2d 1926, 1932 (Fed. Cir. 2002); *Rheox*, 276 F.3d at 1327, 61 USPQ2d at 1374; *CVI/Beta Ventures, Inc. v. Tura LP*, 112 F.3d 1146, 1159, 42 USPQ2d 1577, 1583 (Fed. Cir. 1997); *Southwall Techs. Corp. v. Cardinal IG Co.*, 54 F.3d 1570, 1576, 34 USPQ2d 1673, 1676 (Fed. Cir.), *cert. denied*, 116 S.Ct. 515 (1995).



Appellant: Daniel SauFu Mui  
Serial No.: 10/737,029  
Filing Date: December 16, 2003  
Docket No.: ZIL-568

Because Wouters does not disclose all of the elements of either claim 13 or claim 22, reversal of the improper §102(e) rejection of claims 13 and 22 by the Board is requested.

## **2. Dependent claims 14-16**

Claim 14 recites "said key code corresponds to a second function of a second electronic consumer device, as well as to said function of said electronic consumer device" (emphasis added). Wouters does not disclose one key code that corresponds to two separate functions of two different electronic consumer devices.

The Examiner has not stated that Wouters discloses a single key code that corresponds to two separate functions. Instead, the Examiner states, "A key code corresponding to a second and third key code is therefore transmitted based on the selected key." (Office Action, p. 4, lines 10-11) (emphasis added). In addition, the Examiner states that "Wouters teaches a key code generator (3) for generating key codes for controlling different function on various electrical appliances (col. 1 lines 24-26, col. 3 lines 21-35). The key codes for controlling the different devices inherently include a first and second key code." (Office Action, p. 2, lines 17-20) (emphasis added). However, claim 14 does not recite a first and second key code. Instead, claim 14 recites "said key code", "said function" and "a second function". The Examiner has not stated that Wouters discloses one key code that corresponds both to a function of an electronic consumer device as well as to a second function of a second electronic consumer device.

Claim 16 recites "said key code comprises a first binary number and a second binary number, said first binary number corresponding to said function, and said second binary number corresponding to said second function" (emphasis added). Wouters does not disclose a single key code that comprises two binary numbers, one corresponding to the function of one electronic

Appellant: Daniel SauFu Mui  
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consumer device, and the other corresponding to a second function of a second electronic consumer device.

The Examiner has not presented a *prima facie* argument of anticipation of claim 16 because the Examiner has not stated that Wouters discloses a key code comprising both (i) a first binary number that corresponds to a function of an electronic consumer device as well as (ii) a second binary number that corresponds to a second function of a second electronic consumer device. Instead, the Examiner simply states, "The data from the memory is inherently store as binary data. The key code therefore comprises binary data." (Office Action, p. 4, lines 13-14). The Examiner does not mention a first binary number of a key code corresponding to a first function, as well as a second binary number of the same key code corresponding to a second function.

Claims 14-16 depend directly or indirectly from claim 13. In addition to the reasons explained above, dependent claims 14-16 are allowable for at least the same reasons for which claim 13 is allowable. Reversal of the improper §102(e) rejection of claims 14-16 by the Board is requested.

### **3. Dependent claim 24**

Claim 24 recites that the means of claim 22 is a microcontroller. The means of claim 22 is a "means for receiving a key code from said RF receiver". The Examiner states that Wouters discloses "a microcontroller in the form of a microprocessor for receiving the key code (col. 4 lines 52-55)" (Office Action, p. 5, lines 1-2). The passage of Wouters cited by the Examiner, however, does not disclose a microprocessor for receiving a key code from an RF receiver.

The remote control unit disclosed in the passage cited by the Examiner does not include an RF receiver. Therefore, the central processing unit (CPU) that is inside remote control unit 3 of Wouters does not receive a key code from any RF receiver. Instead, Wouters discloses that the CPU determines which code needs transmitting based on which key is tapped by the user. (No keypad is included in the devices in room 2 of Wouters.) Wouters explains:

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"In this case the user taps a key, the CPU (Central processing unit) inside the remote control determines which code (corresponding to the tapped key) needs transmitting (by IR or RF) and fetches the required data from its memory which comprises a data base or other means in which tapped codes are linked to data to be transmitted" (Wouters, col. 4, lines 57-62) (emphasis added).

Thus, Wouters does not disclose a microcontroller that receives a key code from an RF receiver.

Claim 24 depends from claim 22. In addition to the reasons explained above, dependent claim 24 is allowable for at least the same reasons for which claim 22 is allowable. Reversal of the § 102(e) rejection and allowance of claim 24 are requested.

#### **4. Independent claim 19**

Claim 19 recites, "said codeset including said first key code and said second key code, wherein said first key code corresponds to a selected function of a first electronic consumer device, and wherein said second key code corresponds to said selected function of a second electronic consumer device" (emphasis added). Wouters does not form the basis for a valid rejection under §102(e) because Wouters does not disclose a codeset that includes two key codes: one key code corresponding to a function of one electronic consumer device, and the other key code corresponding to the same function ("said selected function") of another electronic consumer device.

The Examiner has not presented a *prima facie* argument of anticipation of claim 19 because the Examiner has not stated that Wouters discloses the two recited key codes that correspond to the same function on different electronic consumer devices. Nor has the Examiner stated that Wouters discloses that those two key codes are included in a codeset stored on a key code generator device. In fact, Wouters does not mention key codes that correspond to the same function on separate electronic consumer devices.

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Because Wouters does not disclose all of the elements of claim 19, reversal of the improper §102(e) rejection of claim 19 by the Board is requested.

#### **5. Independent claim 25**

Claim 25 recites, “receiving a keystroke indicator signal from a remote control device; . . . transmitting said key code signal from said key code generator device to said remote control device, wherein said remote control device transmits said key code signal to an electronic consumer device.” (emphasis added). Wouters does not form the basis for a valid rejection of claim 25 under § 102(e) because Wouters does not disclose (i) receiving a keystroke indicator signal from a remote control device, (ii) transmitting a key code signal to the remote control device, and then (iii) transmitting the key code signal from the remote control device to an electronic consumer device.

The Examiner has not stated a *prima facie* case of anticipation because that Examiner has not alleged that Wouters discloses (i) receiving a signal from a remote control device, (ii) transmitting a second signal to the remote control device, and (iii) transmitting a third signal from the remote control device. Instead, the Examiner states that Wouters discloses:

“receiving a key stroke indicator signal (5) from a remote control (3) and the key code indicator signal is used by key code generator 8 to generate a key code (col. 3 lines 21-30); modulating the key code signal unto a carrier and transmitting the key code to the remote control (12) (col. 4 lines 28-33) and the remote control transmit the key code to the electronic device (col. 3 lines 31-34). Wouters et al. teaches the key code receive by the remote control is demodulated, decoded and transmitted to the appliance (col. 4 lines 25-37).” (Office Action, p. 5, lines 3-9) (emphasis added)

The Examiner argues that the recited “keystroke indicator signal” is disclosed by infrared signal 5 of Wouters. Moreover, the Examiner argues that the recited “remote control device” is infrared remote control unit 3 of Wouters. But then the Examiner improperly argues that the item labeled 12 in room 2 of Wouters is also the recited remote control device. This is improper. The Examiner has engaged

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in improper claim construction by arguing (i) that the recited remote control device from which a keystroke indicator signal is received is disclosed by item 3 in room 1 of Wouters for purposes of one claim limitation, and (ii) that the same recited remote control device is disclosed by item 12 in room 2 of Wouters for purposes of another limitation of the same claim. Alternatively, the Examiner is arguing that the recited remote control device is in two rooms of Wouters at the same time. Therefore, Wouters does not disclose the recited remote control device from which a first signal is received and to which a second signal is transmitted.

An additional reason why the Examiner's argument fails is that Wouters does not disclose that item 12 in figure 1 is a remote control device. The reference numeral 12 does not appear at all in the specification of Wouters.

Because Wouters does not disclose all of the elements of claim 25, reversal of the improper §102(e) rejection of claim 25 by the Board is requested.

#### **6. Dependent claim 26**

Claim 26 recites, "wherein said codeset is not stored on said remote control device". The Examiner states that infrared remote control unit 3 of Wouters discloses the recited "remote control device". (Office Action, p. 5, line 4) The Examiner also states, "The key code is therefore not stored in the memory of the remote control" (Office Action, p. 5, lines 9-10). First, the Examiner has not stated a *prima facie* case of anticipation of claim 26 because claim 26 does not recite "wherein the key code is not stored on said remote control device". Second, Wouters does not disclose that a codeset is not stored on infrared remote control unit 3. In fact, Wouters suggests the contrary:

"In this system a remote control unit is used which comprises both an IR transmitter and an antenna for transmission of RF signals. In this case the user taps a key, the CPU (Central processing unit) inside the remote control determines which code (corresponding to the tapped key) needs transmitting (by IR or RF) and fetches the required data from its memory which comprises a data base or other means in which

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tapped codes are linked to data to be transmitted." (Wouters, col. 4, lines 54-62) (emphasis added).

Third, dependent claim 26 is allowable for at least the same reasons for which claim 25 is allowable because claim 26 depends from claim 25. Reversal of the improper §102(e) rejection of claim 26 by the Board is requested.

**B. Claims 1, 3-4 and 9 (2nd ground of rejection)**

Claims 1, 3-4 and 9 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Pope (USP 5,963,624) in view of McNair et al. (USP 5,595,342) (Office Action, p. 6, lines 1-2). To establish a *prima facie* case of obviousness, the Examiner must demonstrate that "the reference (or references when combined) must teach or suggest all the claimed limitations." MPEP § 2142.

**1. Independent claim 1**

Claim 1 recites, "(a) receiving a keystroke indicator signal from a remote control device; (b) generating a key code within a key code generator device . . . generating a key code signal". The combination of Pope and McNair does not form the basis for a valid rejection of claim 1 under § 103(a) because the references when combined do not teach (i) generating a key code within a key code generator device, (ii) a keystroke indicator signal as well as a key code signal, or (iii) modulating a key code.

**(i) Neither Pope nor McNair teaches generating a key code within a key code generator device.**

The Examiner states that "Pope teaches receiving a keystroke indicator signal which contains an indication of a key on the remote control device 10 that was pressed (col. 2 lines 61-col. 3 line 19), generating a key code (codes for communicating the control function to the appliances) within the code generator 12 ..." (Office Action, p. 6, lines 3-6) (emphasis added). Pope does not,

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however, teach generating a key code within base unit 12. The appliance control code that is transmitted by base unit 12 of Pope is not generated within base unit 12. Instead, base unit 12 receives the appliance control codes from handset 10/50. In Pope, a digital cordless telephone handset 10/50 is used as a universal remote control device to control electrical appliances. Pope explains:

“The present invention uses a digital cordless telephone handset to store a variety of appliance control codes. These appliance control codes can be transmitted to a base unit. The base unit can translate the appliance control codes to control signals such as infrared control signals, to control an electrical appliance” (Pope, col. 1, lines 31-36) (emphasis added). See *also* Pope, col. 2, lines 48-52 and 63-65.

The appliance control codes are not generated within the base unit 12 of Pope. Instead, the appliance control codes are transmitted from the handset 10/50 to the base unit 12, where they are translated to control signals. Base unit 12 of Pope does not receive a keystroke indicator and then generate a key code. Thus, Pope does not teach the recited “receiving a keystroke indicator signal from a remote control device” (emphasis added). Pope states, “Once an appliance control code is received by the base unit, the base unit will know to transfer the control code to an appliance” (Pope, col. 4, lines 49-51) (emphasis added). Thus, in Pope, an appliance control code is received by base unit 12 and is then transferred to an appliance; the appliance control code is not generated within base unit 12.

**(ii) Pope and McNair do not teach both a keystroke indicator signal and a key code signal.**

The Examiner states that “Pope teaches receiving a keystroke indicator signal which contains an indication of a key on the remote control device 10 that was pressed (col. 2 lines 61-col. 3 line 19), . . .” (Office Action, p. 6, lines 3-6). Nowhere, however, does Pope teach a keystroke indicator signal in the passage cited by the Examiner, which is reproduced below in its entirety:

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"Keypad 30 includes the numbers 1-9, the "star" and the "pound" key. Additionally, "up arrow" key 30a and "down arrow" key 30b can be used to scroll through a menu. A "transmit" key 30c can be used to transmit the appliance control code once the appliance control has been selected. In one embodiment, the user gets into the menu by pressing an "up arrow" or a "down arrow" key. Alternately a "menu" button (not shown) is used. The keys for numbers 1-9 can have different meanings once the user is in the menu. Menu functions can be printed above the normal telephone control keys. FIG. 1 shows compact disc, television, cable and AC signal control menu-function buttons. The setup menu can be entered, one of these buttons pressed, and then using the up and down arrows, the specific controls for a given electrical appliance can be scrolled through. The different appliance controls can be listed in the order of frequency of use. For example, the "mute" function could be the first function listed in each menu selection.

Alternately, individual functions can be mapped with the associated buttons of the keypad, and a display 32 need not be used. Buttons similar to a "shift," "alt," and "control" on a normal computer keypad can be used to change the meanings of buttons "0" to "9," "star," and "pound." The different meanings associated with different buttons can be printed in different colors, which are the same colors of the associated buttons "shift," "alt," or "control." (Pope, col. 2, line 61 – col. 3, line 19) (emphasis added)

Thus, the passage of Pope above teaches appliance controls and appliance control codes but does not teach a keystroke indicator signal as the Examiner maintains.

Moreover, it is improper to construe the appliance control codes of Pope to teach both a keystroke indicator signal and a key code signal. According to the tenets of claim differentiation, a "keystroke indicator signal" cannot be interpreted to be the same as a "key code signal". Such a claim interpretation is presumptively unreasonable. *See, e.g., Karlin Tech. Inc. v. Surgical Dynamics Inc.*, 177 F.3d 968, 50 USPQ2d 1465, 1468 (Fed. Cir. 1999). In addition, such a claim interpretation would render claim 1 internally inconsistent because "keystroke indicator/key code" information that was already received by the key code generator device would later be generated by the key code generator device. Thus, Pope does not teach both a keystroke indicator and a key code.



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The handset 10/50 of Pope transmits an appliance control code and not a keystroke indicator.

**(iii) Neither Pope nor McNair teaches modulating a key code.**

The Examiner admits that Pope is silent on teaching modulating a key code onto a carrier signal. (Office Action, p. 6, line 7) Moreover, McNair does not teach modulating a key code. McNair does not teach a key code. And the Examiner does not state that McNair teaches modulating a key code onto a carrier signal. Instead, the Examiner states that McNair teaches “the control signal is modulated” (Office Action, p. 6, line 8). This is insufficient to establish a *prima facie* case of obviousness.

Moreover, there would be no motivation to combine McNair with Pope even if McNair did disclose a limitation of claim 1 (which it does not). McNair is directed to a control system for a gas-fired, central heating system and does not concern key code signals for electronic consumer devices.

Therefore, Pope and McNair do not form the basis for a valid rejection under § 103(a) because neither Pope nor McNair teaches (i) generating a key code within a key code generator device, (ii) a keystroke indicator signal as well as a key code signal, or (iii) modulating a key code. In addition, there is no motivation to combine McNair with Pope to arrive at all of the limitations of claim 1. For these reasons, reconsideration of the § 103(a) rejection and allowance of claim 1 are requested.

**2. Dependent claims 3-4 and 9**

Claim 9 recites, “said key code generated in (b) is part of a codeset, and wherein said remote control device does not store said codeset” (emphasis added). With respect to base claim 1, the Examiner states that “Pope teaches receiving a keystroke indicator signal which contains an indication of a key on the remote control device 10” (Office Action, p. 6, lines 3-4) (emphasis added). Thus, the Examiner considers that handset 10 of Pope teaches the remote control device recited in claim 9. The Examiner then states, “The code

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generated by the code generator is not store in the remote control because it is transmitted to the appliances” (Office Action, p. 6, lines 18-19). This incorrectly characterizes the teachings of Pope. The appliance control codes of Pope are indeed stored on handset 10 and are transmitted from handset 10 to base unit 12. Pope explains:

“The present invention uses a digital cordless telephone handset to store a variety of appliance control codes. These appliance control codes can be transmitted to a base unit. The base unit can translate the appliance control codes to control signals such as infrared control signals, to control an electrical appliance” (Pope, col. 1, lines 31-36) (emphasis added)

“The cordless digital telephone handset includes a memory 66 . . . used to store the appliance control codes. Preferably, the appliance control codes can be transmitted to the base unit 12 . . .” (Pope, col. 2, lines 48-52) (emphasis added).

“Fig. 2 is a diagram of a handset 50 of the present invention. . . . The appliance control codes are stored in a memory 66” (Pope, col. 4, lines 17-28) (emphasis added).

Base unit 12 does not generate the appliance control codes. Instead, base unit 12 receives the appliance control codes, which were stored in memory 66 of handset 10, and then translates the appliance control codes into infrared control signals. Thus, Pope does not teach that handset 10 does not store a codeset.

Claims 3-4 and 9 depend from claim 1. In addition to the reasons explained above, dependent claims 3-4 and 9 are allowable for at least the same reason for which claim 1 is allowable. Reversal of the § 103(a) rejection and allowance of claims 3-4 and 9 by the Board is requested.

**C. Dependent claim 2 (3rd ground of rejection)**

Claim 2 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Pope in view of McNair and further in view of Goldstein (USP 5,410,326) (Office Action, p. 7, lines 1-2).

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Claim 2 includes the following limitations of base claim 1, "(a) receiving a keystroke indicator signal from a remote control device; (b) generating a key code within a key code generator device . . ." Claim 2 also recites "wherein said key code signal is transmitted in (d) from said key code generator device to said remote control device".

None of Pope, McNair or Goldstein teaches either (i) generating a key code within a key code generator device or (ii) both a keystroke indicator signal and a key code signal. Moreover, the Examiner seems to admit that Pope and McNair are silent on teaching that the key code generator transmits the key code signal to the remote control device. (Office Action, p. 7, lines 4-10). And Goldstein does not teach this limitation.

None of Pope, McNair or Goldstein teaches transmitting a key code signal from the key code generator device back to the remote control device. The fact that Goldstein may teach sending an IR code or an entire codeset from a cable television converter box to a remote control device to update the remote control device does not teach transmitting a key code signal from a key code generator device back to the remote control device. Indeed, Goldstein does not teach transmitting a key code signal as opposed to a key code or a codeset. The cable television converter box of Goldstein does not teach a key code generator because the cable television converter box of Goldstein receives complete codesets from a remote database or is loaded with complete codesets. (Goldstein, col. 15, lines 20-68; col. 17, lines 62-67). The television converter box of Goldstein is not a key code generator because the GLUE logic 95 in the universal remote control 5, as opposed to the television converter box, generates the IR sequences from the codes. Goldstein states:

"The glue logic 95 will supply the IR sequences from codes, stored in the RAM 90, upon command of the user. . . . These codes describe carrier frequencies, pulse widths and pulse duration to be generated to the glue logic 95 for producing infrared pulses from the infrared diode 97" (Goldstein, col. 13, lines 23-33) (emphasis added).

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Thus, Goldstein does not teach transmitting a key code signal from a key code generator.

In addition, to establish obviousness, there must be "something in the prior art as a whole to suggest the desirability, and thus the obviousness of making the combination." *Interconnect Planning Corp. v. Feil*, 774 F.2d 1132, 1143, 227 USPQ 543, 551 (Fed. Cir. 1985) quoting *Lindemann Maschinenfabrik GMBH v. American Hoist Derrick Co.*, 730 F. 2d 1452, 1462, 221 USPQ 481, 488 (Fed. Cir. 1984). The motivation posited by the Examiner to combine Goldstein and Pope is non-existent. The Examiner states that Goldstein teaches "a cable box transmitting key codes to the remote control in order to update the remote control with new control codes." (Office Action, p. 7, lines 11-13) (emphasis added). But there would be no motivation to update the remote control device of claim 2 with new codesets, as allegedly taught by Goldstein, because claim 2 does not recite that any key code or codeset is ever stored on the remote control device. Claim 2 recites transmitting a key code signal to the remote control device and does not recite transmitting a codeset to the remote control device. The motivation proposed by the Examiner would only result in a combination wherein codesets, or at least key codes, are stored on a remote control device.

The combination of Pope, McNair and Goldstein does not form the basis for a valid rejection of claim 2 under § 103(a) because the combination does not teach (i) generating a key code within a key code generator device, (ii) both a keystroke indicator signal and a key code signal, or (iii) transmitting a key code signal from the key code generator device back to the remote control device. Furthermore, there is no motivation to combine the teachings of Goldstein with the teachings of Pope and McNair in such a way as to obtain all of the limitations of claim 2. Therefore, reversal of the improper § 103(a) rejection of claim 2 by the Board is requested.

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**D. Dependent claims 5 and 10 (4th ground of rejection)**

Claims 5 and 10 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Pope in view of McNair and further in view of Teskey (USP 6,747,568) (Office Action, p. 7, lines 14-16).

Claims 5 and 10 depend directly or indirectly from claim 1 and include the following limitations of claim 1: "(a) receiving a keystroke indicator signal from a remote control device; (b) generating a key code within a key code generator device . . . ." None of Pope, McNair or Teskey teaches (i) generating a key code within a key code generator device or (ii) both a keystroke indicator signal and a key code signal.

In addition, claim 10 recites that "said timing information describes a digital one and a digital zero". The Examiner admits that Pope "is silent on teaching the key code comprises timing information defining the binary number (ones and zeros) in modulated." But the Examiner states that Teskey "teaches the format of the remote control signal having the necessary timing and modulation information (col. line 60-col. 4 line 8)" (Office Action, p. 8, lines 7-10). Teskey does not, however, teach "the necessary timing and modulation information." The passage of Teskey cited by the Examiner does not teach timing information that defines a digital one or a digital zero. In fact, Teskey does not mention a digital one, a digital zero or any type of mark/space representation.

The combination of Pope, McNair and Teskey does not form the basis for a valid rejection of either claim 5 or claim 10 under § 103(a) because the combination does not teach (i) generating a key code within a key code generator device or (ii) both a keystroke indicator signal and a key code signal. And with regard to claim 10, Teskey does not teach timing information that defines a digital one or a digital zero. Therefore, reversal of the improper § 103(a) rejection of claims 5 and 10 by the Board is requested.

**E. Dependent claim 6 (5th ground of rejection)**

Claim 6 is rejected under 35 U.S.C. § 103(a) as being unpatentable over

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Pope in view of McNair and further in view of August (USP 5,671,267) (Office Action, p. 8, lines 16-18).

Claim 6 includes the following limitations of base claim 1, "(a) receiving a keystroke indicator signal from a remote control device; (b) generating a key code within a key code generator device . . . ." None of Pope, McNair or August teaches (i) generating a key code within a key code generator device or (ii) both a keystroke indicator signal and a key code signal.

In addition, claim 6 recites, "(e) pressing a power-on key of said remote control device causing said remote control device to transmit said keystroke indicator signal that is received in (a), wherein said key code signal transmitted in (d) is received onto an electronic consumer device, and wherein said pressing in (e) causes said electronic consumer device to turn on" (emphasis added). The Examiner states that Pope "is not explicit in teaching transmitting a keystroke indicator signal that cause the appliance to turn on. One skill in the art recognizes that a remote control is generally use in turning an appliance on/off and is further evidence by August et al. (col. 8 lines 3-5)" (Office Action, p. 8, line 20 – p. 9, line 2). The Examiner has not presented a *prima facie* case of obviousness because the Examiner has not stated that August teaches a remote control device transmitting a keystroke indicator signal. Indeed, August does not teach a keystroke indicator signal. The passage of August cited by the Examiner teaches handset unit 10 of August using a key code signal, as opposed to a keystroke indicator signal, to turn a television set on and off. Interpreting a "keystroke indicator signal" to be the same as a "key code signal" would be contrary to the tenets of claim differentiation.

The combination of Pope, McNair and August does not teach (i) receiving a keystroke indicator signal from a remote control device, (ii) generating a key code within a key code generator, and (iii) transmitting a key code signal from the key code generator to an electronic consumer device to turn on the electronic consumer device. Nor does the combination teach both a keystroke indicator

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signal and a key code signal. Reversal of the improper § 103(a) rejection of claim 6 by the Board is requested.

**F. Dependent claim 7 (6th ground of rejection)**

Claim 7 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Pope in view of McNair and further in view of Wouters (Office Action, p. 9, lines 8-10).

Claim 7 includes the following limitations of base claim 1, "(a) receiving a keystroke indicator signal from a remote control device; (b) generating a key code within a key code generator device . . ." The combination of Pope, McNair and Wouters teaches neither (i) generating a key code within a key code generator device nor (ii) both a keystroke indicator signal and a key code signal.

In addition, claim 7 recites "wherein said key code signal is received by said remote control device". The Examiner states that "Pope teaches the remote control receiving key code signals (infrared control signal) from a controller (col. 4 lines 52-56)" (Office Action, p. 9, lines 11-12). The Examiner has not presented a *prima facie* case of obviousness because the Examiner has not stated that Pope teaches a remote control device that receives a key code signal from a key code generator device that generated the key code. The passage of Pope cited by the Examiner teaches receiving an infrared signal from a controller, such as a television remote control. The cited passage does not teach receiving a key code signal from a key code generator device. Interpreting a "remote control device" to be the same as a "key code generator device" recited in the same claim would be contrary to the tenets of claim differentiation.

The combination of Pope, McNair and Wouters does not form the basis for a valid rejection of claim 7 under § 103(a) because the combination does not teach any of (i) generating a key code within a key code generator device, (ii) both a keystroke indicator signal and a key code signal, or (iii) receiving a key code signal from the key code generator device back on the remote control.

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device. Therefore, reversal of the improper § 103(a) rejection of claim 7 by the Board is requested.

**G. Dependent claim 8 (7th ground of rejection)**

Claim 8 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Pope in view of McNair and in view of Wouters and further in view of August (Office Action, p. 10, lines 1-3).

The four-way combination of Pope, McNair, Wouters and August does not form the basis for a valid rejection of claim 8 under § 103(a) for the same reasons explained above with relation to claims 1 and 7. The 4-way combination does not teach any of (i) receiving a key code signal from the key code generator device back on the remote control device, (ii) both a keystroke indicator signal and a key code signal, or (iii) generating a key code within a key code generator device.

Furthermore, it is impermissible to “pick and choose” individual elements among the references to recreate the claimed invention because “[o]ne cannot use hindsight reconstruction to pick and choose among isolated disclosures in the prior art to deprecate the claimed invention.” *In re Fritch*, 972 F.2d 1260, 1266, 23 USPQ2d 1780, 1784 (Fed. Cir. 1992) *citing In re Fine*, 837 F.2d 1071, 1075, 5 USPQ2d 1596, 1600 (Fed. Cir. 1988). There is no motivation to combine the teachings of the four-way combination in such a way as to obtain all of the limitations of claim 8. For these reasons, reversal of the improper § 103(a) rejection of claim 8 by the Board is requested.

**H. Dependent claim 18 (8th ground of rejection)**

Claim 18 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Wouters in view of Teskey (Office Action, p. 10, lines 14-15).

The combination of Wouters and Teskey does not form the basis for a valid rejection of claim 18 under § 103(a) for the same reasons explained above



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with relation to claim 13. Neither Wouters nor Teskey discloses a device with a keypad that both transmits an IR signal and receives an RF signal.

Because combination of Wouters and Teskey does not disclose all of the elements of claim 18, reversal of the improper § 103(a) rejection of claim 18 by the Board is requested.

**I. Dependent claims 20-21 (9th ground of rejection)**

Claims 20-21 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Wouters in view of August (Office Action, p. 11, lines 6-7).

Both claim 20 and claim 21 depend from claim 19 and incorporate the limitations of claim 19. The combination of Wouters and August does not form the basis for a valid rejection of either claim 20 or claim 21 under § 103(a) for the same reasons explained above with relation to claim 19. Neither Wouters nor August discloses a codeset that includes two key codes: one key code corresponding to a function of one electronic consumer device, and the other key code corresponding to the same function of another electronic consumer device. The Examiner has not presented a *prima facie* argument of obviousness because the Examiner has not stated that the combination of Wouters and August discloses a codeset with two recited key codes that correspond to the same function on different electronic consumer devices. Neither Wouters nor August teaches the recited codeset with key codes that correspond to the same function on separate electronic consumer devices. August does not mention a codeset.

Because combination of Wouters and August does not disclose a codeset with two key codes that correspond to the same function on two electronic consumer devices, reversal of the improper § 103(a) rejection of claims 20-21 by the Board is requested.

**J. Dependent claim 23 (10th ground of rejection)**

Claim 23 is rejected under 35 U.S.C. § 103(a) as being unpatentable over

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Wouters in view of Pope (Office Action, p. 11, lines 18-19).

Claim 23 depends from claim 22 and incorporates the limitations of claim 22. The combination of Wouters and Pope does not form the basis for a valid rejection of claim 23 under § 103(a) for the same reasons explained above with relation to claim 22. Neither Wouters nor Pope teaches a device with a keypad, a radio frequency receiver and an infrared transmitter.

The RF receiver, IR transmitter and keypad of Wouters are not on the same device. The remote control unit 3 of Wouters does not include an RF receiver. Pope does not teach an RF receiver. And Pope even teaches against including an IR transmitter on the handset. Pope explains:

"One advantage of having the infrared transmitter attached to the base unit 12 is that the base unit 12 can be typically powered by house current. Since no battery is used, the infrared transmitter can draw more power than is used in battery-type systems. For example, if a button is continuously pressed in a battery-type system, in order to conserve power the infrared signal is not continuously sent, but is sent intermittently. The base unit 12 connected to AC power need not be limited in this fashion. Additionally, it is also possible to have the base unit 12 supply a greater amount of power to the infrared transmitter to transmit a greater amount of infrared energy. In this manner, it may be possible for the infrared bulb to not be focused directly towards the appliance" (Pope, col. 3, lines 46-60) (emphasis added).

Thus, Pope teaches away from the limitation of claim 23 because "it suggests that the line of development flow from the reference's disclosure is unlikely to be productive of the result sought by the applicant." *In re Gurley*, 27 F.3d 551, 553, 31 USPQ2d 1130, 1131 (Fed. Cir. 1994).


Because the combination of Wouters and Pope does not disclose all of the limitations of claim 23 as explained above with relation to claim 22, reversal of the improper §103(a) rejection of claim 23 by the Board is requested.

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### VIII. CONCLUSION

The Examiner has not established a prima facie case of anticipation or obviousness. With regard to independent claims 13 and 22, Wouters does not disclose a device with a keypad that both receives a signal within a radio frequency band and transmits a signal within an infrared frequency band. With regard to independent claim 19, Wouters does not disclose a codeset that includes two key codes: one key code corresponding to a function of one electronic consumer device and the other key code corresponding to the same function of another electronic consumer device. With regard to independent claim 25, Wouters does not disclose (i) receiving a keystroke indicator signal from a remote control device, (ii) transmitting a key code signal to the remote control device, and then (iii) transmitting the key code signal from the remote control device to an electronic consumer device. With regard to independent claim 1, the combination of Pope and McNair does not teach (i) generating a key code within a key code generator device, (ii) a key stroke indicator signal as well as a key code signal, or (iii) modulating a key code. The Board is requested to reverse the §102 and §103 rejections of claims 1-10, 13-16, 18-26.

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By   
Darien K. Wallace

Date of Deposit: March 24, 2007

Respectfully submitted,



Darien K. Wallace  
Attorney for Appellant  
Reg. No. 53,736  
Customer No. 47,713

## IX. CLAIMS APPENDIX

1. (original): A method comprising:
  - (a) receiving a keystroke indicator signal from a remote control device;
  - (b) generating a key code within a key code generator device;
  - (c) modulating said key code onto a carrier signal, thereby generating a key code signal; and
  - (d) transmitting said key code signal from said key code generator device.
  
2. (original): The method of Claim 1, wherein said key code signal is transmitted in (d) from said key code generator device to said remote control device.
  
3. (original): The method of Claim 1, wherein said key code signal is transmitted in (d) from said key code generator device to an electronic consumer device.
  
4. (original): The method of Claim 1, wherein said key code consists of a binary number.
  
5. (original): The method of Claim 1, wherein said key code comprises a binary number and timing information, and wherein said timing information defines how said binary number is modulated in (c) onto said carrier signal.
  
6. (original): The method of Claim 1, further comprising:
  - (e) pressing a power-on key of said remote control device causing said remote control device to transmit said keystroke indicator signal that is received in (a), wherein said key code signal transmitted in (d) is received onto an electronic consumer device, and wherein said pressing in (e) causes said electronic consumer device to turn on.

7. (original): The method of Claim 1, wherein said carrier signal is in a radio frequency band, wherein said key code signal is received by said remote control device, and wherein said method further comprises:

(e) modulating said key code onto a second carrier signal, thereby generating a second key code signal, said modulating being performed on said remote control device wherein said second carrier signal is in an infrared frequency band; and

(f) transmitting said second key code signal from said remote control device to an electronic consumer device.

8. (original): The method of Claim 7, further comprising:

(g) pressing a power-on key of said remote control device causing said remote control device to transmit said keystroke indicator signal that is received in (a), wherein the pressing in (g) causes said electronic consumer device to turn on.

9. (original): The method of Claim 1, wherein said key code generated in (b) is part of a codeset, and wherein said remote control device does not store said codeset.

10. (original): The method of Claim 9, wherein said codeset comprises timing information and a plurality of key codes, and wherein said timing information describes a digital one and a digital zero.

11. (previously presented): A method comprising:

(a) receiving a keystroke indicator signal from a remote control device;

(b) generating a key code within a key code generator device;

(c) modulating said key code onto a carrier signal, thereby generating a key code signal; and

(d) transmitting said key code signal from said key code generator device, wherein a codeset comprises a plurality of key codes, each one of said plurality

of key codes corresponding to a function of an electronic consumer device, and wherein no more than a single one of said plurality of key codes is present on said remote control device at any given time.

12. (original): The method of Claim 11, wherein said function of said electronic consumer device is taken from the group consisting of: power on, power off, channel advance, channel back, volume up, volume down, cursor up, cursor down, cursor right, cursor left, select, play, record, stop, forward, back and pause.

13. (previously presented): A remote control device comprising:

a receiver that receives a first key code signal, wherein said first key code signal is generated by modulating a key code onto a first carrier signal, said first carrier signal falling within a radio frequency band;

a transmitter that transmits a second key code signal, wherein said second key code signal is generated by modulating said key code onto a second carrier signal, said second carrier signal falling within an infrared frequency band; and

a keypad that includes a key that corresponds to said key code, wherein said key code corresponds to a function of an electronic consumer device.

14. (original): The device of Claim 13, wherein said key code corresponds to a second function of a second electronic consumer device, as well as to said function of said electronic consumer device.

15. (original): The device of Claim 14, wherein said transmitter transmits a third key code signal, and wherein said third key code signal is generated by modulating said key code onto a third carrier signal.

16. (original): The device of Claim 14, wherein said key code comprises a first binary number and a second binary number, said first binary number

corresponding to said function, and said second binary number corresponding to said second function.

17. (previously presented): A device comprising:

a receiver that receives a first key code signal, wherein said first key code signal is generated by modulating a key code onto a first carrier signal, said first carrier signal falling within a radio frequency band;

a transmitter that transmits a second key code signal, wherein said second key code signal is generated by modulating said key code onto a second carrier signal, said second carrier signal falling within an infrared frequency band; and

a keypad that includes a key that corresponds to said key code, wherein said key code corresponds to a function of an electronic consumer device, wherein said keypad includes a second key that corresponds to a second key code, wherein a third key code signal is generated by modulating said second key code onto a third carrier signal, wherein said third key code signal is received by said receiver, and wherein both said first key code and said second key code are not both stored in said device at the same time.

18. (original): The device of Claim 13, wherein a codeset comprises timing information and a plurality of key codes, wherein each of said plurality of key codes corresponds to a different function of said electronic consumer device, wherein said key code is a binary number, and wherein said timing information defines how said binary number is modulated onto said first carrier signal.

19. (previously presented): A system comprising:

a key code generator device that generates a first key code and a second key code, wherein a codeset is stored on said key code generator device, said codeset including said first key code and said second key code, wherein said first key code corresponds to a selected function of a first electronic consumer

device, and wherein said second key code corresponds to said selected function of a second electronic consumer device; and

means for relaying said first key code and said second key code from said key code generator device through a remote control device to said first electronic consumer device and to said second electronic consumer device without simultaneously storing both said first key code and said second key code on said remote control device.

20. (original): The system of Claim 19, wherein said selected function is taken from the group consisting of: power on, power off, channel advance, channel back, volume up, volume down, cursor up, cursor down, cursor right, cursor left, select, play, record, stop, forward, back and pause.

21. (original): The system of Claim 19, wherein said selected function is power on, and wherein said system automatically determines when said first electronic consumer device powers on.

22. (previously presented): A remote control device, comprising:

a keypad;

an RF receiver;

an IR transmitter; and

means for receiving a key code from said RF receiver and for sending said key code to said IR transmitter such that said key code is modulated onto an IR carrier signal, said IR carrier signal with said key code modulated thereon being transmitted from said remote control device by said IR transmitter.

23. (original): The remote control device of Claim 22, wherein said key code is not stored on said remote control device immediately prior to said means receiving the key code.



24. (original): The remote control device of Claim 22, wherein said means is a microcontroller.

25. (previously presented): A method comprising:

(a) receiving a keystroke indicator signal from a remote control device;

(b) using said keystroke indicator signal to generate a key code, wherein a key code generator device generates said key code;

(c) modulating said key code onto a carrier signal and thereby generating a key code signal; and

(d) transmitting said key code signal from said key code generator device to said remote control device, wherein said remote control device transmits said key code signal to an electronic consumer device.

26. (previously presented): The method of Claim 25, wherein said key code generated in (b) is part of a codeset, and wherein said codeset is not stored on said remote control device.

#### **X. EVIDENCE APPENDIX**

No evidence has been submitted pursuant to 37 C.F.R. §§ 1.130, 1.131 or 1.132. No affidavit or declaration has been submitted under § 1.130 to disqualify a commonly owned patent or a published application as prior art. No affidavit or declaration of a prior invention has been submitted under § 1.131. No affidavit or declaration traversing rejections or objections has been submitted under § 1.132. No such evidence was entered by the Examiner and relied upon by Appellants in this appeal.

In the rejections that are to be reviewed in this appeal, the Examiner has not relied upon any non-patent documents.

#### **XI. RELATED PROCEEDINGS APPENDIX**

No decision has yet been rendered by a court or the Board in this or any related proceeding.



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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/737,029	12/16/2003	Daniel SauFu Mui	ZIL-568	4506
47713	7590	05/15/2007	EXAMINER	
IMPERIUM PATENT WORKS P.O. BOX 587 SUNOL, CA 94586			ART UNIT	PAPER NUMBER

DATE MAILED: 05/15/2007

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Notification of Non-Compliant Appeal Brief (37 CFR 41.37)</b>	<b>Application No.</b> 10/737,029	<b>Applicant(s)</b> MUI, DANIEL SAUFU	
	<b>Examiner</b> BROWN, VERNAL	<b>Art Unit</b> 2612	

**--The MAILING DATE of this communication appears on the cover sheet with the correspondence address--**

The Appeal Brief filed on 26 March 2007 is defective for failure to comply with one or more provisions of 37 CFR 41.37.

To avoid dismissal of the appeal, applicant must file an amended brief or other appropriate correction (see MPEP 1205.03) within **ONE MONTH or THIRTY DAYS** from the mailing date of this Notification, whichever is longer. **EXTENSIONS OF THIS TIME PERIOD MAY BE GRANTED UNDER 37 CFR 1.136.**

1.  The brief does not contain the items required under 37 CFR 41.37(c), or the items are not under the proper heading or in the proper order.
2.  The brief does not contain a statement of the status of all claims, (e.g., rejected, allowed, withdrawn, objected to, canceled), or does not identify the appealed claims (37 CFR 41.37(c)(1)(iii)).
3.  At least one amendment has been filed subsequent to the final rejection, and the brief does not contain a statement of the status of each such amendment (37 CFR 41.37(c)(1)(iv)).
4.  (a) The brief does not contain a concise explanation of the subject matter defined in each of the independent claims involved in the appeal, referring to the specification by page and line number and to the drawings, if any, by reference characters; and/or (b) the brief fails to: (1) identify, for each independent claim involved in the appeal and for each dependent claim argued separately, every means plus function and step plus function under 35 U.S.C. 112, sixth paragraph, and/or (2) set forth the structure, material, or acts described in the specification as corresponding to each claimed function with reference to the specification by page and line number, and to the drawings, if any, by reference characters (37 CFR 41.37(c)(1)(v)).
5.  The brief does not contain a concise statement of each ground of rejection presented for review (37 CFR 41.37(c)(1)(vi)).
6.  The brief does not present an argument under a separate heading for each ground of rejection on appeal (37 CFR 41.37(c)(1)(vii)).
7.  The brief does not contain a correct copy of the appealed claims as an appendix thereto (37 CFR 41.37(c)(1)(viii)).
8.  The brief does not contain copies of the evidence submitted under 37 CFR 1.130, 1.131, or 1.132 or of any other evidence entered by the examiner **and relied upon by appellant in the appeal**, along with a statement setting forth where in the record that evidence was entered by the examiner, as an appendix thereto (37 CFR 41.37(c)(1)(ix)).
9.  The brief does not contain copies of the decisions rendered by a court or the Board in the proceeding identified in the Related Appeals and Interferences section of the brief as an appendix thereto (37 CFR 41.37(c)(1)(x)).
10.  Other (including any explanation in support of the above items):

Item 4. The claimed invention is not mapped to independent claim 11, which shall refer to the specification by page and line number and to the drawings, if any.

  
 LORENDA HOOD  
 PATENT APPEAL CENTER SPECIALIST

AF  
JFW



AMENDED APPEAL BRIEF TRANSMITTAL LETTER

June 11, 2007

MAIL STOP APPEAL BRIEF - PATENTS  
COMMISSIONER FOR PATENTS  
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ALEXANDRIA, VA 22313-1450

Re: Applicant: Daniel SauFu Mui  
Assignee: ZiLOG, Inc.  
Title: "Relaying Key Code Signals Through a Remote Control Device"  
Serial No.: 10/737,029 Filed: December 16, 2003  
Examiner: Vernal U. Brown Art Unit: 2612  
Atty. Docket No.: ZIL-568

Dear Sir:

Transmitted herewith are the following documents:

- (1) amended appeal brief (38 pages);
- (2) return postcard; and
- (3) this transmittal sheet.

- No additional Fee is required.
- The fee has been calculated as shown below:

CLAIMS AS AMENDED						
	REMAINING AFTER AMENDMENT		HIGHEST NO. PREVIOUSLY PAID FOR	EXTRA CLAIMS PRESENT	RATE	ADDITIONAL FEE
TOTAL CLAIMS	26	minus	26	0	\$50	\$0.00
INDEP. CLAIMS	7	minus	7	0	\$200	\$0.00
Total Additional Claim Fee						\$0.00
Fee for Appeal Brief [§41.20(b)(2)] (PREVIOUSLY PAID)						\$0.00
Fee for Request for Oral Hearing [§41.20(b)(3)]						\$0.00
Fee for Extension of Time ( __ month) [§1.17(a)(1)]						\$0.00
TOTAL						\$0.00
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By Darien K. Wallace  
Darien K. Wallace  
Date of Deposit: June 11, 2007

Respectfully submitted,

*Darien K. Wallace*

Darien K. Wallace  
Attorney for Applicants  
Reg. No. 53,736  
Customer No. 47,713



**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

Appellant: Daniel SauFu Mui  
Assignee: ZiLOG, Inc.  
Title: "Relaying Key Code Signals Through a Remote Control Device"  
Appl. No.: 10/737,029 Filing Date: December 16, 2003  
Examiner: Vernal U. Brown Art Unit: 2612  
Docket No.: ZIL-568

June 11, 2007

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**APPEAL BRIEF**

This amended Appeal Brief is filed pursuant to 37 CFR § 41.37 in support of the appeal noticed on February 19, 2007.

**I. REAL PARTY IN INTEREST**

The real party in interest is the assignee, ZiLOG, Inc., as named in the caption above.

**II. RELATED APPEALS AND INTERFERENCES**

Based on information and belief, there are no appeals or interferences that could directly affect or be directly affected by or have a bearing on the decision by the Board of Patent Appeals and Interferences (the "Board") in the pending appeal.

**III. STATUS OF CLAIMS**

The application at issue, filed on December 16, 2003, included 24 claims. In an amendment dated July 28, 2006, claims 25-26 were added. Claims 1-26 are subject to this Appeal.



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to an electronic consumer device. The key code is not stored in the remote control device in a permanent manner, but rather is relayed through the remote control device. System 10 includes a remote control device 11, a key code generator device 12, a first electronic consumer device 13 (a VCR) and a second electronic consumer device 14 (a TV).

Upon receiving a keystroke indicator signal from remote control 11, key code generator 12 identifies the particular codeset usable to communicate with the selected electronic consumer device. The keystroke indicator signal contains an indication of a key on the remote control that was pressed, which corresponds to a function of the selected electronic consumer device. Using the identified codeset and the indication of the pressed key, key code generator 12 generates a key code and modulates that key code onto a radio frequency carrier signal, thereby generating a first key code signal 19. Remote control 11 receives first key code signal 19 from key code generator 12 and modulates the key code onto an infrared frequency carrier signal, thereby generating a second key code signal 22. Remote control 11 relays the key code to the selected electronic consumer device in second key code signal 22. The key code causes the selected electronic consumer device to perform the desired function.

**A. Independent claim 1**

Independent claim 1 is directed to a method of generating a key code within a key code generator device, as described in steps 101 through 104 in figure 2 (replicated below). As shown in figures 1 and 2, claim 1 recites a method of (a) receiving keystroke indicator signal 16 from remote control device 11 (Specification, p. 6, lines 26-28); (b) generating a key code within key code generator device 12 (Specification, p. 8, lines 14-16); (c) modulating the key code onto a carrier signal thereby generating first key code signal 19 (Specification, p. 8, lines 26-29); and (d) transmitting key code signal 19 from key code generator device 12 (Specification, p. 11, lines 4-5).



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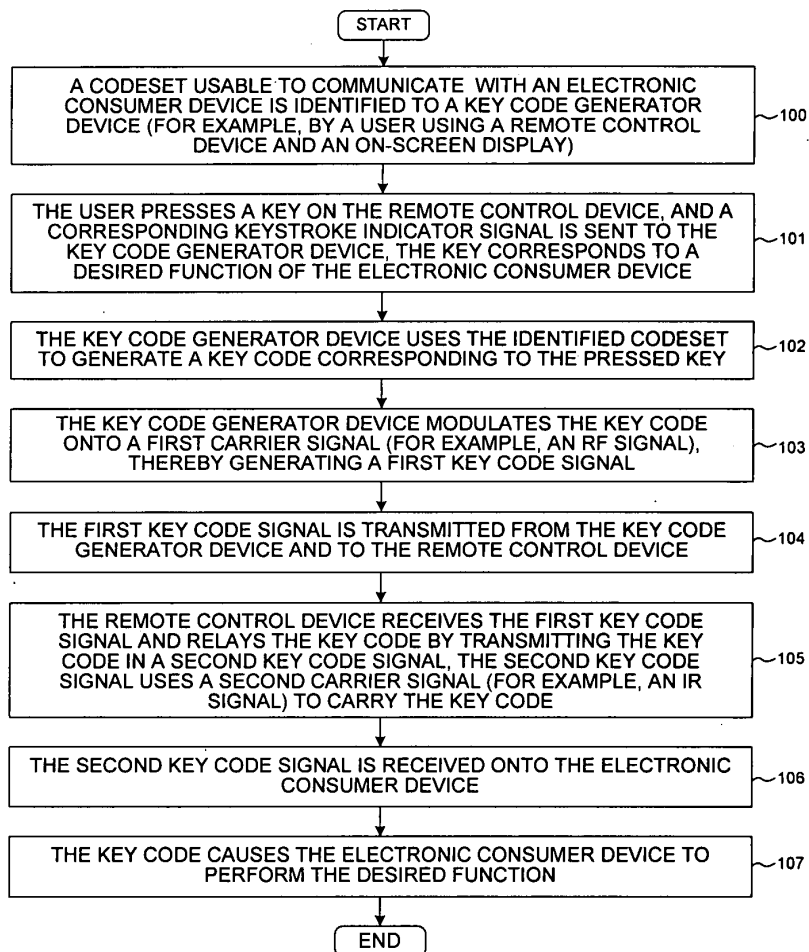


FIG. 2

Dependent claim 2 is directed to the method of claim 1, but includes the limitation that first key code signal 19 is transmitted from key code generator device 12 to remote control device 11 (Specification, p. 11, lines 6-7).

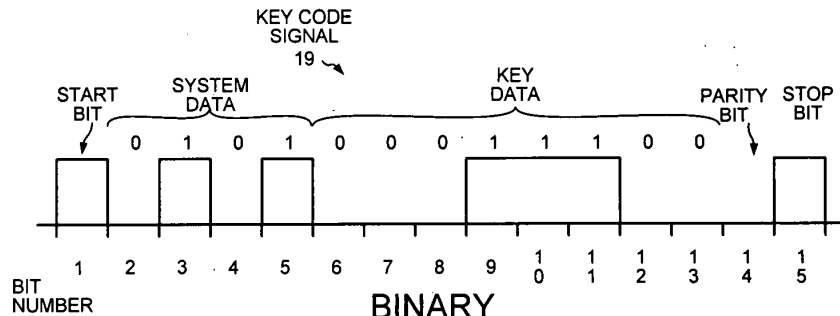
Dependent claim 3 includes a limitation that first key code signal 19 is transmitted from key code generator 12 to the selected electronic consumer device (Specification, p. 12, lines 13-15). Dependent claim 4 includes the limitation that the key code consists of a binary number (Specification, p. 8, lines 18-20) as depicted in figure 3 (replicated below).

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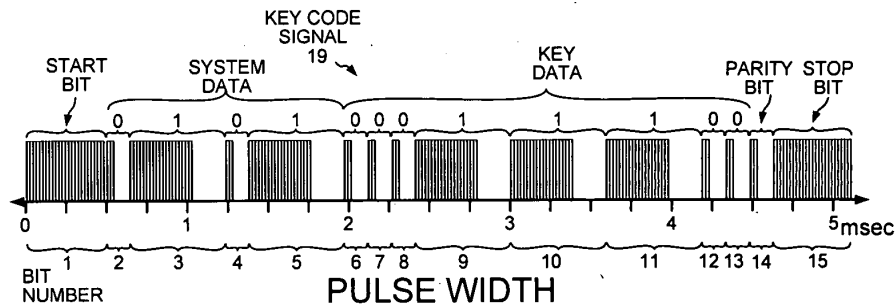
0 1 0 1 0 0 0 1 1 1 0 0  
 SYSTEM CODE KEY DATA

KEY CODE  
 FIG. 3

Dependent claim 5 includes the limitation that the key code comprises a binary number and timing information. The timing information defines how said binary number is modulated onto the carrier signal to generate first key code signal 19 (Specification, p. 9, lines 9-11) as depicted in figures 4 and 5 (replicated below).



BINARY  
 TRANSMISSION  
 FIG. 4



PULSE WIDTH  
 MODULATION  
 FIG. 5

Dependent claim 6 includes the limitation that keystroke indicator signal 16 corresponds to a power-on function, and first key code signal 19 is received

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onto an electronic consumer device and causes the electronic consumer device to be powered on. Dependent claim 7 recites that first key code signal 19 is received by remote control device 11 and includes the further steps of (e) modulating the key code onto a second carrier signal, thereby generating second key code signal 22 (Specification, p. 11, lines 8-11) and (f) transmitting second key code signal 22 to the selected electronic consumer device (Specification, p. 12, lines 1-3). Claim 7 also includes the limitation that the first carrier signal is in a radio frequency band and the second carrier signal is in an infrared frequency band.

Dependent claim 8 is directed to the method of claim 7, but includes a further limitation that keystroke indicator signal 16 corresponds to a power-on function, and second key code signal 22 causes the selected electronic consumer device to be powered on (Specification, p. 12, lines 4-7).

Dependent claim 9 includes the limitation that the key code is part of a codeset and that the codeset is not stored in remote control device 11 (Specification, p. 19, lines 11-13). Dependent claim 10 is directed to the method of claim 9, but includes a limitation that the codeset comprises timing information and a plurality of key codes. Furthermore, the timing information describes a digital one and a digital zero, as described at page 11, lines 26-28, of the Specification.

#### **B. Independent claim 11**

Independent claim 11 is directed to a method of relaying key codes through a remote control device to an electronic consumer device, wherein no more than a single key code is present on the remote control device at any given time. Figure 1 shows that a keystroke indicator signal 16 is received from a remote control device 11. (Specification, p. 6, lines 26-28). A key code generator device 12 then generates a key code. (Specification, p. 8, lines 14-16). Each key code corresponds to a function of an electronic consumer device 13. The key code is then modulated onto a carrier signal to generate a key code signal 19.

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(Specification, p. 8, lines 26-29). Examples of key code signal 19 are also shown in figures 4 and 5. Key code signal 19 is then transmitted from key code generator device 12 to remote control device 11. (Specification, p. 11, lines 4-5). No more than a single key code is present on remote control device 11 at any given time.

**C. Independent claim 13**

Independent claim 13 relates to remote control device 11 shown in figure 1. Remote control device 11 comprises: an RF receiver 21 that receives a first key code signal 19 (Specification, p. 11, lines 5-6); an IR transmitter 23 that transmits a second key code signal 22 (Specification, p. 11, lines 17-21); and a keypad that includes a key that corresponds to a key code. The key code corresponds to a function of an electronic consumer device. First key code signal 19 is generated by modulating the key code onto a first carrier signal having a radio frequency band. Second key code signal 22 is generated by modulating the key code onto a second carrier signal having an infrared frequency band.

Dependent claim 14 is directed to the remote control device of claim 13, but includes the limitation that the key code corresponds to the function and to a second function. The second function corresponds to a second electronic consumer device. Dependent claim 16 is directed to the remote control device of claim 14, but includes the limitation that the key code comprises a first binary number and a second binary number. The first binary number corresponds to the function, and the second binary number corresponds to the second function.

Dependent claim 18 is directed to the remote control device of claim 13, but includes the limitation that a codeset comprises timing information and a plurality of key codes. Each key code is a binary number and corresponds to a different function of the electronic consumer device. Furthermore, the timing information defines how the binary number is modulated onto the first carrier signal (Specification, p. 11, lines 26-28).

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**D. Independent Claim 19**

Claim 19 is directed to a key code generator device and a means for relaying key codes from the key code generator device through a remote control device. The key code generator device generates a first key code and a second key code. Claim 19 recites a “means for relaying said first key code and said second key code from said key code generator device through a remote control device.” More specifically, the first key code corresponds to a function of a first electronic consumer device, and the second key code corresponds to the same function of a second electronic consumer device (Specification, p. 15, lines 25-26). As illustrated in Figure 1, the corresponding structure includes remote control device 11.

**E. Independent Claim 22**

Claim 22 is directed to remote control device 11 comprising a key pad, RF receiver 21, IR transmitter 23, and a means for receiving a key code from RF receiver 21 and for sending the key code to IR transmitter 23. Claim 24 recites that the corresponding structure includes a microcontroller integrated circuit (Specification, p. 13, line 27).

**F. Independent claim 25**

Independent claim 25 is directed to a method for relaying a key code from key code generator 12 to an electronic consumer device through remote control device 11, and includes the steps 101 through 105 depicted in figure 2. Claim 25 recites a method of (a) receiving keystroke indicator signal 16 from remote control device 11 (Specification, p. 6, lines 26-28); (b) using keystroke indicator signal 16 to generate a key code within key code generator device 12 (Specification, p. 8, lines 14-16); (c) modulating the key code onto a carrier signal thereby generating first key code signal 19 (Specification, p. 8, lines 26-29); and (d) transmitting a key code signal from key code generator device 12 to remote control device 11 (Specification, p. 11, lines 4-7) and transmitting the key code

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signal to an electronic consumer device from remote control device 11.

Dependent claim 26 is directed to the method of claim 25 but includes the limitation that the key code is part of a codeset, and the codeset is not stored in remote control device 11 (Specification, p. 19, lines 11-13).

## **VI. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL**

The following are grounds of rejection to be reviewed on appeal:

1) Claims 13-16, 19, 22, and 24-26 stand rejected under 35 USC §102(e), as being anticipated by Wouters et al. (US Patent 6,915,109).

2) Claims 1, 3-4, 9 stand rejected under 35 USC §103(a) as being unpatentable over Pope (US Patent 5,963,624) in view of McNair et al. (US Patent 5,595,342).

3) Claim 2 stands rejected under 35 USC §103(a) as being unpatentable over Pope in view of McNair and further in view of Goldstein (US Patent 5,410,326).

4) Claim 5 and 10 stand rejected under 35 USC §103(a) as being unpatentable over Pope in view of McNair and further in view of Teskey (US Patent 6,747,568).

5) Claim 6 stands rejected under 35 USC §103(a) as being unpatentable over Pope in view of McNair and further in view of August et al. (US Patent 5,671,267).

6) Claim 7 stands rejected under 35 USC §103(a) as being unpatentable over Pope in view of McNair and further in view of Wouters.

7) Claim 8 stands rejected under 35 USC §103(a) as being unpatentable over Pope in view of McNair in view of Wouters and further in view of August.

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8) Claim 18 stands rejected under 35 USC §103(a) as being unpatentable over Wouters in view of Teskey.

9) Claim 20-21 stand rejected under 35 USC §103(a) as being unpatentable over Wouters in view of August.

10) Claim 23 stands rejected under 35 USC §103(a) as being unpatentable over Wouters in view of Pope.

## VII. ARGUMENT

### A. Claims 13-16, 19, 22, and 24-26 (1st ground of rejection)

Claims 13-16, 19, 22 and 24-26 are rejected under 35 U.S.C. § 102(e) as being anticipated by Wouters et al. US Patent 6,915,109. (Office Action, p. 4, lines 1-2). "A rejection for anticipation under section 102 requires that each and every limitation of the claimed invention be disclosed in a single prior art reference." *In re Paulsen*, 30 F.3d 1475, 1478-79, 31 USPQ2d 1671, 1673 (Fed. Cir. 1994) citing *In re Spada*, 911 F.2d 705, 708, 15 USPQ2d 1655, 1657 (Fed. Cir. 1990).

#### 1. Independent claims 13 and 22

Claim 13 recites, "A remote control device comprising: a receiver that receives a first key code signal . . . within a radio frequency band; a transmitter that transmits a second key code signal . . . within an infrared frequency band; and a keypad . . ." (emphasis added). Claim 22 recites, "A remote control device, comprising: a keypad; an RF receiver; an IR transmitter ..." (emphasis added).

Wouters does not form the basis for a valid rejection under § 102(e) because Wouters does not disclose all of the limitations of either claim 13 or claim 22. Although Wouters discloses a system of devices including an IR remote control unit 3 in room 1 and an RF receiver 13 and an IR transmitter 14 in room 2, Wouters does not disclose a device with a keypad that both receives a

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signal within a radio frequency band and transmits a signal within an infrared frequency band.

The Examiner has not alleged that Wouters discloses a single device with a keypad that both receives an RF signal and transmits an IR signal. Instead, the Examiner states, "Wouters et al. teaches a remote control which includes the system of devices 1 and 2 (figure 1) comprising a receiver receiving a RF modulated remote control signal (col. 4 lines 25-28) and a transmitter transmitting an infrared modulated signal generated from the received RF signal (col. 4 lines 28-33)." (Office Action, p. 4, lines 3-6). The Examiner's statement that Wouters discloses a system of devices 1 and 2 that comprise an RF receiver and an IR transmitter is insufficient to allege a *prima facie* case of anticipation of claims that recite a device comprising a keypad, a receiver and a transmitter. In fact, the only keypad disclosed in Wouters is on remote control unit 3, which is located in a separate room (room 1) from RF receiver 13 and IR transmitter 14 (room 2). The remote control unit 3 described at column 4, lines 48-57, includes IR transmitter 4 and RF transmitter 8, but does not include an RF receiver. Thus, the Examiner does not state that Wouters discloses a single device with a keypad, an RF receiver and an IR transmitter. Nor does Wouters disclose a device with all three of these elements.

In the Advisory Action, the Examiner states, "Regarding applicant's argument regarding the system of devices as disclosed by Wouters, it is the examiner's position that the remote control device as claimed, is not limited to a single housing" (Advisory Action, p. 2, lines 2-3) (emphasis added). The Examiner then again cites column 4, lines 25-28, column 4, lines 28-33 and column 4, lines 44-58, of Wouters as disclosing all of the elements of claims 13 and 22. The Examiner is improperly interpreting the claim term "remote control device" contrary to how that term is used in the claims and in the specification. Both claims 13 and 22 recite a "device" and not a "system". As the term "remote control device" is depicted in the drawings and used in the specification, such a



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“remote control device” does not describe a “system” with an RF receiver in one room of a house and an RF transmitter in another room of the house.

Finally, this statement that disavows any claim scope to a “remote control device” with an RF receiver in one room and an RF transmitter in another room is dispositive to claim interpretation. By virtue of this disclaimer of claim scope, the term a “remote control device” is to be interpreted as excluding a “system” with multiple components in separate rooms. *See Invitrogen Corporation v. Biocrest Manufacturing*, 327 F.3d 1364, 1368, 66 USPQ2d 1631, 1633 (Fed. Cir. 2003); *Inverness Med. Switz. GmbH v. Princeton Biomeditech Corp.*, 309 F.3d, 1365, 1372, 64 USPQ2d 1926, 1932 (Fed. Cir. 2002); *Rheox*, 276 F.3d at 1327, 61 USPQ2d at 1374; *CVI/Beta Ventures, Inc. v. Tura LP*, 112 F.3d 1146, 1159, 42 USPQ2d 1577, 1583 (Fed. Cir. 1997); *Southwall Techs. Corp. v. Cardinal IG Co.*, 54 F.3d 1570, 1576, 34 USPQ2d 1673, 1676 (Fed. Cir.), *cert. denied*, 116 S.Ct. 515 (1995).

Because Wouters does not disclose all of the elements of either claim 13 or claim 22, reversal of the improper §102(e) rejection of claims 13 and 22 by the Board is requested.

## **2. Dependent claims 14-16**

Claim 14 recites “said key code corresponds to a second function of a second electronic consumer device, as well as to said function of said electronic consumer device” (emphasis added). Wouters does not disclose one key code that corresponds to two separate functions of two different electronic consumer devices.

The Examiner has not stated that Wouters discloses a single key code that corresponds to two separate functions. Instead, the Examiner states, “A key code corresponding to a second and third key code is therefore transmitted based on the selected key.” (Office Action, p. 4, lines 10-11) (emphasis added). In addition, the Examiner states that “Wouters teaches a key code generator (3) for generating key codes for controlling different function on various electrical

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appliances (col. 1 lines 24-26, col. 3 lines 21-35). The key codes for controlling the different devices inherently include a first and second key code." (Office Action, p. 2, lines 17-20) (emphasis added). However, claim 14 does not recite a first and second key code. Instead, claim 14 recites "said key code", "said function" and "a second function". The Examiner has not stated that Wouters discloses one key code that corresponds both to a function of an electronic consumer device as well as to a second function of a second electronic consumer device.

Claim 16 recites "said key code comprises a first binary number and a second binary number, said first binary number corresponding to said function, and said second binary number corresponding to said second function" (emphasis added). Wouters does not disclose a single key code that comprises two binary numbers, one corresponding to the function of one electronic consumer device, and the other corresponding to a second function of a second electronic consumer device.

The Examiner has not presented a *prima facie* argument of anticipation of claim 16 because the Examiner has not stated that Wouters discloses a key code comprising both (i) a first binary number that corresponds to a function of an electronic consumer device as well as (ii) a second binary number that corresponds to a second function of a second electronic consumer device. Instead, the Examiner simply states, "The data from the memory is inherently store as binary data. The key code therefore comprises binary data." (Office Action, p. 4, lines 13-14). The Examiner does not mention a first binary number of a key code corresponding to a first function, as well as a second binary number of the same key code corresponding to a second function.

Claims 14-16 depend directly or indirectly from claim 13. In addition to the reasons explained above, dependent claims 14-16 are allowable for at least the same reasons for which claim 13 is allowable. Reversal of the improper §102(e) rejection of claims 14-16 by the Board is requested.

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### **3. Dependent claim 24**

Claim 24 recites that the means of claim 22 is a microcontroller. The means of claim 22 is a “means for receiving a key code from said RF receiver”. The Examiner states that Wouters discloses “a microcontroller in the form of a microprocessor for receiving the key code (col. 4 lines 52-55)” (Office Action, p. 5, lines 1-2). The passage of Wouters cited by the Examiner, however, does not disclose a microprocessor for receiving a key code from an RF receiver.

The remote control unit disclosed in the passage cited by the Examiner does not include an RF receiver. Therefore, the central processing unit (CPU) that is inside remote control unit 3 of Wouters does not receive a key code from any RF receiver. Instead, Wouters discloses that the CPU determines which code needs transmitting based on which key is tapped by the user. (No keypad is included in the devices in room 2 of Wouters.) Wouters explains:

“In this case the user taps a key, the CPU (Central processing unit) inside the remote control determines which code (corresponding to the tapped key) needs transmitting (by IR or RF) and fetches the required data from its memory which comprises a data base or other means in which tapped codes are linked to data to be transmitted” (Wouters, col. 4, lines 57-62) (emphasis added).

Thus, Wouters does not disclose a microcontroller that receives a key code from an RF receiver.

Claim 24 depends from claim 22. In addition to the reasons explained above, dependent claim 24 is allowable for at least the same reasons for which claim 22 is allowable. Reversal of the § 102(e) rejection and allowance of claim 24 are requested.

### **4. Independent claim 19**

Claim 19 recites, “said codeset including said first key code and said second key code, wherein said first key code corresponds to a selected function of a first electronic consumer device, and wherein said second key code

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corresponds to said selected function of a second electronic consumer device" (emphasis added). Wouters does not form the basis for a valid rejection under §102(e) because Wouters does not disclose a codeset that includes two key codes: one key code corresponding to a function of one electronic consumer device, and the other key code corresponding to the same function ("said selected function") of another electronic consumer device.

The Examiner has not presented a *prima facie* argument of anticipation of claim 19 because the Examiner has not stated that Wouters discloses the two recited key codes that correspond to the same function on different electronic consumer devices. Nor has the Examiner stated that Wouters discloses that those two key codes are included in a codeset stored on a key code generator device. In fact, Wouters does not mention key codes that correspond to the same function on separate electronic consumer devices.

Because Wouters does not disclose all of the elements of claim 19, reversal of the improper §102(e) rejection of claim 19 by the Board is requested.

#### **5. Independent claim 25**

Claim 25 recites, "receiving a keystroke indicator signal from a remote control device; . . . transmitting said key code signal from said key code generator device to said remote control device, wherein said remote control device transmits said key code signal to an electronic consumer device." (emphasis added). Wouters does not form the basis for a valid rejection of claim 25 under § 102(e) because Wouters does not disclose (i) receiving a keystroke indicator signal from a remote control device, (ii) transmitting a key code signal to the remote control device, and then (iii) transmitting the key code signal from the remote control device to an electronic consumer device.

The Examiner has not stated a *prima facie* case of anticipation because that Examiner has not alleged that Wouters discloses (i) receiving a signal from a remote control device, (ii) transmitting a second signal to the remote control

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device, and (iii) transmitting a third signal from the remote control device.

Instead, the Examiner states that Wouters discloses:

“receiving a key stroke indicator signal (5) from a remote control (3) and the key code indicator signal is used by key code generator 8 to generate a key code (col. 3 lines 21-30); modulating the key code signal unto a carrier and transmitting the key code to the remote control (12) (col. 4 lines 28-33) and the remote control transmit the key code to the electronic device (col. 3 lines 31-34). Wouters et al. teaches the key code receive by the remote control is demodulated, decoded and transmitted to the appliance (col. 4 lines 25-37).” (Office Action, p. 5, lines 3-9) (emphasis added)

The Examiner argues that the recited “keystroke indicator signal” is disclosed by infrared signal 5 of Wouters. Moreover, the Examiner argues that the recited “remote control device” is infrared remote control unit 3 of Wouters. But then the Examiner improperly argues that the item labeled 12 in room 2 of Wouters is also the recited remote control device. This is improper. The Examiner has engaged in improper claim construction by arguing (i) that the recited remote control device from which a keystroke indicator signal is received is disclosed by item 3 in room 1 of Wouters for purposes of one claim limitation, and (ii) that the same recited remote control device is disclosed by item 12 in room 2 of Wouters for purposes of another limitation of the same claim. Alternatively, the Examiner is arguing that the recited remote control device is in two rooms of Wouters at the same time. Therefore, Wouters does not disclose the recited remote control device from which a first signal is received and to which a second signal is transmitted.

An additional reason why the Examiner’s argument fails is that Wouters does not disclose that item 12 in figure 1 is a remote control device. The reference numeral 12 does not appear at all in the specification of Wouters.

Because Wouters does not disclose all of the elements of claim 25, reversal of the improper §102(e) rejection of claim 25 by the Board is requested.

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**6. Dependent claim 26**

Claim 26 recites, "wherein said codeset is not stored on said remote control device". The Examiner states that infrared remote control unit 3 of Wouters discloses the recited "remote control device". (Office Action, p. 5, line 4) The Examiner also states, "The key code is therefore not stored in the memory of the remote control" (Office Action, p. 5, lines 9-10). First, the Examiner has not stated a *prima facie* case of anticipation of claim 26 because claim 26 does not recite "wherein the key code is not stored on said remote control device". Second, Wouters does not disclose that a codeset is not stored on infrared remote control unit 3. In fact, Wouters suggests the contrary:

"In this system a remote control unit is used which comprises both an IR transmitter and an antenna for transmission of RF signals. In this case the user taps a key, the CPU (Central processing unit) inside the remote control determines which code (corresponding to the tapped key) needs transmitting (by IR or RF) and fetches the required data from its memory which comprises a data base or other means in which tapped codes are linked to data to be transmitted." (Wouters, col. 4, lines 54-62) (emphasis added).

Third, dependent claim 26 is allowable for at least the same reasons for which claim 25 is allowable because claim 26 depends from claim 25. Reversal of the improper §102(e) rejection of claim 26 by the Board is requested.

**B. Claims 1, 3-4 and 9 (2nd ground of rejection)**

Claims 1, 3-4 and 9 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Pope (USP 5,963,624) in view of McNair et al. (USP 5,595,342) (Office Action, p. 6, lines 1-2). To establish a *prima facie* case of obviousness, the Examiner must demonstrate that "the reference (or references when combined) must teach or suggest all the claimed limitations." MPEP § 2142.

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**1. Independent claim 1**

Claim 1 recites, "(a) receiving a keystroke indicator signal from a remote control device; (b) generating a key code within a key code generator device . . . generating a key code signal". The combination of Pope and McNair does not form the basis for a valid rejection of claim 1 under § 103(a) because the references when combined do not teach (i) generating a key code within a key code generator device, (ii) a keystroke indicator signal as well as a key code signal, or (iii) modulating a key code.

**(i) Neither Pope nor McNair teaches generating a key code within a key code generator device.**

The Examiner states that "Pope teaches receiving a keystroke indicator signal which contains an indication of a key on the remote control device 10 that was pressed (col. 2 lines 61-col. 3 line 19), generating a key code (codes for communicating the control function to the appliances) within the code generator 12 ..." (Office Action, p. 6, lines 3-6) (emphasis added). Pope does not, however, teach generating a key code within base unit 12. The appliance control code that is transmitted by base unit 12 of Pope is not generated within base unit 12. Instead, base unit 12 receives the appliance control codes from handset 10/50. In Pope, a digital cordless telephone handset 10/50 is used as a universal remote control device to control electrical appliances. Pope explains:

"The present invention uses a digital cordless telephone handset to store a variety of appliance control codes. These appliance control codes can be transmitted to a base unit. The base unit can translate the appliance control codes to control signals such as infrared control signals, to control an electrical appliance" (Pope, col. 1, lines 31-36) (emphasis added). See also Pope, col. 2, lines 48-52 and 63-65.

The appliance control codes are not generated within the base unit 12 of Pope. Instead, the appliance control codes are transmitted from the handset 10/50 to the base unit 12, where they are translated to control signals. Base unit 12 of Pope does not receive a keystroke indicator and then generate a key code.

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Thus, Pope does not teach the recited "receiving a keystroke indicator signal from a remote control device" (emphasis added). Pope states, "Once an appliance control code is received by the base unit, the base unit will know to transfer the control code to an appliance" (Pope, col. 4, lines 49-51) (emphasis added). Thus, in Pope, an appliance control code is received by base unit 12 and is then transferred to an appliance; the appliance control code is not generated within base unit 12.

**(ii) Pope and McNair do not teach both a keystroke indicator signal and a key code signal.**

The Examiner states that "Pope teaches receiving a keystroke indicator signal which contains an indication of a key on the remote control device 10 that was pressed (col. 2 lines 61-col. 3 line 19), . . ." (Office Action, p. 6, lines 3-6). Nowhere, however, does Pope teach a keystroke indicator signal in the passage cited by the Examiner; which is reproduced below in its entirety:

"Keypad 30 includes the numbers 1-9, the "star" and the "pound" key. Additionally, "up arrow" key 30a and "down arrow" key 30b can be used to scroll through a menu. A "transmit" key 30c can be used to transmit the appliance control code once the appliance control has been selected. In one embodiment, the user gets into the menu by pressing an "up arrow" or a "down arrow" key. Alternately a "menu" button (not shown) is used. The keys for numbers 1-9 can have different meanings once the user is in the menu. Menu functions can be printed above the normal telephone control keys. FIG. 1 shows compact disc, television, cable and AC signal control menu-function buttons. The setup menu can be entered, one of these buttons pressed, and then using the up and down arrows, the specific controls for a given electrical appliance can be scrolled through. The different appliance controls can be listed in the order of frequency of use. For example, the "mute" function could be the first function listed in each menu selection.

Alternately, individual functions can be mapped with the associated buttons of the keypad, and a display 32 need not be used. Buttons similar to a "shift," "alt," and "control" on a normal computer keypad can be used to change the meanings of buttons "0" to "9," "star," and "pound." The different meanings associated with different buttons can be printed in different colors, which are



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the same colors of the associated buttons "shift," "alt," or "control."  
(Pope, col. 2, line 61 – col. 3, line 19) (emphasis added)

Thus, the passage of Pope above teaches appliance controls and appliance control codes but does not teach a keystroke indicator signal as the Examiner maintains.

Moreover, it is improper to construe the appliance control codes of Pope to teach both a keystroke indicator signal and a key code signal. According to the tenets of claim differentiation, a "keystroke indicator signal" cannot be interpreted to be the same as a "key code signal". Such a claim interpretation is presumptively unreasonable. *See, e.g., Karlin Tech. Inc. v. Surgical Dynamics Inc.*, 177 F.3d 968, 50 USPQ2d 1465, 1468 (Fed. Cir. 1999). In addition, such a claim interpretation would render claim 1 internally inconsistent because "keystroke indicator/key code" information that was already received by the key code generator device would later be generated by the key code generator device. Thus, Pope does not teach both a keystroke indicator and a key code. The handset 10/50 of Pope transmits an appliance control code and not a keystroke indicator.

**(iii) Neither Pope nor McNair teaches modulating a key code.**

The Examiner admits that Pope is silent on teaching modulating a key code onto a carrier signal. (Office Action, p. 6, line 7) Moreover, McNair does not teach modulating a key code. McNair does not teach a key code. And the Examiner does not state that McNair teaches modulating a key code onto a carrier signal. Instead, the Examiner states that McNair teaches "the control signal is modulated" (Office Action, p. 6, line 8). This is insufficient to establish a *prima facie* case of obviousness.

Moreover, there would be no motivation to combine McNair with Pope even if McNair did disclose a limitation of claim 1 (which it does not). McNair is directed to a control system for a gas-fired, central heating system and does not concern key code signals for electronic consumer devices.

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Therefore, Pope and McNair do not form the basis for a valid rejection under § 103(a) because neither Pope nor McNair teaches (i) generating a key code within a key code generator device, (ii) a keystroke indicator signal as well as a key code signal, or (iii) modulating a key code. In addition, there is no motivation to combine McNair with Pope to arrive at all of the limitations of claim 1. For these reasons, reconsideration of the § 103(a) rejection and allowance of claim 1 are requested.

## **2. Dependent claims 3-4 and 9**

Claim 9 recites, "said key code generated in (b) is part of a codeset, and wherein said remote control device does not store said codeset" (emphasis added). With respect to base claim 1, the Examiner states that "Pope teaches receiving a keystroke indicator signal which contains an indication of a key on the remote control device 10" (Office Action, p. 6, lines 3-4) (emphasis added). Thus, the Examiner considers that handset 10 of Pope teaches the remote control device recited in claim 9. The Examiner then states, "The code generated by the code generator is not store in the remote control because it is transmitted to the appliances" (Office Action, p. 6, lines 18-19). This incorrectly characterizes the teachings of Pope. The appliance control codes of Pope are indeed stored on handset 10 and are transmitted from handset 10 to base unit 12. Pope explains:

"The present invention uses a digital cordless telephone handset to store a variety of appliance control codes. These appliance control codes can be transmitted to a base unit. The base unit can translate the appliance control codes to control signals such as infrared control signals, to control an electrical appliance" (Pope, col. 1, lines 31-36) (emphasis added)

"The cordless digital telephone handset includes a memory 66 . . . used to store the appliance control codes. Preferably, the appliance control codes can be transmitted to the base unit 12 . . ." (Pope, col. 2, lines 48-52) (emphasis added).

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"Fig. 2 is a diagram of a handset 50 of the present invention. . . .  
The appliance control codes are stored in a memory 66" (Pope, col. 4, lines 17-28) (emphasis added).

Base unit 12 does not generate the appliance control codes. Instead, base unit 12 receives the appliance control codes, which were stored in memory 66 of handset 10, and then translates the appliance control codes into infrared control signals. Thus, Pope does not teach that handset 10 does not store a codeset.

Claims 3-4 and 9 depend from claim 1. In addition to the reasons explained above, dependent claims 3-4 and 9 are allowable for at least the same reason for which claim 1 is allowable. Reversal of the § 103(a) rejection and allowance of claims 3-4 and 9 by the Board is requested.

**C. Dependent claim 2 (3rd ground of rejection)**

Claim 2 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Pope in view of McNair and further in view of Goldstein (USP 5,410,326) (Office Action, p. 7, lines 1-2).

Claim 2 includes the following limitations of base claim 1, "(a) receiving a keystroke indicator signal from a remote control device; (b) generating a key code within a key code generator device . . ." Claim 2 also recites "wherein said key code signal is transmitted in (d) from said key code generator device to said remote control device".

None of Pope, McNair or Goldstein teaches either (i) generating a key code within a key code generator device or (ii) both a keystroke indicator signal and a key code signal. Moreover, the Examiner seems to admit that Pope and McNair are silent on teaching that the key code generator transmits the key code signal to the remote control device. (Office Action, p. 7, lines 4-10). And Goldstein does not teach this limitation.

None of Pope, McNair or Goldstein teaches transmitting a key code signal from the key code generator device back to the remote control device. The fact that Goldstein may teach sending an IR code or an entire codeset from a cable

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television converter box to a remote control device to update the remote control device does not teach transmitting a key code signal from a key code generator device back to the remote control device. Indeed, Goldstein does not teach transmitting a key code signal as opposed to a key code or a codeset. The cable television converter box of Goldstein does not teach a key code generator because the cable television converter box of Goldstein receives complete codesets from a remote database or is loaded with complete codesets. (Goldstein, col. 15, lines 20-68; col. 17, lines 62-67). The television converter box of Goldstein is not a key code generator because the GLUE logic 95 in the universal remote control 5, as opposed to the television converter box, generates the IR sequences from the codes. Goldstein states:

“The glue logic 95 will supply the IR sequences from codes, stored in the RAM 90, upon command of the user. . . . These codes describe carrier frequencies, pulse widths and pulse duration to be generated to the glue logic 95 for producing infrared pulses from the infrared diode 97” (Goldstein, col. 13, lines 23-33) (emphasis added).

Thus, Goldstein does not teach transmitting a key code signal from a key code generator.

In addition, to establish obviousness, there must be “something in the prior art as a whole to suggest the desirability, and thus the obviousness of making the combination.” *Interconnect Planning Corp. v. Feil*, 774 F.2d 1132, 1143, 227 USPQ 543, 551 (Fed. Cir. 1985) quoting *Lindemann Maschinenfabrik GMBH v. American Hoist Derrick Co.*, 730 F. 2d 1452, 1462, 221 USPQ 481, 488 (Fed. Cir. 1984). The motivation posited by the Examiner to combine Goldstein and Pope is non-existent. The Examiner states that Goldstein teaches “a cable box transmitting key codes to the remote control in order to update the remote control with new control codes.” (Office Action, p. 7, lines 11-13) (emphasis added). But there would be no motivation to update the remote control device of claim 2 with new codesets, as allegedly taught by Goldstein, because claim 2 does not recite that any key code or codeset is ever stored on the remote control device. Claim

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2 recites transmitting a key code signal to the remote control device and does not recite transmitting a codeset to the remote control device. The motivation proposed by the Examiner would only result in a combination wherein codesets, or at least key codes, are stored on a remote control device.

The combination of Pope, McNair and Goldstein does not form the basis for a valid rejection of claim 2 under § 103(a) because the combination does not teach (i) generating a key code within a key code generator device; (ii) both a keystroke indicator signal and a key code signal, or (iii) transmitting a key code signal from the key code generator device back to the remote control device. Furthermore, there is no motivation to combine the teachings of Goldstein with the teachings of Pope and McNair in such a way as to obtain all of the limitations of claim 2. Therefore, reversal of the improper § 103(a) rejection of claim 2 by the Board is requested.

**D. Dependent claims 5 and 10 (4th ground of rejection)**

Claims 5 and 10 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Pope in view of McNair and further in view of Teskey (USP 6,747,568) (Office Action, p. 7, lines 14-16).

Claims 5 and 10 depend directly or indirectly from claim 1 and include the following limitations of claim 1: "(a) receiving a keystroke indicator signal from a remote control device; (b) generating a key code within a key code generator device . . . ." None of Pope, McNair or Teskey teaches (i) generating a key code within a key code generator device or (ii) both a keystroke indicator signal and a key code signal.

In addition, claim 10 recites that "said timing information describes a digital one and a digital zero". The Examiner admits that Pope "is silent on teaching the key code comprises timing information defining the binary number (ones and zeros) in modulated." But the Examiner states that Teskey "teaches the format of the remote control signal having the necessary timing and modulation information (col. line 60-col. 4 line 8)" (Office Action, p. 8, lines 7-10). Teskey

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does not, however, teach “the necessary timing and modulation information.” The passage of Teskey cited by the Examiner does not teach timing information that defines a digital one or a digital zero. In fact, Teskey does not mention a digital one, a digital zero or any type of mark/space representation.

The combination of Pope, McNair and Teskey does not form the basis for a valid rejection of either claim 5 or claim 10 under § 103(a) because the combination does not teach (i) generating a key code within a key code generator device or (ii) both a keystroke indicator signal and a key code signal. And with regard to claim 10, Teskey does not teach timing information that defines a digital one or a digital zero. Therefore, reversal of the improper § 103(a) rejection of claims 5 and 10 by the Board is requested.

**E. Dependent claim 6 (5th ground of rejection)**

Claim 6 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Pope in view of McNair and further in view of August (USP 5,671,267) (Office Action, p. 8, lines 16-18).

Claim 6 includes the following limitations of base claim 1, “(a) receiving a keystroke indicator signal from a remote control device; (b) generating a key code within a key code generator device . . . .” None of Pope, McNair or August teaches (i) generating a key code within a key code generator device or (ii) both a keystroke indicator signal and a key code signal.

In addition, claim 6 recites, “(e) pressing a power-on key of said remote control device causing said remote control device to transmit said keystroke indicator signal that is received in (a), wherein said key code signal transmitted in (d) is received onto an electronic consumer device, and wherein said pressing in (e) causes said electronic consumer device to turn on” (emphasis added). The Examiner states that Pope “is not explicit in teaching transmitting a keystroke indicator signal that cause the appliance to turn on. One skill in the art recognizes that a remote control is generally use in turning an appliance on/off and is further evidence by August et al. (col. 8 lines 3-5)” (Office Action, p. 8, line

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20 – p. 9, line 2). The Examiner has not presented a *prima facie* case of obviousness because the Examiner has not stated that August teaches a remote control device transmitting a keystroke indicator signal. Indeed, August does not teach a keystroke indicator signal. The passage of August cited by the Examiner teaches handset unit 10 of August using a key code signal, as opposed to a keystroke indicator signal, to turn a television set on and off. Interpreting a “keystroke indicator signal” to be the same as a “key code signal” would be contrary to the tenets of claim differentiation.

The combination of Pope, McNair and August does not teach (i) receiving a keystroke indicator signal from a remote control device, (ii) generating a key code within a key code generator, and (iii) transmitting a key code signal from the key code generator to an electronic consumer device to turn on the electronic consumer device. Nor does the combination teach both a keystroke indicator signal and a key code signal. Reversal of the improper § 103(a) rejection of claim 6 by the Board is requested.

**F. Dependent claim 7 (6th ground of rejection)**

Claim 7 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Pope in view of McNair and further in view of Wouters (Office Action, p. 9, lines 8-10).

Claim 7 includes the following limitations of base claim 1, “(a) receiving a keystroke indicator signal from a remote control device; (b) generating a key code within a key code generator device . . . .” The combination of Pope, McNair and Wouters teaches neither (i) generating a key code within a key code generator device nor (ii) both a keystroke indicator signal and a key code signal.

In addition, claim 7 recites “wherein said key code signal is received by said remote control device”. The Examiner states that “Pope teaches the remote control receiving key code signals (infrared control signal) from a controller (col. 4 lines 52-56)” (Office Action, p. 9, lines 11-12). The Examiner has not presented a *prima facie* case of obviousness because the Examiner has not stated that

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Pope teaches a remote control device that receives a key code signal from a key code generator device that generated the key code. The passage of Pope cited by the Examiner teaches receiving an infrared signal from a controller, such as a television remote control. The cited passage does not teach receiving a key code signal from a key code generator device. Interpreting a "remote control device" to be the same as a "key code generator device" recited in the same claim would be contrary to the tenets of claim differentiation.

The combination of Pope, McNair and Wouters does not form the basis for a valid rejection of claim 7 under § 103(a) because the combination does not teach any of (i) generating a key code within a key code generator device, (ii) both a keystroke indicator signal and a key code signal, or (iii) receiving a key code signal from the key code generator device back on the remote control device. Therefore, reversal of the improper § 103(a) rejection of claim 7 by the Board is requested.

**G. Dependent claim 8 (7th ground of rejection)**

Claim 8 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Pope in view of McNair and in view of Wouters and further in view of August (Office Action, p. 10, lines 1-3).

The four-way combination of Pope, McNair, Wouters and August does not form the basis for a valid rejection of claim 8 under § 103(a) for the same reasons explained above with relation to claims 1 and 7. The 4-way combination does not teach any of (i) receiving a key code signal from the key code generator device back on the remote control device, (ii) both a keystroke indicator signal and a key code signal, or (iii) generating a key code within a key code generator device.

Furthermore, it is impermissible to "pick and choose" individual elements among the references to recreate the claimed invention because "[o]ne cannot use hindsight reconstruction to pick and choose among isolated disclosures in the prior art to deprecate the claimed invention." *In re Fritch*, 972 F.2d 1260,



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1266, 23 USPQ2d 1780, 1784 (Fed. Cir. 1992) *citing In re Fine*, 837 F.2d 1071,1075, 5 USPQ2d 1596,1600 (Fed. Cir. 1988). There is no motivation to combine the teachings of the four-way combination in such a way as to obtain all of the limitations of claim 8. For these reasons, reversal of the improper § 103(a) rejection of claim 8 by the Board is requested.

**H. Dependent claim 18 (8th ground of rejection)**

Claim 18 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Wouters in view of Teskey (Office Action, p. 10, lines 14-15).

The combination of Wouters and Teskey does not form the basis for a valid rejection of claim 18 under § 103(a) for the same reasons explained above with relation to claim 13. Neither Wouters nor Teskey discloses a device with a keypad that both transmits an IR signal and receives an RF signal.

Because combination of Wouters and Teskey does not disclose all of the elements of claim 18, reversal of the improper § 103(a) rejection of claim 18 by the Board is requested.

**I. Dependent claims 20-21 (9th ground of rejection)**

Claims 20-21 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Wouters in view of August (Office Action, p. 11, lines 6-7).

Both claim 20 and claim 21 depend from claim 19 and incorporate the limitations of claim 19. The combination of Wouters and August does not form the basis for a valid rejection of either claim 20 or claim 21 under § 103(a) for the same reasons explained above with relation to claim 19. Neither Wouters nor August discloses a codeset that includes two key codes: one key code corresponding to a function of one electronic consumer device, and the other key code corresponding to the same function of another electronic consumer device. The Examiner has not presented a *prima facie* argument of obviousness because the Examiner has not stated that the combination of Wouters and August discloses a codeset with two recited key codes that correspond to the

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same function on different electronic consumer devices. Neither Wouters nor August teaches the recited codeset with key codes that correspond to the same function on separate electronic consumer devices. August does not mention a codeset.

Because combination of Wouters and August does not disclose a codeset with two key codes that correspond to the same function on two electronic consumer devices, reversal of the improper § 103(a) rejection of claims 20-21 by the Board is requested.

**J. Dependent claim 23 (10th ground of rejection)**

Claim 23 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Wouters in view of Pope (Office Action, p. 11, lines 18-19).

Claim 23 depends from claim 22 and incorporates the limitations of claim 22. The combination of Wouters and Pope does not form the basis for a valid rejection of claim 23 under § 103(a) for the same reasons explained above with relation to claim 22. Neither Wouters nor Pope teaches a device with a keypad, a radio frequency receiver and an infrared transmitter.

The RF receiver, IR transmitter and keypad of Wouters are not on the same device. The remote control unit 3 of Wouters does not include an RF receiver. Pope does not teach an RF receiver. And Pope even teaches against including an IR transmitter on the handset. Pope explains:

"One advantage of having the infrared transmitter attached to the base unit 12 is that the base unit 12 can be typically powered by house current. Since no battery is used, the infrared transmitter can draw more power than is used in battery-type systems. For example, if a button is continuously pressed in a battery-type system, in order to conserve power the infrared signal is not continuously sent, but is sent intermittently. The base unit 12 connected to AC power need not be limited in this fashion. Additionally, it is also possible to have the base unit 12 supply a greater amount of power to the infrared transmitter to transmit a greater amount of infrared energy. In this manner, it may be

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possible for the infrared bulb to not be focused directly towards the appliance" (Pope, col. 3, lines 46-60) (emphasis added).

Thus, Pope teaches away from the limitation of claim 23 because "it suggests that the line of development flow from the reference's disclosure is unlikely to be productive of the result sought by the applicant." *In re Gurley*, 27 F.3d 551, 553, 31 USPQ2d 1130, 1131 (Fed. Cir. 1994).

Because the combination of Wouters and Pope does not disclose all of the limitations of claim 23 as explained above with relation to claim 22, reversal of the improper §103(a) rejection of claim 23 by the Board is requested.


### VIII. CONCLUSION

The Examiner has not established a prima facie case of anticipation or obviousness. With regard to independent claims 13 and 22, Wouters does not disclose a device with a keypad that both receives a signal within a radio frequency band and transmits a signal within an infrared frequency band. With regard to independent claim 19, Wouters does not disclose a codeset that includes two key codes: one key code corresponding to a function of one electronic consumer device and the other key code corresponding to the same function of another electronic consumer device. With regard to independent claim 25, Wouters does not disclose (i) receiving a keystroke indicator signal from a remote control device, (ii) transmitting a key code signal to the remote control device, and then (iii) transmitting the key code signal from the remote control device to an electronic consumer device. With regard to independent claim 1, the combination of Pope and McNair does not teach (i) generating a key code within a key code generator device, (ii) a key stroke indicator signal as well

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as a key code signal, or (iii) modulating a key code. The Board is requested to reverse the §102 and §103 rejections of claims 1-10, 13-16, 18-26.

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By   
Darien K. Wallace

Date of Deposit: June 11, 2007

Respectfully submitted,



Darien K. Wallace  
Attorney for Appellant  
Reg. No. 53,736  
Customer No. 47,713



## IX. CLAIMS APPENDIX

1. (original): A method comprising:
  - (a) receiving a keystroke indicator signal from a remote control device;
  - (b) generating a key code within a key code generator device;
  - (c) modulating said key code onto a carrier signal, thereby generating a key code signal; and
  - (d) transmitting said key code signal from said key code generator device.
2. (original): The method of Claim 1, wherein said key code signal is transmitted in (d) from said key code generator device to said remote control device.
3. (original): The method of Claim 1, wherein said key code signal is transmitted in (d) from said key code generator device to an electronic consumer device.
4. (original): The method of Claim 1, wherein said key code consists of a binary number.
5. (original): The method of Claim 1, wherein said key code comprises a binary number and timing information, and wherein said timing information defines how said binary number is modulated in (c) onto said carrier signal.
6. (original): The method of Claim 1, further comprising:
  - (e) pressing a power-on key of said remote control device causing said remote control device to transmit said keystroke indicator signal that is received in (a), wherein said key code signal transmitted in (d) is received onto an electronic consumer device, and wherein said pressing in (e) causes said electronic consumer device to turn on.

7. (original): The method of Claim 1, wherein said carrier signal is in a radio frequency band, wherein said key code signal is received by said remote control device, and wherein said method further comprises:

(e) modulating said key code onto a second carrier signal, thereby generating a second key code signal, said modulating being performed on said remote control device wherein said second carrier signal is in an infrared frequency band; and

(f) transmitting said second key code signal from said remote control device to an electronic consumer device.

8. (original): The method of Claim 7, further comprising:

(g) pressing a power-on key of said remote control device causing said remote control device to transmit said keystroke indicator signal that is received in (a), wherein the pressing in (g) causes said electronic consumer device to turn on.

9. (original): The method of Claim 1, wherein said key code generated in (b) is part of a codeset, and wherein said remote control device does not store said codeset.

10. (original): The method of Claim 9, wherein said codeset comprises timing information and a plurality of key codes, and wherein said timing information describes a digital one and a digital zero.

11. (previously presented): A method comprising:

(a) receiving a keystroke indicator signal from a remote control device;

(b) generating a key code within a key code generator device;

(c) modulating said key code onto a carrier signal, thereby generating a key code signal; and

(d) transmitting said key code signal from said key code generator device, wherein a codeset comprises a plurality of key codes, each one of said plurality

of key codes corresponding to a function of an electronic consumer device, and wherein no more than a single one of said plurality of key codes is present on said remote control device at any given time.

12. (original): The method of Claim 11, wherein said function of said electronic consumer device is taken from the group consisting of: power on, power off, channel advance, channel back, volume up, volume down, cursor up, cursor down, cursor right, cursor left, select, play, record, stop, forward, back and pause.

13. (previously presented): A remote control device comprising:

a receiver that receives a first key code signal, wherein said first key code signal is generated by modulating a key code onto a first carrier signal, said first carrier signal falling within a radio frequency band;

a transmitter that transmits a second key code signal, wherein said second key code signal is generated by modulating said key code onto a second carrier signal, said second carrier signal falling within an infrared frequency band; and

a keypad that includes a key that corresponds to said key code, wherein said key code corresponds to a function of an electronic consumer device.

14. (original): The device of Claim 13, wherein said key code corresponds to a second function of a second electronic consumer device, as well as to said function of said electronic consumer device.

15. (original): The device of Claim 14, wherein said transmitter transmits a third key code signal, and wherein said third key code signal is generated by modulating said key code onto a third carrier signal.

16. (original): The device of Claim 14, wherein said key code comprises a first binary number and a second binary number, said first binary number

corresponding to said function, and said second binary number corresponding to said second function.

17. (previously presented): A device comprising:

a receiver that receives a first key code signal, wherein said first key code signal is generated by modulating a key code onto a first carrier signal, said first carrier signal falling within a radio frequency band;

a transmitter that transmits a second key code signal, wherein said second key code signal is generated by modulating said key code onto a second carrier signal, said second carrier signal falling within an infrared frequency band; and

a keypad that includes a key that corresponds to said key code, wherein said key code corresponds to a function of an electronic consumer device, wherein said keypad includes a second key that corresponds to a second key code, wherein a third key code signal is generated by modulating said second key code onto a third carrier signal, wherein said third key code signal is received by said receiver, and wherein both said first key code and said second key code are not both stored in said device at the same time.

18. (original): The device of Claim 13, wherein a codeset comprises timing information and a plurality of key codes, wherein each of said plurality of key codes corresponds to a different function of said electronic consumer device, wherein said key code is a binary number, and wherein said timing information defines how said binary number is modulated onto said first carrier signal.

19. (previously presented): A system comprising:

a key code generator device that generates a first key code and a second key code, wherein a codeset is stored on said key code generator device, said codeset including said first key code and said second key code, wherein said first key code corresponds to a selected function of a first electronic consumer



device, and wherein said second key code corresponds to said selected function of a second electronic consumer device; and

means for relaying said first key code and said second key code from said key code generator device through a remote control device to said first electronic consumer device and to said second electronic consumer device without simultaneously storing both said first key code and said second key code on said remote control device.

20. (original): The system of Claim 19, wherein said selected function is taken from the group consisting of: power on, power off, channel advance, channel back, volume up, volume down, cursor up, cursor down, cursor right, cursor left, select, play, record, stop, forward, back and pause.

21. (original): The system of Claim 19, wherein said selected function is power on, and wherein said system automatically determines when said first electronic consumer device powers on.

22. (previously presented): A remote control device, comprising:

- a keypad;
- an RF receiver;
- an IR transmitter; and

means for receiving a key code from said RF receiver and for sending said key code to said IR transmitter such that said key code is modulated onto an IR carrier signal, said IR carrier signal with said key code modulated thereon being transmitted from said remote control device by said IR transmitter.

23. (original): The remote control device of Claim 22, wherein said key code is not stored on said remote control device immediately prior to said means receiving the key code.

24. (original): The remote control device of Claim 22, wherein said means is a microcontroller.

25. (previously presented): A method comprising:

(a) receiving a keystroke indicator signal from a remote control device;

(b) using said keystroke indicator signal to generate a key code, wherein a key code generator device generates said key code;

(c) modulating said key code onto a carrier signal and thereby generating a key code signal; and

(d) transmitting said key code signal from said key code generator device to said remote control device, wherein said remote control device transmits said key code signal to an electronic consumer device.

26. (previously presented): The method of Claim 25, wherein said key code generated in (b) is part of a codeset, and wherein said codeset is not stored on said remote control device.

## **X. EVIDENCE APPENDIX**

No evidence has been submitted pursuant to 37 C.F.R. §§ 1.130, 1.131 or 1.132. No affidavit or declaration has been submitted under § 1.130 to disqualify a commonly owned patent or a published application as prior art. No affidavit or declaration of a prior invention has been submitted under § 1.131. No affidavit or declaration traversing rejections or objections has been submitted under § 1.132. No such evidence was entered by the Examiner and relied upon by Appellants in this appeal.

In the rejections that are to be reviewed in this appeal, the Examiner has not relied upon any non-patent documents.

## **XI. RELATED PROCEEDINGS APPENDIX**

No decision has yet been rendered by a court or the Board in this or any related proceeding.



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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/737,029	12/16/2003	Daniel SauFu Mui	ZIL-568	4506
47713	7590	07/18/2007	EXAMINER	
IMPERIUM PATENT WORKS P.O. BOX 587 SUNOL, CA 94586			ART UNIT	PAPER NUMBER

DATE MAILED: 07/18/2007

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Notification of Non-Compliant Appeal Brief (37 CFR 41.37)</b>	Application No. 10/737,029	Applicant(s) MUI, DANIEL SAUFU	
	Examiner Vernal Brown	Art Unit 2612	

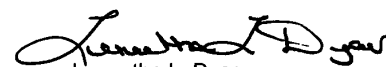
**--The MAILING DATE of this communication appears on the cover sheet with the correspondence address--**

The Appeal Brief filed on 14 June 2007 is defective for failure to comply with one or more provisions of 37 CFR 41.37.

To avoid dismissal of the appeal, applicant must file an amended brief or other appropriate correction (see MPEP 1205.03) within **ONE MONTH or THIRTY DAYS** from the mailing date of this Notification, whichever is longer. **EXTENSIONS OF THIS TIME PERIOD MAY BE GRANTED UNDER 37 CFR 1.136.**

1.  The brief does not contain the items required under 37 CFR 41.37(c), or the items are not under the proper heading or in the proper order.
2.  The brief does not contain a statement of the status of all claims, (e.g., rejected, allowed, withdrawn, objected to, canceled), or does not identify the appealed claims (37 CFR 41.37(c)(1)(iii)).
3.  At least one amendment has been filed subsequent to the final rejection, and the brief does not contain a statement of the status of each such amendment (37 CFR 41.37(c)(1)(iv)).
4.  (a) The brief does not contain a concise explanation of the subject matter defined in each of the independent claims involved in the appeal, referring to the specification by page and line number and to the drawings, if any, by reference characters; and/or (b) the brief fails to: (1) identify, for each independent claim involved in the appeal and for each dependent claim argued separately, every means plus function and step plus function under 35 U.S.C. 112, sixth paragraph, and/or (2) set forth the structure, material, or acts described in the specification as corresponding to each claimed function with reference to the specification by page and line number, and to the drawings, if any, by reference characters (37 CFR 41.37(c)(1)(v)).
5.  The brief does not contain a concise statement of each ground of rejection presented for review (37 CFR 41.37(c)(1)(vi)).
6.  The brief does not present an argument under a separate heading for each ground of rejection on appeal (37 CFR 41.37(c)(1)(vii)).
7.  The brief does not contain a correct copy of the appealed claims as an appendix thereto (37 CFR 41.37(c)(1)(viii)).
8.  The brief does not contain copies of the evidence submitted under 37 CFR 1.130, 1.131, or 1.132 or of any other evidence entered by the examiner **and relied upon by appellant in the appeal**, along with a statement setting forth where in the record that evidence was entered by the examiner, as an appendix thereto (37 CFR 41.37(c)(1)(ix)).
9.  The brief does not contain copies of the decisions rendered by a court or the Board in the proceeding identified in the Related Appeals and Interferences section of the brief as an appendix thereto (37 CFR 41.37(c)(1)(x)).
10.  Other (including any explanation in support of the above items):

4. Summary of Claimed Subject Matter: The independent claim 17 should be mapped to the specification according to page and line number, paragraph number, or to the drawings, if any.

  
 Leneetha L. Dyar  
 Patent Appeal Center Specialist



AF *TW*

### AMENDED APPEAL BRIEF TRANSMITTAL LETTER

July 23, 2007

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Re: Applicant: Daniel SauFu Mui  
Assignee: ZiLOG, Inc.  
Title: "Relaying Key Code Signals Through a Remote Control Device"  
Serial No.: 10/737,029  
Examiner: Vernal U. Brown  
Atty. Docket No.: ZIL-568  
Filed: December 16, 2003  
Art Unit: 2612

Dear Sir:

Transmitted herewith are the following documents:

- (1) twice amended appeal brief (38 pages);
- (2) return postcard; and
- (3) this transmittal sheet.

- No additional Fee is required.
- The fee has been calculated as shown below:

CLAIMS AS AMENDED						
	REMAINING AFTER AMENDMENT		HIGHEST NO. PREVIOUSLY PAID FOR	EXTRA CLAIMS PRESENT	RATE	ADDITIONAL FEE
TOTAL CLAIMS	26	minus	26	0	\$50	\$0.00
INDEP. CLAIMS	7	minus	7	0	\$200	\$0.00
Total Additional Claim Fee						\$0.00
Fee for Appeal Brief [§41.20(b)(2)] (PREVIOUSLY PAID)						\$0.00
Fee for Request for Oral Hearing [§41.20(b)(3)]						\$0.00
Fee for Extension of Time ( __ month) [§1.17(a)(1)]						\$0.00
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By *Darien K. Wallace*  
Darien K. Wallace

Date of Deposit: July 23, 2007

Respectfully submitted,

*Darien K. Wallace*  
Darien K. Wallace  
Attorney for Applicants  
Reg. No. 53,736  
Customer No. 47,713



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Appellant: Daniel SauFu Mui  
Assignee: ZiLOG, Inc.  
Title: "Relaying Key Code Signals Through a Remote Control Device"  
Appl. No.: 10/737,029 Filing Date: December 16, 2003  
Examiner: Vernal U. Brown Art Unit: 2612  
Docket No.: ZIL-568

July 23, 2007

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**APPEAL BRIEF**

This twice amended Appeal Brief is filed pursuant to 37 CFR § 41.37 in support of the appeal noticed on February 19, 2007.

**I. REAL PARTY IN INTEREST**

The real party in interest is the assignee, ZiLOG, Inc., as named in the caption above.

**II. RELATED APPEALS AND INTERFERENCES**

Based on information and belief, there are no appeals or interferences that could directly affect or be directly affected by or have a bearing on the decision by the Board of Patent Appeals and Interferences (the "Board") in the pending appeal.

**III. STATUS OF CLAIMS**

The application at issue, filed on December 16, 2003, included 24 claims. In an amendment dated July 28, 2006, claims 25-26 were added. Claims 1-26 are subject to this Appeal.

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**IV. STATUS OF AMENDMENTS**

An amendment dated December 19, 2006, was filed subsequent to a final Office action dated October 19, 2006 (“Office Action”). An Advisory Action dated February 7, 2007 (“Advisory Action”), stated that the amendment was entered. The advisory action included an explanation of how the amended claims would be rejected.

**V. SUMMARY OF CLAIMED SUBJECT MATTER**

The following summary pursuant to 37 CFR §41.37(c)(1)(v) is a concise explanation of the claims and is to be read in light of the disclosure. This summary does not limit the claims. (See MPEP §1206).

An embodiment of Appellant’s novel system 10 is illustrated in figure 1 (replicated below). System 10 relays a key code through a remote control device

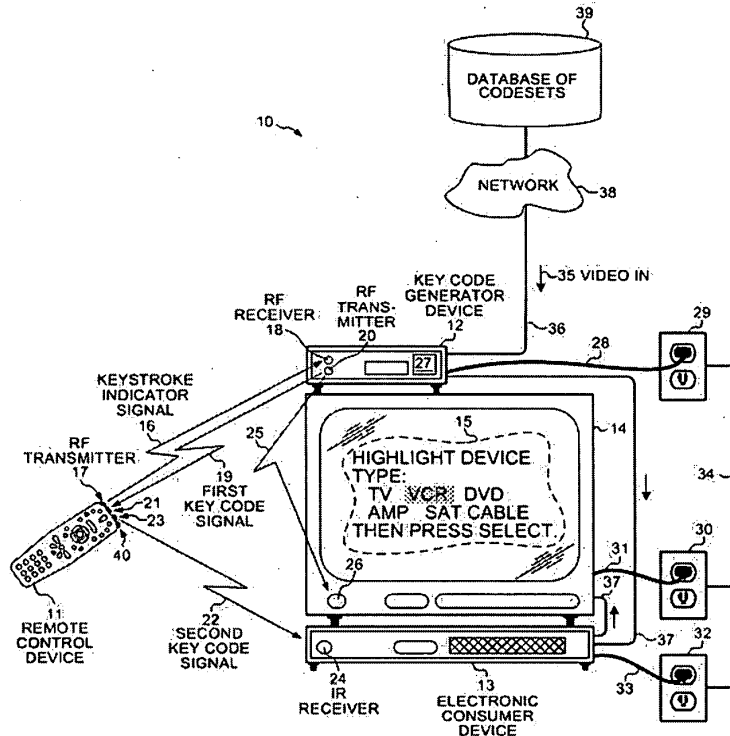


FIG. 1



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to an electronic consumer device. The key code is not stored in the remote control device in a permanent manner, but rather is relayed through the remote control device. System 10 includes a remote control device 11, a key code generator device 12, a first electronic consumer device 13 (a VCR) and a second electronic consumer device 14 (a TV).

Upon receiving a keystroke indicator signal from remote control 11, key code generator 12 identifies the particular codeset usable to communicate with the selected electronic consumer device. The keystroke indicator signal contains an indication of a key on the remote control that was pressed, which corresponds to a function of the selected electronic consumer device. Using the identified codeset and the indication of the pressed key, key code generator 12 generates a key code and modulates that key code onto a radio frequency carrier signal, thereby generating a first key code signal 19. Remote control 11 receives first key code signal 19 from key code generator 12 and modulates the key code onto an infrared frequency carrier signal, thereby generating a second key code signal 22. Remote control 11 relays the key code to the selected electronic consumer device in second key code signal 22. The key code causes the selected electronic consumer device to perform the desired function.

**A. Independent claim 1**

Independent claim 1 is directed to a method of generating a key code within a key code generator device, as described in steps 101 through 104 in figure 2 (replicated below). As shown in figures 1 and 2, claim 1 recites a method of (a) receiving keystroke indicator signal 16 from remote control device 11 (Specification, p. 6, lines 26-28); (b) generating a key code within key code generator device 12 (Specification, p. 8, lines 14-16); (c) modulating the key code onto a carrier signal thereby generating first key code signal 19 (Specification, p. 8, lines 26-29); and (d) transmitting key code signal 19 from key code generator device 12 (Specification, p. 11, lines 4-5).

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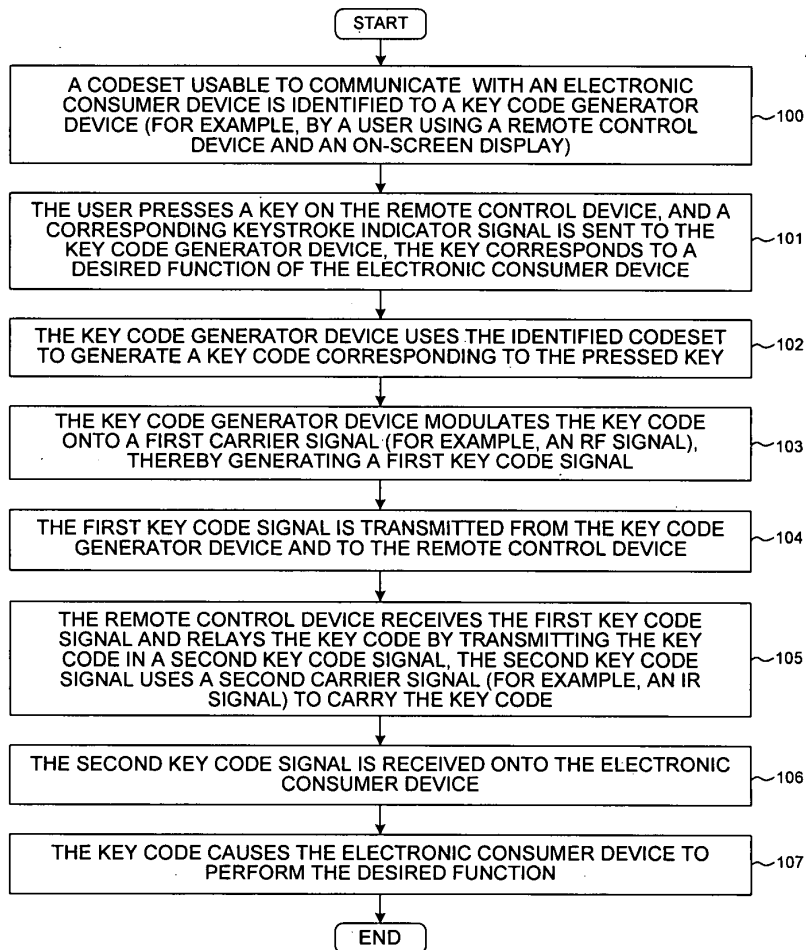


FIG. 2

Dependent claim 2 is directed to the method of claim 1, but includes the limitation that first key code signal 19 is transmitted from key code generator device 12 to remote control device 11 (Specification, p. 11, lines 6-7).

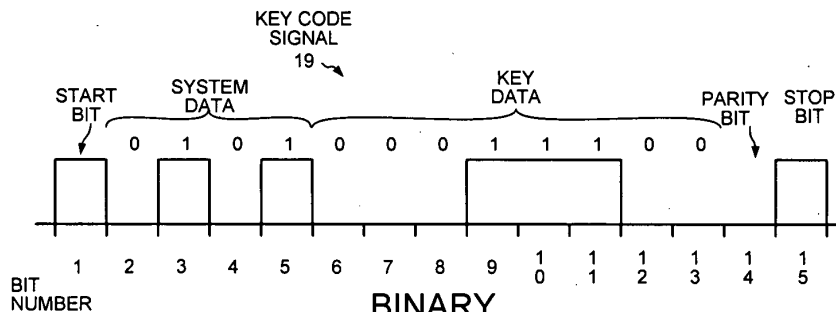
Dependent claim 3 includes a limitation that first key code signal 19 is transmitted from key code generator 12 to the selected electronic consumer device (Specification, p. 12, lines 13-15). Dependent claim 4 includes the limitation that the key code consists of a binary number (Specification, p. 8, lines 18-20) as depicted in figure 3 (replicated below).

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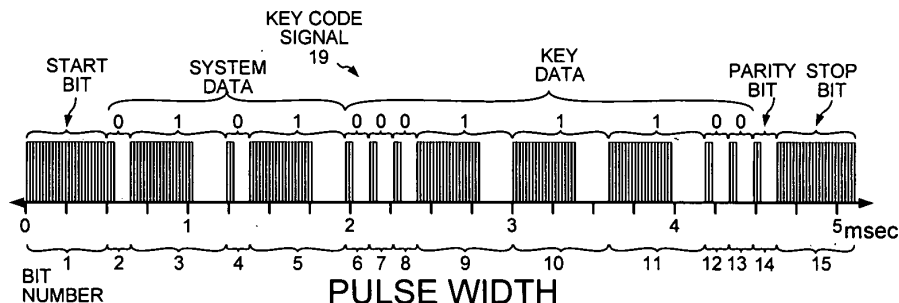
0 1 0 1 0 0 0 1 1 1 0 0  
 SYSTEM CODE KEY DATA

KEY CODE  
 FIG. 3

Dependent claim 5 includes the limitation that the key code comprises a binary number and timing information. The timing information defines how said binary number is modulated onto the carrier signal to generate first key code signal 19 (Specification, p. 9, lines 9-11) as depicted in figures 4 and 5 (replicated below).



BINARY  
 TRANSMISSION  
 FIG. 4



PULSE WIDTH  
 MODULATION  
 FIG. 5

Dependent claim 6 includes the limitation that keystroke indicator signal 16 corresponds to a power-on function, and first key code signal 19 is received

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onto an electronic consumer device and causes the electronic consumer device to be powered on. Dependent claim 7 recites that first key code signal 19 is received by remote control device 11 and includes the further steps of (e) modulating the key code onto a second carrier signal, thereby generating second key code signal 22 (Specification, p. 11, lines 8-11) and (f) transmitting second key code signal 22 to the selected electronic consumer device (Specification, p. 12, lines 1-3). Claim 7 also includes the limitation that the first carrier signal is in a radio frequency band and the second carrier signal is in an infrared frequency band.

Dependent claim 8 is directed to the method of claim 7, but includes a further limitation that keystroke indicator signal 16 corresponds to a power-on function, and second key code signal 22 causes the selected electronic consumer device to be powered on (Specification, p. 12, lines 4-7).

Dependent claim 9 includes the limitation that the key code is part of a codeset and that the codeset is not stored in remote control device 11 (Specification, p. 19, lines 11-13). Dependent claim 10 is directed to the method of claim 9, but includes a limitation that the codeset comprises timing information and a plurality of key codes. Furthermore, the timing information describes a digital one and a digital zero, as described at page 11, lines 26-28, of the Specification.

**B. Independent claim 11**

Independent claim 11 is directed to a method of relaying key codes through a remote control device to an electronic consumer device, wherein no more than a single key code is present on the remote control device at any given time. Figure 1 shows that a keystroke indicator signal 16 is received from a remote control device 11. (Specification, p. 6, lines 26-28). A key code generator device 12 then generates a key code. (Specification, p. 8, lines 14-16). Each key code corresponds to a function of an electronic consumer device 13. The key code is then modulated onto a carrier signal to generate a key code signal 19.

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(Specification, p. 8, lines 26-29). Examples of key code signal 19 are also shown in figures 4 and 5. Key code signal 19 is then transmitted from key code generator device 12 to remote control device 11. (Specification, p. 11, lines 4-5). No more than a single key code is present on remote control device 11 at any given time.

**C. Independent claim 13**

Independent claim 13 relates to remote control device 11 shown in figure 1. Remote control device 11 comprises: an RF receiver 21 that receives a first key code signal 19 (Specification, p. 11, lines 5-6); an IR transmitter 23 that transmits a second key code signal 22 (Specification, p. 11, lines 17-21); and a keypad that includes a key that corresponds to a key code. The key code corresponds to a function of an electronic consumer device. First key code signal 19 is generated by modulating the key code onto a first carrier signal having a radio frequency band. Second key code signal 22 is generated by modulating the key code onto a second carrier signal having an infrared frequency band.

Dependent claim 14 is directed to the remote control device of claim 13, but includes the limitation that the key code corresponds to the function and to a second function. The second function corresponds to a second electronic consumer device. Dependent claim 16 is directed to the remote control device of claim 14, but includes the limitation that the key code comprises a first binary number and a second binary number. The first binary number corresponds to the function, and the second binary number corresponds to the second function.

Dependent claim 18 is directed to the remote control device of claim 13, but includes the limitation that a codeset comprises timing information and a plurality of key codes. Each key code is a binary number and corresponds to a different function of the electronic consumer device. Furthermore, the timing information defines how the binary number is modulated onto the first carrier signal (Specification, p. 11, lines 26-28).

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**D. Independent claim 17**

Independent claim 17 relates to remote control device 11 shown in figure 1. Remote control device 11 comprises an RF receiver 21, an IR transmitter 23 and a keypad. (Specification, p. 11, lines 4-21). RF receiver 21 receives a first key code signal 19 (Specification, p. 11, lines 4-7), and IR transmitter 23 transmits a second key code signal 22 (Specification, p. 11, lines 20-21). The keypad includes a key that corresponds to a key code, which in turn corresponds to a function of an electronic consumer device. (Specification, p. 6, lines 21-25). First key code signal 19 is generated by modulating the key code onto a first carrier signal having a radio frequency band. Second key code signal 22 is generated by modulating the key code onto a second carrier signal having an infrared frequency band. (Specification, p. 8, lines 26-32; p. 11, lines 12-19).

The keypad also includes a second key that corresponds to a second key code. A third key code signal is generated by modulating the second key code onto a third carrier signal that is received by RF receiver 21. Both the first key code and the second key code are not both stored in remote control device 11 at the same time. (Specification, p. 3, lines 22-24; p. 19, lines 8-28).

**E. Independent Claim 19**

Claim 19 is directed to a key code generator device and a means for relaying key codes from the key code generator device through a remote control device. The key code generator device generates a first key code and a second key code. Claim 19 recites a "means for relaying said first key code and said second key code from said key code generator device through a remote control device." More specifically, the first key code corresponds to a function of a first electronic consumer device, and the second key code corresponds to the same function of a second electronic consumer device (Specification, p. 15, lines 25-26). As illustrated in Figure 1, the corresponding structure includes remote control device 11.

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**F. Independent Claim 22**

Claim 22 is directed to remote control device 11 comprising a key pad, RF receiver 21, IR transmitter 23, and a means for receiving a key code from RF receiver 21 and for sending the key code to IR transmitter 23. Claim 24 recites that the corresponding structure includes a microcontroller integrated circuit (Specification, p. 13, line 27).

**G. Independent claim 25**

Independent claim 25 is directed to a method for relaying a key code from key code generator 12 to an electronic consumer device through remote control device 11, and includes the steps 101 through 105 depicted in figure 2. Claim 25 recites a method of (a) receiving keystroke indicator signal 16 from remote control device 11 (Specification, p. 6, lines 26-28); (b) using keystroke indicator signal 16 to generate a key code within key code generator device 12 (Specification, p. 8, lines 14-16); (c) modulating the key code onto a carrier signal thereby generating first key code signal 19 (Specification, p. 8, lines 26-29); and (d) transmitting a key code signal from key code generator device 12 to remote control device 11 (Specification, p. 11, lines 4-7) and transmitting the key code signal to an electronic consumer device from remote control device 11.

Dependent claim 26 is directed to the method of claim 25 but includes the limitation that the key code is part of a codeset, and the codeset is not stored in remote control device 11 (Specification, p. 19, lines 11-13).

**VI. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL**

The following are grounds of rejection to be reviewed on appeal:

- 1) Claims 13-16, 19, 22 and 24-26 stand rejected under 35 USC §102(e) as being anticipated by Wouters et al. (US Patent 6,915,109).

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2) Claims 1, 3-4 and 9 stand rejected under 35 USC §103(a) as being unpatentable over Pope (US Patent 5,963,624) in view of McNair et al. (US Patent 5,595,342).

3) Claim 2 stands rejected under 35 USC §103(a) as being unpatentable over Pope in view of McNair and further in view of Goldstein (US Patent 5,410,326).

4) Claim 5 and 10 stand rejected under 35 USC §103(a) as being unpatentable over Pope in view of McNair and further in view of Teskey (US Patent 6,747,568).

5) Claim 6 stands rejected under 35 USC §103(a) as being unpatentable over Pope in view of McNair and further in view of August et al. (US Patent 5,671,267).

6) Claim 7 stands rejected under 35 USC §103(a) as being unpatentable over Pope in view of McNair and further in view of Wouters.

7) Claim 8 stands rejected under 35 USC §103(a) as being unpatentable over Pope in view of McNair in view of Wouters and further in view of August.

8) Claim 18 stands rejected under 35 USC §103(a) as being unpatentable over Wouters in view of Teskey.

9) Claim 20-21 stand rejected under 35 USC §103(a) as being unpatentable over Wouters in view of August.

10) Claim 23 stands rejected under 35 USC §103(a) as being unpatentable over Wouters in view of Pope.



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## VII. ARGUMENT

### A. Claims 13-16, 19, 22 and 24-26 (1st ground of rejection)

Claims 13-16, 19, 22 and 24-26 are rejected under 35 U.S.C. § 102(e) as being anticipated by Wouters et al. US Patent 6,915,109. (Office Action, p. 4, lines 1-2). "A rejection for anticipation under section 102 requires that each and every limitation of the claimed invention be disclosed in a single prior art reference." *In re Paulsen*, 30 F.3d 1475, 1478-79, 31 USPQ2d 1671, 1673 (Fed. Cir. 1994) citing *In re Spada*, 911 F.2d 705, 708, 15 USPQ2d 1655, 1657 (Fed. Cir. 1990).

#### 1. Independent claims 13 and 22

Claim 13 recites, "A remote control device comprising: a receiver that receives a first key code signal . . . within a radio frequency band; a transmitter that transmits a second key code signal . . . within an infrared frequency band; and a keypad . . ." (emphasis added). Claim 22 recites, "A remote control device, comprising: a keypad; an RF receiver; an IR transmitter ..." (emphasis added).

Wouters does not form the basis for a valid rejection under § 102(e) because Wouters does not disclose all of the limitations of either claim 13 or claim 22. Although Wouters discloses a system of devices including an IR remote control unit 3 in room 1 and an RF receiver 13 and an IR transmitter 14 in room 2, Wouters does not disclose a device with a keypad that both receives a signal within a radio frequency band and transmits a signal within an infrared frequency band.

The Examiner has not alleged that Wouters discloses a single device with a keypad that both receives an RF signal and transmits an IR signal. Instead, the Examiner states, "Wouters et al. teaches a remote control which includes the system of devices 1 and 2 (figure 1) comprising a receiver receiving a RF modulated remote control signal (col. 4 lines 25-28) and a transmitter transmitting an infrared modulated signal generated from the received RF signal (col. 4 lines 28-33)." (Office Action, p. 4, lines 3-6). The Examiner's statement that Wouters

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discloses a system of devices 1 and 2 that comprise an RF receiver and an IR transmitter is insufficient to allege a *prima facie* case of anticipation of claims that recite a device comprising a keypad, a receiver and a transmitter. In fact, the only keypad disclosed in Wouters is on remote control unit 3, which is located in a separate room (room 1) from RF receiver 13 and IR transmitter 14 (room 2). The remote control unit 3 described at column 4, lines 48-57, includes IR transmitter 4 and RF transmitter 8, but does not include an RF receiver. Thus, the Examiner does not state that Wouters discloses a single device with a keypad, an RF receiver and an IR transmitter. Nor does Wouters disclose a device with all three of these elements.

In the Advisory Action, the Examiner states, "Regarding applicant's argument regarding the system of devices as disclosed by Wouters, it is the examiner's position that the remote control device as claimed, is not limited to a single housing" (Advisory Action, p. 2, lines 2-3) (emphasis added). The Examiner then again cites column 4, lines 25-28, column 4, lines 28-33 and column 4, lines 44-58, of Wouters as disclosing all of the elements of claims 13 and 22. The Examiner is improperly interpreting the claim term "remote control device" contrary to how that term is used in the claims and in the specification. Both claims 13 and 22 recite a "device" and not a "system". As the term "remote control device" is depicted in the drawings and used in the specification, such a "remote control device" does not describe a "system" with an RF receiver in one room of a house and an RF transmitter in another room of the house.

Finally, this statement that disavows any claim scope to a "remote control device" with an RF receiver in one room and an RF transmitter in another room is dispositive to claim interpretation. By virtue of this disclaimer of claim scope, the term a "remote control device" is to be interpreted as excluding a "system" with multiple components in separate rooms. *See Invitrogen Corporation v. Biocrest Manufacturing*, 327 F.3d 1364, 1368, 66 USPQ2d 1631, 1633 (Fed. Cir. 2003); *Inverness Med. Switz. GmbH v. Princeton Biomeditech Corp.*, 309 F.3d, 1365, 1372, 64 USPQ2d 1926, 1932 (Fed. Cir. 2002); *Rheox*, 276 F.3d at 1327, 61

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USPQ2d at 1374; *CVI/Beta Ventures, Inc. v. Tura LP*, 112 F.3d 1146, 1159, 42 USPQ2d 1577, 1583 (Fed. Cir. 1997); *Southwall Techs. Corp. v. Cardinal IG Co.*, 54 F.3d 1570, 1576, 34 USPQ2d 1673, 1676 (Fed. Cir.), *cert. denied*, 116 S.Ct. 515 (1995).

Because Wouters does not disclose all of the elements of either claim 13 or claim 22, reversal of the improper §102(e) rejection of claims 13 and 22 by the Board is requested.

## **2. Dependent claims 14-16**

Claim 14 recites "said key code corresponds to a second function of a second electronic consumer device, as well as to said function of said electronic consumer device" (emphasis added). Wouters does not disclose one key code that corresponds to two separate functions of two different electronic consumer devices.

The Examiner has not stated that Wouters discloses a single key code that corresponds to two separate functions. Instead, the Examiner states, "A key code corresponding to a second and third key code is therefore transmitted based on the selected key." (Office Action, p. 4, lines 10-11) (emphasis added). In addition, the Examiner states that "Wouters teaches a key code generator (3) for generating key codes for controlling different function on various electrical appliances (col. 1 lines 24-26, col. 3 lines 21-35). The key codes for controlling the different devices inherently include a first and second key code." (Office Action, p. 2, lines 17-20) (emphasis added). However, claim 14 does not recite a first and second key code. Instead, claim 14 recites "said key code", "said function" and "a second function". The Examiner has not stated that Wouters discloses one key code that corresponds both to a function of an electronic consumer device as well as to a second function of a second electronic consumer device.

Claim 16 recites "said key code comprises a first binary number and a second binary number, said first binary number corresponding to said function,

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and said second binary number corresponding to said second function” (emphasis added). Wouters does not disclose a single key code that comprises two binary numbers, one corresponding to the function of one electronic consumer device, and the other corresponding to a second function of a second electronic consumer device.

The Examiner has not presented a *prima facie* argument of anticipation of claim 16 because the Examiner has not stated that Wouters discloses a key code comprising both (i) a first binary number that corresponds to a function of an electronic consumer device as well as (ii) a second binary number that corresponds to a second function of a second electronic consumer device. Instead, the Examiner simply states, “The data from the memory is inherently store as binary data. The key code therefore comprises binary data.” (Office Action, p. 4, lines 13-14). The Examiner does not mention a first binary number of a key code corresponding to a first function, as well as a second binary number of the same key code corresponding to a second function.

Claims 14-16 depend directly or indirectly from claim 13. In addition to the reasons explained above, dependent claims 14-16 are allowable for at least the same reasons for which claim 13 is allowable. Reversal of the improper §102(e) rejection of claims 14-16 by the Board is requested.

### **3. Dependent claim 24**

Claim 24 recites that the means of claim 22 is a microcontroller. The means of claim 22 is a “means for receiving a key code from said RF receiver”. The Examiner states that Wouters discloses “a microcontroller in the form of a microprocessor for receiving the key code (col. 4 lines 52-55)” (Office Action, p. 5, lines 1-2). The passage of Wouters cited by the Examiner, however, does not disclose a microprocessor for receiving a key code from an RF receiver.

The remote control unit disclosed in the passage cited by the Examiner does not include an RF receiver. Therefore, the central processing unit (CPU) that is inside remote control unit 3 of Wouters does not receive a key code from

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any RF receiver. Instead, Wouters discloses that the CPU determines which code needs transmitting based on which key is tapped by the user. (No keypad is included in the devices in room 2 of Wouters.) Wouters explains:

"In this case the user taps a key, the CPU (Central processing unit) inside the remote control determines which code (corresponding to the tapped key) needs transmitting (by IR or RF) and fetches the required data from its memory which comprises a data base or other means in which tapped codes are linked to data to be transmitted" (Wouters, col. 4, lines 57-62) (emphasis added).

Thus, Wouters does not disclose a microcontroller that receives a key code from an RF receiver.

Claim 24 depends from claim 22. In addition to the reasons explained above, dependent claim 24 is allowable for at least the same reasons for which claim 22 is allowable. Reversal of the § 102(e) rejection and allowance of claim 24 are requested.

#### **4. Independent claim 19**

Claim 19 recites, "said codeset including said first key code and said second key code, wherein said first key code corresponds to a selected function of a first electronic consumer device, and wherein said second key code corresponds to said selected function of a second electronic consumer device" (emphasis added). Wouters does not form the basis for a valid rejection under §102(e) because Wouters does not disclose a codeset that includes two key codes: one key code corresponding to a function of one electronic consumer device, and the other key code corresponding to the same function ("said selected function") of another electronic consumer device.

The Examiner has not presented a *prima facie* argument of anticipation of claim 19 because the Examiner has not stated that Wouters discloses the two recited key codes that correspond to the same function on different electronic consumer devices. Nor has the Examiner stated that Wouters discloses that

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those two key codes are included in a codeset stored on a key code generator device. In fact, Wouters does not mention key codes that correspond to the same function on separate electronic consumer devices.

Because Wouters does not disclose all of the elements of claim 19, reversal of the improper §102(e) rejection of claim 19 by the Board is requested.

#### **5. Independent claim 25**

Claim 25 recites, "receiving a keystroke indicator signal from a remote control device; . . . transmitting said key code signal from said key code generator device to said remote control device, wherein said remote control device transmits said key code signal to an electronic consumer device." (emphasis added). Wouters does not form the basis for a valid rejection of claim 25 under § 102(e) because Wouters does not disclose (i) receiving a keystroke indicator signal from a remote control device, (ii) transmitting a key code signal to the remote control device, and then (iii) transmitting the key code signal from the remote control device to an electronic consumer device.

The Examiner has not stated a *prima facie* case of anticipation because that Examiner has not alleged that Wouters discloses (i) receiving a signal from a remote control device, (ii) transmitting a second signal to the remote control device, and (iii) transmitting a third signal from the remote control device. Instead, the Examiner states that Wouters discloses:

"receiving a key stroke indicator signal (5) from a remote control (3) and the key code indicator signal is used by key code generator 8 to generate a key code (col. 3 lines 21-30); modulating the key code signal unto a carrier and transmitting the key code to the remote control (12) (col. 4 lines 28-33) and the remote control transmit the key code to the electronic device (col. 3 lines 31-34). Wouters et al. teaches the key code receive by the remote control is demodulated, decoded and transmitted to the appliance (col. 4 lines 25-37)." (Office Action, p. 5, lines 3-9) (emphasis added)

The Examiner argues that the recited "keystroke indicator signal" is disclosed by infrared signal 5 of Wouters. Moreover, the Examiner argues that the recited

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“remote control device” is infrared remote control unit 3 of Wouters. But then the Examiner improperly argues that the item labeled 12 in room 2 of Wouters is also the recited remote control device. This is improper. The Examiner has engaged in improper claim construction by arguing (i) that the recited remote control device from which a keystroke indicator signal is received is disclosed by item 3 in room 1 of Wouters for purposes of one claim limitation, and (ii) that the same recited remote control device is disclosed by item 12 in room 2 of Wouters for purposes of another limitation of the same claim. Alternatively, the Examiner is arguing that the recited remote control device is in two rooms of Wouters at the same time. Therefore, Wouters does not disclose the recited remote control device from which a first signal is received and to which a second signal is transmitted.

An additional reason why the Examiner’s argument fails is that Wouters does not disclose that item 12 in figure 1 is a remote control device. The reference numeral 12 does not appear at all in the specification of Wouters.

Because Wouters does not disclose all of the elements of claim 25, reversal of the improper §102(e) rejection of claim 25 by the Board is requested.

#### **6. Dependent claim 26**

Claim 26 recites, “wherein said codeset is not stored on said remote control device”. The Examiner states that infrared remote control unit 3 of Wouters discloses the recited “remote control device”. (Office Action, p. 5, line 4) The Examiner also states, “The key code is therefore not stored in the memory of the remote control” (Office Action, p. 5, lines 9-10). First, the Examiner has not stated a *prima facie* case of anticipation of claim 26 because claim 26 does not recite “wherein the key code is not stored on said remote control device”. Second, Wouters does not disclose that a codeset is not stored on infrared remote control unit 3. In fact, Wouters suggests the contrary:

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"In this system a remote control unit is used which comprises both an IR transmitter and an antenna for transmission of RF signals. In this case the user taps a key, the CPU (Central processing unit) inside the remote control determines which code (corresponding to the tapped key) needs transmitting (by IR or RF) and fetches the required data from its memory which comprises a data base or other means in which tapped codes are linked to data to be transmitted." (Wouters, col. 4, lines 54-62) (emphasis added).

Third, dependent claim 26 is allowable for at least the same reasons for which claim 25 is allowable because claim 26 depends from claim 25. Reversal of the improper §102(e) rejection of claim 26 by the Board is requested.

**B. Claims 1, 3-4 and 9 (2nd ground of rejection)**

Claims 1, 3-4 and 9 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Pope (USP 5,963,624) in view of McNair et al. (USP 5,595,342) (Office Action, p. 6, lines 1-2). To establish a *prima facie* case of obviousness, the Examiner must demonstrate that "the reference (or references when combined) must teach or suggest all the claimed limitations." MPEP § 2142.

**1. Independent claim 1**

Claim 1 recites, "(a) receiving a keystroke indicator signal from a remote control device; (b) generating a key code within a key code generator device . . . generating a key code signal". The combination of Pope and McNair does not form the basis for a valid rejection of claim 1 under § 103(a) because the references when combined do not teach (i) generating a key code within a key code generator device, (ii) a keystroke indicator signal as well as a key code signal, or (iii) modulating a key code.



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(i) **Neither Pope nor McNair teaches generating a key code within a key code generator device.**

The Examiner states that “Pope teaches receiving a keystroke indicator signal which contains an indication of a key on the remote control device 10 that was pressed (col. 2 lines 61-col. 3 line 19), generating a key code (codes for communicating the control function to the appliances) within the code generator 12 ...” (Office Action, p. 6, lines 3-6) (emphasis added). Pope does not, however, teach generating a key code within base unit 12. The appliance control code that is transmitted by base unit 12 of Pope is not generated within base unit 12. Instead, base unit 12 receives the appliance control codes from handset 10/50. In Pope, a digital cordless telephone handset 10/50 is used as a universal remote control device to control electrical appliances. Pope explains:

“The present invention uses a digital cordless telephone handset to store a variety of appliance control codes. These appliance control codes can be transmitted to a base unit. The base unit can translate the appliance control codes to control signals such as infrared control signals, to control an electrical appliance” (Pope, col. 1, lines 31-36) (emphasis added). See *also* Pope, col. 2, lines 48-52 and 63-65.

The appliance control codes are not generated within the base unit 12 of Pope. Instead, the appliance control codes are transmitted from the handset 10/50 to the base unit 12, where they are translated to control signals. Base unit 12 of Pope does not receive a keystroke indicator and then generate a key code. Thus, Pope does not teach the recited “receiving a keystroke indicator signal from a remote control device” (emphasis added). Pope states, “Once an appliance control code is received by the base unit, the base unit will know to transfer the control code to an appliance” (Pope, col. 4, lines 49-51) (emphasis added). Thus, in Pope, an appliance control code is received by base unit 12 and is then transferred to an appliance; the appliance control code is not generated within base unit 12.

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**(ii) Pope and McNair do not teach both a keystroke indicator signal and a key code signal.**

The Examiner states that "Pope teaches receiving a keystroke indicator signal which contains an indication of a key on the remote control device 10 that was pressed (col. 2 lines 61-col. 3 line 19), . . ." (Office Action, p. 6, lines 3-6). Nowhere, however, does Pope teach a keystroke indicator signal in the passage cited by the Examiner, which is reproduced below in its entirety:

"Keypad 30 includes the numbers 1-9, the "star" and the "pound" key. Additionally, "up arrow" key 30a and "down arrow" key 30b can be used to scroll through a menu. A "transmit" key 30c can be used to transmit the appliance control code once the appliance control has been selected. In one embodiment, the user gets into the menu by pressing an "up arrow" or a "down arrow" key. Alternately a "menu" button (not shown) is used. The keys for numbers 1-9 can have different meanings once the user is in the menu. Menu functions can be printed above the normal telephone control keys. FIG. 1 shows compact disc, television, cable and AC signal control menu-function buttons. The setup menu can be entered, one of these buttons pressed, and then using the up and down arrows, the specific controls for a given electrical appliance can be scrolled through. The different appliance controls can be listed in the order of frequency of use. For example, the "mute" function could be the first function listed in each menu selection.

Alternately, individual functions can be mapped with the associated buttons of the keypad, and a display 32 need not be used. Buttons similar to a "shift," "alt," and "control" on a normal computer keypad can be used to change the meanings of buttons "0" to "9," "star," and "pound." The different meanings associated with different buttons can be printed in different colors, which are the same colors of the associated buttons "shift," "alt," or "control." (Pope, col. 2, line 61 – col. 3, line 19) (emphasis added)

Thus, the passage of Pope above teaches appliance controls and appliance control codes but does not teach a keystroke indicator signal as the Examiner maintains.

Moreover, it is improper to construe the appliance control codes of Pope to teach both a keystroke indicator signal and a key code signal. According to the tenets of claim differentiation, a "keystroke indicator signal" cannot be

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interpreted to be the same as a “key code signal”. Such a claim interpretation is presumptively unreasonable. See, e.g., Karlin Tech. Inc. v. Surgical Dynamics Inc., 177 F.3d 968, 50 USPQ2d 1465, 1468 (Fed. Cir. 1999). In addition, such a claim interpretation would render claim 1 internally inconsistent because “keystroke indicator/key code” information that was already received by the key code generator device would later be generated by the key code generator device. Thus, Pope does not teach both a keystroke indicator and a key code. The handset 10/50 of Pope transmits an appliance control code and not a keystroke indicator.

**(iii) Neither Pope nor McNair teaches modulating a key code.**

The Examiner admits that Pope is silent on teaching modulating a key code onto a carrier signal. (Office Action, p. 6, line 7) Moreover, McNair does not teach modulating a key code. McNair does not teach a key code. And the Examiner does not state that McNair teaches modulating a key code onto a carrier signal. Instead, the Examiner states that McNair teaches “the control signal is modulated” (Office Action, p. 6, line 8). This is insufficient to establish a *prima facie* case of obviousness.

Moreover, there would be no motivation to combine McNair with Pope even if McNair did disclose a limitation of claim 1 (which it does not). McNair is directed to a control system for a gas-fired, central heating system and does not concern key code signals for electronic consumer devices.

Therefore, Pope and McNair do not form the basis for a valid rejection under § 103(a) because neither Pope nor McNair teaches (i) generating a key code within a key code generator device, (ii) a keystroke indicator signal as well as a key code signal, or (iii) modulating a key code. In addition, there is no motivation to combine McNair with Pope to arrive at all of the limitations of claim 1. For these reasons, reconsideration of the § 103(a) rejection and allowance of claim 1 are requested.

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**2. Dependent claims 3-4 and 9**

Claim 9 recites, "said key code generated in (b) is part of a codeset, and wherein said remote control device does not store said codeset" (emphasis added). With respect to base claim 1, the Examiner states that "Pope teaches receiving a keystroke indicator signal which contains an indication of a key on the remote control device 10" (Office Action, p. 6, lines 3-4) (emphasis added). Thus, the Examiner considers that handset 10 of Pope teaches the remote control device recited in claim 9. The Examiner then states, "The code generated by the code generator is not store in the remote control because it is transmitted to the appliances" (Office Action, p. 6, lines 18-19). This incorrectly characterizes the teachings of Pope. The appliance control codes of Pope are indeed stored on handset 10 and are transmitted from handset 10 to base unit 12. Pope explains:

"The present invention uses a digital cordless telephone handset to store a variety of appliance control codes. These appliance control codes can be transmitted to a base unit. The base unit can translate the appliance control codes to control signals such as infrared control signals, to control an electrical appliance" (Pope, col. 1, lines 31-36) (emphasis added)

"The cordless digital telephone handset includes a memory 66 . . . used to store the appliance control codes. Preferably, the appliance control codes can be transmitted to the base unit 12 . . ." (Pope, col. 2, lines 48-52) (emphasis added).

"Fig. 2 is a diagram of a handset 50 of the present invention. . . . The appliance control codes are stored in a memory 66" (Pope, col. 4, lines 17-28) (emphasis added).

Base unit 12 does not generate the appliance control codes. Instead, base unit 12 receives the appliance control codes, which were stored in memory 66 of handset 10, and then translates the appliance control codes into infrared control signals. Thus, Pope does not teach that handset 10 does not store a codeset.

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Claims 3-4 and 9 depend from claim 1. In addition to the reasons explained above, dependent claims 3-4 and 9 are allowable for at least the same reason for which claim 1 is allowable. Reversal of the § 103(a) rejection and allowance of claims 3-4 and 9 by the Board is requested.

**C. Dependent claim 2 (3rd ground of rejection)**

Claim 2 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Pope in view of McNair and further in view of Goldstein (USP 5,410,326) (Office Action, p. 7, lines 1-2).

Claim 2 includes the following limitations of base claim 1, "(a) receiving a keystroke indicator signal from a remote control device; (b) generating a key code within a key code generator device . . . ." Claim 2 also recites "wherein said key code signal is transmitted in (d) from said key code generator device to said remote control device".

None of Pope, McNair or Goldstein teaches either (i) generating a key code within a key code generator device or (ii) both a keystroke indicator signal and a key code signal. Moreover, the Examiner seems to admit that Pope and McNair are silent on teaching that the key code generator transmits the key code signal to the remote control device. (Office Action, p. 7, lines 4-10). And Goldstein does not teach this limitation.

None of Pope, McNair or Goldstein teaches transmitting a key code signal from the key code generator device back to the remote control device. The fact that Goldstein may teach sending an IR code or an entire codeset from a cable television converter box to a remote control device to update the remote control device does not teach transmitting a key code signal from a key code generator device back to the remote control device. Indeed, Goldstein does not teach transmitting a key code signal as opposed to a key code or a codeset. The cable television converter box of Goldstein does not teach a key code generator because the cable television converter box of Goldstein receives complete codesets from a remote database or is loaded with complete codesets.

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(Goldstein, col. 15, lines 20-68; col. 17, lines 62-67). The television converter box of Goldstein is not a key code generator because the GLUE logic 95 in the universal remote control 5, as opposed to the television converter box, generates the IR sequences from the codes. Goldstein states:

“The glue logic 95 will supply the IR sequences from codes, stored in the RAM 90, upon command of the user. . . . These codes describe carrier frequencies, pulse widths and pulse duration to be generated to the glue logic 95 for producing infrared pulses from the infrared diode 97” (Goldstein, col. 13, lines 23-33) (emphasis added).

Thus, Goldstein does not teach transmitting a key code signal from a key code generator.

In addition, to establish obviousness, there must be “something in the prior art as a whole to suggest the desirability, and thus the obviousness of making the combination.” *Interconnect Planning Corp. v. Feil*, 774 F.2d 1132, 1143, 227 USPQ 543, 551 (Fed. Cir. 1985) quoting *Lindemann Maschinenfabrik GMBH v. American Hoist Derrick Co.*, 730 F. 2d 1452, 1462, 221 USPQ 481, 488 (Fed. Cir. 1984). The motivation posited by the Examiner to combine Goldstein and Pope is non-existent. The Examiner states that Goldstein teaches “a cable box transmitting key codes to the remote control in order to update the remote control with new control codes.” (Office Action, p. 7, lines 11-13) (emphasis added). But there would be no motivation to update the remote control device of claim 2 with new codesets, as allegedly taught by Goldstein, because claim 2 does not recite that any key code or codeset is ever stored on the remote control device. Claim 2 recites transmitting a key code signal to the remote control device and does not recite transmitting a codeset to the remote control device. The motivation proposed by the Examiner would only result in a combination wherein codesets, or at least key codes, are stored on a remote control device.

The combination of Pope, McNair and Goldstein does not form the basis for a valid rejection of claim 2 under § 103(a) because the combination does not teach (i) generating a key code within a key code generator device, (ii) both a

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keystroke indicator signal and a key code signal, or (iii) transmitting a key code signal from the key code generator device back to the remote control device. Furthermore, there is no motivation to combine the teachings of Goldstein with the teachings of Pope and McNair in such a way as to obtain all of the limitations of claim 2. Therefore, reversal of the improper § 103(a) rejection of claim 2 by the Board is requested.

**D. Dependent claims 5 and 10 (4th ground of rejection)**

Claims 5 and 10 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Pope in view of McNair and further in view of Teskey (USP 6,747,568) (Office Action, p. 7, lines 14-16).

Claims 5 and 10 depend directly or indirectly from claim 1 and include the following limitations of claim 1: "(a) receiving a keystroke indicator signal from a remote control device; (b) generating a key code within a key code generator device . . . ." None of Pope, McNair or Teskey teaches (i) generating a key code within a key code generator device or (ii) both a keystroke indicator signal and a key code signal.

In addition, claim 10 recites that "said timing information describes a digital one and a digital zero". The Examiner admits that Pope "is silent on teaching the key code comprises timing information defining the binary number (ones and zeros) in modulated." But the Examiner states that Teskey "teaches the format of the remote control signal having the necessary timing and modulation information (col. line 60-col. 4 line 8)" (Office Action, p. 8, lines 7-10). Teskey does not, however, teach "the necessary timing and modulation information." The passage of Teskey cited by the Examiner does not teach timing information that defines a digital one or a digital zero. In fact, Teskey does not mention a digital one, a digital zero or any type of mark/space representation.

The combination of Pope, McNair and Teskey does not form the basis for a valid rejection of either claim 5 or claim 10 under § 103(a) because the combination does not teach (i) generating a key code within a key code

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generator device or (ii) both a keystroke indicator signal and a key code signal. And with regard to claim 10, Teskey does not teach timing information that defines a digital one or a digital zero. Therefore, reversal of the improper § 103(a) rejection of claims 5 and 10 by the Board is requested.

**E. Dependent claim 6 (5th ground of rejection)**

Claim 6 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Pope in view of McNair and further in view of August (USP 5,671,267) (Office Action, p. 8, lines 16-18).

Claim 6 includes the following limitations of base claim 1, "(a) receiving a keystroke indicator signal from a remote control device; (b) generating a key code within a key code generator device . . . ." None of Pope, McNair or August teaches (i) generating a key code within a key code generator device or (ii) both a keystroke indicator signal and a key code signal.

In addition, claim 6 recites, "(e) pressing a power-on key of said remote control device causing said remote control device to transmit said keystroke indicator signal that is received in (a), wherein said key code signal transmitted in (d) is received onto an electronic consumer device, and wherein said pressing in (e) causes said electronic consumer device to turn on" (emphasis added). The Examiner states that Pope "is not explicit in teaching transmitting a keystroke indicator signal that cause the appliance to turn on. One skill in the art recognizes that a remote control is generally use in turning an appliance on/off and is further evidence by August et al. (col. 8 lines 3-5)" (Office Action, p. 8, line 20 – p. 9, line 2). The Examiner has not presented a *prima facie* case of obviousness because the Examiner has not stated that August teaches a remote control device transmitting a keystroke indicator signal. Indeed, August does not teach a keystroke indicator signal. The passage of August cited by the Examiner teaches handset unit 10 of August using a key code signal, as opposed to a keystroke indicator signal, to turn a television set on and off. Interpreting a



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“keystroke indicator signal” to be the same as a “key code signal” would be contrary to the tenets of claim differentiation.

The combination of Pope, McNair and August does not teach (i) receiving a keystroke indicator signal from a remote control device, (ii) generating a key code within a key code generator, and (iii) transmitting a key code signal from the key code generator to an electronic consumer device to turn on the electronic consumer device. Nor does the combination teach both a keystroke indicator signal and a key code signal. Reversal of the improper § 103(a) rejection of claim 6 by the Board is requested.

**F. Dependent claim 7 (6th ground of rejection)**

Claim 7 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Pope in view of McNair and further in view of Wouters (Office Action, p. 9, lines 8-10).

Claim 7 includes the following limitations of base claim 1, “(a) receiving a keystroke indicator signal from a remote control device; (b) generating a key code within a key code generator device . . . .” The combination of Pope, McNair and Wouters teaches neither (i) generating a key code within a key code generator device nor (ii) both a keystroke indicator signal and a key code signal.

In addition, claim 7 recites “wherein said key code signal is received by said remote control device”. The Examiner states that “Pope teaches the remote control receiving key code signals (infrared control signal) from a controller (col. 4 lines 52-56)” (Office Action, p. 9, lines 11-12). The Examiner has not presented a *prima facie* case of obviousness because the Examiner has not stated that Pope teaches a remote control device that receives a key code signal from a key code generator device that generated the key code. The passage of Pope cited by the Examiner teaches receiving an infrared signal from a controller, such as a television remote control. The cited passage does not teach receiving a key code signal from a key code generator device. Interpreting a “remote control

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device” to be the same as a “key code generator device” recited in the same claim would be contrary to the tenets of claim differentiation.

The combination of Pope, McNair and Wouters does not form the basis for a valid rejection of claim 7 under § 103(a) because the combination does not teach any of (i) generating a key code within a key code generator device, (ii) both a keystroke indicator signal and a key code signal, or (iii) receiving a key code signal from the key code generator device back on the remote control device. Therefore, reversal of the improper § 103(a) rejection of claim 7 by the Board is requested.

**G. Dependent claim 8 (7th ground of rejection)**

Claim 8 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Pope in view of McNair and in view of Wouters and further in view of August (Office Action, p. 10, lines 1-3).

The four-way combination of Pope, McNair, Wouters and August does not form the basis for a valid rejection of claim 8 under § 103(a) for the same reasons explained above with relation to claims 1 and 7. The 4-way combination does not teach any of (i) receiving a key code signal from the key code generator device back on the remote control device, (ii) both a keystroke indicator signal and a key code signal, or (iii) generating a key code within a key code generator device.

Furthermore, it is impermissible to “pick and choose” individual elements among the references to recreate the claimed invention because “[o]ne cannot use hindsight reconstruction to pick and choose among isolated disclosures in the prior art to deprecate the claimed invention.” *In re Fritch*, 972 F.2d 1260, 1266, 23 USPQ2d 1780, 1784 (Fed. Cir. 1992) *citing In re Fine*, 837 F.2d 1071, 1075, 5 USPQ2d 1596, 1600 (Fed. Cir. 1988). There is no motivation to combine the teachings of the four-way combination in such a way as to obtain all of the limitations of claim 8. For these reasons, reversal of the improper § 103(a) rejection of claim 8 by the Board is requested.

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**H. Dependent claim 18 (8th ground of rejection)**

Claim 18 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Wouters in view of Teskey (Office Action, p. 10, lines 14-15).

The combination of Wouters and Teskey does not form the basis for a valid rejection of claim 18 under § 103(a) for the same reasons explained above with relation to claim 13. Neither Wouters nor Teskey discloses a device with a keypad that both transmits an IR signal and receives an RF signal.

Because combination of Wouters and Teskey does not disclose all of the elements of claim 18, reversal of the improper § 103(a) rejection of claim 18 by the Board is requested.

**I. Dependent claims 20-21 (9th ground of rejection)**

Claims 20-21 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Wouters in view of August (Office Action, p. 11, lines 6-7).

Both claim 20 and claim 21 depend from claim 19 and incorporate the limitations of claim 19. The combination of Wouters and August does not form the basis for a valid rejection of either claim 20 or claim 21 under § 103(a) for the same reasons explained above with relation to claim 19. Neither Wouters nor August discloses a codeset that includes two key codes: one key code corresponding to a function of one electronic consumer device, and the other key code corresponding to the same function of another electronic consumer device. The Examiner has not presented a *prima facie* argument of obviousness because the Examiner has not stated that the combination of Wouters and August discloses a codeset with two recited key codes that correspond to the same function on different electronic consumer devices. Neither Wouters nor August teaches the recited codeset with key codes that correspond to the same function on separate electronic consumer devices. August does not mention a codeset.

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Because combination of Wouters and August does not disclose a codeset with two key codes that correspond to the same function on two electronic consumer devices, reversal of the improper § 103(a) rejection of claims 20-21 by the Board is requested.

**J. Dependent claim 23 (10th ground of rejection)**

Claim 23 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Wouters in view of Pope (Office Action, p. 11, lines 18-19).

Claim 23 depends from claim 22 and incorporates the limitations of claim 22. The combination of Wouters and Pope does not form the basis for a valid rejection of claim 23 under § 103(a) for the same reasons explained above with relation to claim 22. Neither Wouters nor Pope teaches a device with a keypad, a radio frequency receiver and an infrared transmitter.

The RF receiver, IR transmitter and keypad of Wouters are not on the same device. The remote control unit 3 of Wouters does not include an RF receiver. Pope does not teach an RF receiver. And Pope even teaches against including an IR transmitter on the handset. Pope explains:

"One advantage of having the infrared transmitter attached to the base unit 12 is that the base unit 12 can be typically powered by house current. Since no battery is used, the infrared transmitter can draw more power than is used in battery-type systems. For example, if a button is continuously pressed in a battery-type system, in order to conserve power the infrared signal is not continuously sent, but is sent intermittently. The base unit 12 connected to AC power need not be limited in this fashion. Additionally, it is also possible to have the base unit 12 supply a greater amount of power to the infrared transmitter to transmit a greater amount of infrared energy. In this manner, it may be possible for the infrared bulb to not be focused directly towards the appliance" (Pope, col. 3, lines 46-60) (emphasis added).

Thus, Pope teaches away from the limitation of claim 23 because "it suggests that the line of development flow from the reference's disclosure is unlikely to be

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productive of the result sought by the applicant." *In re Gurley*, 27 F.3d 551, 553, 31 USPQ2d 1130, 1131 (Fed. Cir. 1994).

Because the combination of Wouters and Pope does not disclose all of the limitations of claim 23 as explained above with relation to claim 22, reversal of the improper §103(a) rejection of claim 23 by the Board is requested.

### VIII. CONCLUSION

The Examiner has not established a prima facie case of anticipation or obviousness. With regard to independent claims 13 and 22, Wouters does not disclose a device with a keypad that both receives a signal within a radio frequency band and transmits a signal within an infrared frequency band. With regard to independent claim 19, Wouters does not disclose a codeset that includes two key codes: one key code corresponding to a function of one electronic consumer device and the other key code corresponding to the same function of another electronic consumer device. With regard to independent claim 25, Wouters does not disclose (i) receiving a keystroke indicator signal from a remote control device, (ii) transmitting a key code signal to the remote control device, and then (iii) transmitting the key code signal from the remote control device to an electronic consumer device. With regard to independent claim 1, the combination of Pope and McNair does not teach (i) generating a key code within a key code generator device, (ii) a key stroke indicator signal as well as a key code signal, or (iii) modulating a key code. The Board is requested to reverse the §102 and §103 rejections of claims 1-10, 13-16 and 18-26.

I hereby certify that this correspondence is being deposited with the United States Postal Service as First Class Mail in an envelope addressed to: Mail Stop Appeal Brief - Patents, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

By   
Darien K. Wallace

Date of Deposit: July 23, 2007

Respectfully submitted,



Darien K. Wallace  
Attorney for Appellant  
Reg. No. 53,736  
Customer No. 47,713

## IX. CLAIMS APPENDIX

1. (original): A method comprising:
  - (a) receiving a keystroke indicator signal from a remote control device;
  - (b) generating a key code within a key code generator device;
  - (c) modulating said key code onto a carrier signal, thereby generating a key code signal; and
  - (d) transmitting said key code signal from said key code generator device.
2. (original): The method of Claim 1, wherein said key code signal is transmitted in (d) from said key code generator device to said remote control device.
3. (original): The method of Claim 1, wherein said key code signal is transmitted in (d) from said key code generator device to an electronic consumer device.
4. (original): The method of Claim 1, wherein said key code consists of a binary number.
5. (original): The method of Claim 1, wherein said key code comprises a binary number and timing information, and wherein said timing information defines how said binary number is modulated in (c) onto said carrier signal.
6. (original): The method of Claim 1, further comprising:
  - (e) pressing a power-on key of said remote control device causing said remote control device to transmit said keystroke indicator signal that is received in (a), wherein said key code signal transmitted in (d) is received onto an electronic consumer device, and wherein said pressing in (e) causes said electronic consumer device to turn on.

7. (original): The method of Claim 1, wherein said carrier signal is in a radio frequency band, wherein said key code signal is received by said remote control device, and wherein said method further comprises:

(e) modulating said key code onto a second carrier signal, thereby generating a second key code signal, said modulating being performed on said remote control device wherein said second carrier signal is in an infrared frequency band; and

(f) transmitting said second key code signal from said remote control device to an electronic consumer device.

8. (original): The method of Claim 7, further comprising:

(g) pressing a power-on key of said remote control device causing said remote control device to transmit said keystroke indicator signal that is received in (a), wherein the pressing in (g) causes said electronic consumer device to turn on.

9. (original): The method of Claim 1, wherein said key code generated in (b) is part of a codeset, and wherein said remote control device does not store said codeset.

10. (original): The method of Claim 9, wherein said codeset comprises timing information and a plurality of key codes, and wherein said timing information describes a digital one and a digital zero.

11. (previously presented): A method comprising:

(a) receiving a keystroke indicator signal from a remote control device;

(b) generating a key code within a key code generator device;

(c) modulating said key code onto a carrier signal, thereby generating a key code signal; and

(d) transmitting said key code signal from said key code generator device, wherein a codeset comprises a plurality of key codes, each one of said plurality

of key codes corresponding to a function of an electronic consumer device, and wherein no more than a single one of said plurality of key codes is present on said remote control device at any given time.

12. (original): The method of Claim 11, wherein said function of said electronic consumer device is taken from the group consisting of: power on, power off, channel advance, channel back, volume up, volume down, cursor up, cursor down, cursor right, cursor left, select, play, record, stop, forward, back and pause.

13. (previously presented): A remote control device comprising:

    a receiver that receives a first key code signal, wherein said first key code signal is generated by modulating a key code onto a first carrier signal, said first carrier signal falling within a radio frequency band;

    a transmitter that transmits a second key code signal, wherein said second key code signal is generated by modulating said key code onto a second carrier signal, said second carrier signal falling within an infrared frequency band;  
and

    a keypad that includes a key that corresponds to said key code, wherein said key code corresponds to a function of an electronic consumer device.

14. (original): The device of Claim 13, wherein said key code corresponds to a second function of a second electronic consumer device, as well as to said function of said electronic consumer device.

15. (original): The device of Claim 14, wherein said transmitter transmits a third key code signal, and wherein said third key code signal is generated by modulating said key code onto a third carrier signal.

16. (original): The device of Claim 14, wherein said key code comprises a first binary number and a second binary number, said first binary number



corresponding to said function, and said second binary number corresponding to said second function.

17. (previously presented): A device comprising:

a receiver that receives a first key code signal, wherein said first key code signal is generated by modulating a key code onto a first carrier signal, said first carrier signal falling within a radio frequency band;

a transmitter that transmits a second key code signal, wherein said second key code signal is generated by modulating said key code onto a second carrier signal, said second carrier signal falling within an infrared frequency band; and

a keypad that includes a key that corresponds to said key code, wherein said key code corresponds to a function of an electronic consumer device, wherein said keypad includes a second key that corresponds to a second key code, wherein a third key code signal is generated by modulating said second key code onto a third carrier signal, wherein said third key code signal is received by said receiver, and wherein both said first key code and said second key code are not both stored in said device at the same time.

18. (original): The device of Claim 13, wherein a codeset comprises timing information and a plurality of key codes, wherein each of said plurality of key codes corresponds to a different function of said electronic consumer device, wherein said key code is a binary number, and wherein said timing information defines how said binary number is modulated onto said first carrier signal.

19. (previously presented): A system comprising:

a key code generator device that generates a first key code and a second key code, wherein a codeset is stored on said key code generator device, said codeset including said first key code and said second key code, wherein said first key code corresponds to a selected function of a first electronic consumer

device, and wherein said second key code corresponds to said selected function of a second electronic consumer device; and

means for relaying said first key code and said second key code from said key code generator device through a remote control device to said first electronic consumer device and to said second electronic consumer device without simultaneously storing both said first key code and said second key code on said remote control device.

20. (original): The system of Claim 19, wherein said selected function is taken from the group consisting of: power on, power off, channel advance, channel back, volume up, volume down, cursor up, cursor down, cursor right, cursor left, select, play, record, stop, forward, back and pause.

21. (original): The system of Claim 19, wherein said selected function is power on, and wherein said system automatically determines when said first electronic consumer device powers on.

22. (previously presented): A remote control device, comprising:

- a keypad;
- an RF receiver;
- an IR transmitter; and

means for receiving a key code from said RF receiver and for sending said key code to said IR transmitter such that said key code is modulated onto an IR carrier signal, said IR carrier signal with said key code modulated thereon being transmitted from said remote control device by said IR transmitter.

23. (original): The remote control device of Claim 22, wherein said key code is not stored on said remote control device immediately prior to said means receiving the key code.

24. (original): The remote control device of Claim 22, wherein said means is a microcontroller.

25. (previously presented): A method comprising:

- (a) receiving a keystroke indicator signal from a remote control device;
- (b) using said keystroke indicator signal to generate a key code, wherein a key code generator device generates said key code;
- (c) modulating said key code onto a carrier signal and thereby generating a key code signal; and
- (d) transmitting said key code signal from said key code generator device to said remote control device, wherein said remote control device transmits said key code signal to an electronic consumer device.

26. (previously presented): The method of Claim 25, wherein said key code generated in (b) is part of a codeset, and wherein said codeset is not stored on said remote control device.

## **X. EVIDENCE APPENDIX**

No evidence has been submitted pursuant to 37 C.F.R. §§ 1.130, 1.131 or 1.132. No affidavit or declaration has been submitted under § 1.130 to disqualify a commonly owned patent or a published application as prior art. No affidavit or declaration of a prior invention has been submitted under § 1.131. No affidavit or declaration traversing rejections or objections has been submitted under § 1.132. No such evidence was entered by the Examiner and relied upon by Appellants in this appeal.

In the rejections that are to be reviewed in this appeal, the Examiner has not relied upon any non-patent documents.

## **XI. RELATED PROCEEDINGS APPENDIX**

No decision has yet been rendered by a court or the Board in this or any related proceeding.



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**BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES**

Application Number: 10/737,029  
Filing Date: December 16, 2003  
Appellant(s): MUI, DANIEL SAUFU

\_\_\_\_\_  
Darien K. Wallace  
For Appellant

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**EXAMINER'S ANSWER**

This is in response to the appeal brief filed 7/26/2007 appealing from the Office action mailed 2/07/07.

**(1) Real Party in Interest**

A statement identifying by name the real party in interest is contained in the brief.

**(2) Related Appeals and Interferences**

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

**(3) Status of Claims**

The statement of the status of claims contained in the brief is correct.

**(4) Status of Amendments After Final**

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

**(5) Summary of Claimed Subject Matter**

The summary of claimed subject matter contained in the brief is correct.

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

**(6) Grounds of Rejection to be Reviewed on Appeal**

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

**(7) Claims Appendix**

The copy of the appealed claims contained in the Appendix to the brief is correct.

**(8) Evidence Relied Upon**

5595342

McNair et al.

01-1997

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6915109	Wouters et al.	07-2005
5963624	Pope	10-1999
5410326	Goldstein	04-1995
6747568	Teskey	6-2004
5671267	August et al.	09-1997

**(9) Grounds of Rejection**

The following ground(s) of rejection are applicable to the appealed claims:

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

- (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.
- (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claim 13-16, 19, 22, and 24-26 are rejected under 35 U.S.C. 102(e) as being anticipated by Wouters et al. US Patent 6915109.

Regarding claims 13 and 22, Wouters et al. teaches a remote control which includes the system of devices 1 and 2 (figure 1) comprising a receiver receiving a RF modulated remote control signal (col. 4 lines 25-28) and a transmitter transmitting an infrared modulated signal



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generated from the received RF signal (col. 4 lines 28-33). Wouters et al. also teaches the key code corresponding to the key of keypad is transmitted when the key is selected (col. 4 lines 4 lines 48-57).

Regarding claims 14-16, Wouters et al. teaches the key code corresponding to the key of keypad is transmitted when the key is selected (col. 4 lines 4 lines 48-57). A key code corresponding to a second and third key code is therefore transmitted based on the selected key. Wouters et al. teaches fetching the data from memory corresponding to the key code (col. 4 lines 55-58). The data from the memory is inherently store as binary data. The key code therefore comprises binary data.

Regarding claims 19, Wouters et al. teaches a key code generator (3) for generating key codes for controlling different function on various electrical appliances (col. 1 lines 24-26, col. 3 lines 21-35). The key codes for controlling the different devices inherently include a first and second key code. Wouters et al. teaches an antenna (9) for transmitting the key code from the key code generator to a remote control (12) and the remote control 12 transmit the key code to the selected appliances (col. 3 lines 31-34). Wouters et al. teaches the key code receive by the remote control is demodulated, decoded and transmitted to the appliance (col. 4 lines 25-37). The key code is therefore not stored in the memory of the remote control .

Regarding claim 24, Wouters teaches a radio receiver (13) that is a microcontroller for receiving the radio frequency signal (col. 3 lines 31-32).

Regarding claim 25, Wouters et al. teaches receiving a keystroke indicator signal (5) from a remote control (3) and the key code indicator signal is use by key code generator 8 to generate a key code (col. 3 lines 21-30);

modulating the key code signal unto a carrier and transmitting the key code to the remote control (12) (col. 4 lines 28-33) and the remote control transmit the key code to the electronic device (col. 3 lines 31-34). Wouters et al. teaches the key code receive by the remote control is demodulated, decoded and transmitted to the appliance (col. 4 lines 25-37).

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 3-4, 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pope US Patent 5963624 in view of McNair et al. US Patent 5595342.

Regarding claim 1, Pope teaches receiving a keystroke indicator signal which contains an indication of a key on the remote control device 10 that was pressed (col. 2 lines 61-col. 3 line 19), generating a key code (codes for communicating the control function to the appliances)

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within the code generator 12 and transmitting the key codes to the appliances (col. 3 lines 35-40). Pope is however silent on teaching modulating the key code onto a carrier signal. McNair et al. in an art related control system teaches the control signal is modulated and transmitted to the controlled apparatus as a conventional practice (col. 2 lines 61-65).

It would have been obvious to one of ordinary skill in the art to modulate the key code onto a carrier signal in Pope because modulation of the key code enables the key code signal to be transmitted wirelessly to the appliances and this also represents a conventional practice of providing means for wireless transmission from a remote control.

Regarding claim 3, Pope teaches the key code generator 12 transmitting key code signal (control codes) to the consumer devices (col. 3 lines 35-40).

Regarding claim 4, Pope teaches the key code is indicated by low and high (col. 3 lines 45-47) implying the key code signal include ones and zeroes.

Regarding claim 9, Pope teaches the code generated by the code generator 12 is transmitted to the appliances (col. 3 lines 36-40). The code generated by the code generator is not store in the remote control because it is transmitted to the appliances.

Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Pope US Patent 5963624 in view of McNair et al. US Patent 5595342 and further in view of Goldstein US Patent 5410326.

Regarding claim 2, Pope teaches the remote control receiving key code signals (infrared control signal) from a controller (col. 4 lines 52-56) but is silent on teaching the key code generator transmit key codes to the remote control device. Goldstein in an art related

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programmable remote control invention teaches a key code generator in the form of a cable box (cable box is considered a key code generator, see page 3 lines 4-5 of the applicant's specification) transmitting key codes to the remote control (col. 13 lines 50-57) in order to update the remote control with new control codes.

It would have been obvious to one of ordinary skill in the art for the key code generator to transmit the key code to the remote control in Pope in view of McNair et al. because this provides the means for updating the remote control with new codes.

Claims 5 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pope US Patent 5963624 in view of McNair et al. US Patent 5595342 and further in view of Teskey US Patent 6747568.

Regarding claim 5, Pope teaches generating a key code for controlling the consumer appliances (col. 3 lines 35-40) but is silent on teaching the key code comprises timing information defining the binary number is modulated. Teskey in an art related remote control system teaches the format of the remote control signal having the necessary timing and modulation information (col. 3 line 60-col. 4 line 8).

It would have been obvious to one of ordinary skill in the art for the key code to include comprises timing information defining the binary number is modulated in Pope in view of McNair because the timing information defining the binary number is modulated represent information regarding the format of the remote control signal that enables the decoding and demodulating of the receive key code signals.

Regarding claim 10, Pope teaches generating a key code for controlling the consumer appliances (col. 3 lines 35-40) but is silent on teaching the key code comprises timing

information defining the binary number (ones and zeroes) is modulated. Teskey in an art related remote control system teaches the format of the remote control signal having the necessary timing and modulation information (col. 3 line 60-col. 4 line 8).

It would have been obvious to one of ordinary skill in the art for the key code to include comprises timing information defining the binary number is modulated in Pope in view of McNair because the timing information defining the binary number is modulated represent information regarding the format of the remote control signal that enables the decoding and demodulating of the receive key code signals.

Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Pope US Patent 5963624 in view of McNair et al. US Patent 5595342 and further in view of August et al. US Patent 5671267.

Regarding claim 6, Pope teaches the use of the remote control to control the functions of the appliances (col. 2 line 61-col. 3 line 22) but is not explicit in teaching transmitting a keystroke indicator signal that cause the appliance to turn on. One skill in the art recognizes that a remote control is generally use in turning an appliance on/off and is further evidenced by August et al. (col. 8 lines 3-5).

It would have been obvious to one of ordinary skill in the art for the remote control to transmit a keystroke signal for turning the appliance on in Pope in view of McNair because Pope suggests the use of the remote control to control the functions of the appliances and one skill in the art recognizes that a remote control is generally use in turning an appliance on/off and is further evidenced by August et al.

Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Pope US Patent 5963624 in view of McNair et al. US Patent 5595342 and further in view of Wouster et al. US Patent 6915109

Regarding claim 7, Pope teaches the remote control receiving key code signals (infrared control signal) from a controller (col. 4 lines 52-56) and the remote control transmits control signal to the appliances (figure 1) but is silent on teaching modulating the key code onto carrier signal that is in the infrared frequency band. Wouters et al. in an art related remote control invention teaches a remote control receiving a RF modulated remote control signal (col. 4 lines 25-28) and a transmitter transmitting an infrared modulated signal generated from the received RF signal (col. 4 lines 28-33).

It would have been obvious to one of ordinary skill in the art to modulate the key code onto carrier signal that is in the infrared frequency band in Pope in view of McNair because infrared signal represents an alternative to radio signal used in the transmission of remote control signal.

Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Pope US Patent 5963624 in view of McNair et al. US Patent 5595342 in view of Wouster et al. US Patent 6915109 and further in view of August et al. US Patent 5671267.

Regarding claim 8, Pope teaches the use of the remote control to control the functions of the appliances (col. 2 line 61-col. 3 line 22) but is not explicit in teaching transmitting a keystroke indicator signal that cause the appliance to turn on. One skill in the art recognizes that

a remote control is generally use in turning an appliance on/off and is further evidenced by August et al. (col. 8 lines 3-5).

It would have been obvious to one of ordinary skill in the art for the remote control to transmit a keystroke signal for turning the appliance on in Pope in view of McNair in view of Yamaguchi because Pope suggests the use of the remote control to control the functions of the appliances and one skilled in the art recognizes that a remote control is generally use in turning an appliance on/off and is further evidenced by August et al.

Claim 18 is rejected under 35 U.S.C. 103(a) as being unpatentable over Wouters et al. US Patent 6915109 in view of Teskey US Patent 6747568.

Regarding claim 18, Wouters et al. teaches the remote control transmit command codes to perform various functions (col. 4 lines 4 lines 48-57). Wouters is silent on teaching the key code comprises timing information defining the binary number is modulated. Teskey in an art related remote control system teaches the format of the remote control signal having the necessary timing and modulation information (col. 3 line 60-col. 4 line 8).

It would have been obvious to one of ordinary skill in the art for the key code to include timing information defining the binary number is modulated in Wouters et al. because the timing information defining the binary number represents information regarding the format of the remote control signal that enables the decoding and demodulating of the receive key code signals.

Claims 20-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wouters et al. US Patent 6915109 in view of August et al. US Patent 5671267.

Regarding claims 20-21, Wouters teaches the use of the remote control to control the functions of the appliances (col. 3 lines 31-35) but is not explicit in teaching transmitting a keystroke indicator signal that cause the appliance to turn on. One skill in the art recognizes that a remote control is generally use in turning an appliance on/off and is further evidenced by August et al. (col. 8 lines 3-5).

It would have been obvious to one of ordinary skill in the art for the remote control to transmit a keystroke signal for turning the appliance on in Wouters because Wouters suggests the use of the remote control to control the functions of the appliances and one skill in the art recognizes that a remote control is generally use in turning an appliance on/off and is further evidenced by August et al.

Claim 23 is rejected under 35 U.S.C. 103(a) as being unpatentable over Wouters et al. US Patent 6915109 in view of Pope US Patent 5963624.

Regarding claim 23, Wouters teaches transmitting key codes to remote control (see response to claim 13) but is not explicit in teaching the key code is not store on the remote control prior to the remote control receiving the key code. Pope in an art related remote control teaches the remote control receiving control codes updates (col. 4 lines 52-60). The receipt of the code update by the remote control implies that the code was not previously stored in the remote control prior transmitting the updates to the remote controller.

It would have been obvious to one of ordinary skill in the art for the key code is not store on the remote control prior to the remote control receiving the key code because the key codes



transmitted to the remote control is used as a means of programming the remote control with new codes.

**(10) Response to Argument**

Appellant argues on page 11 that the reference of Wouters fails to teach a single device with a keypad that both receives a RF signal and transmit an IR signal. It is the examiner position that the claims recites no limitation of a single device, the limitation of a remote control device is only recited in the preamble. The preamble is generally not accorded any patentable weight where it merely recites the purpose of a process or the intended use of a structure, and where the body of the claim does not depend on the preamble for completeness but, instead, the process steps or structural limitations are able to stand alone. See *In re Hirao*, 535 F.2d 67, 190 USPQ 15 (CCPA 1976) and *Kropa v. Robie*, 187 F.2d 150, 152, 88 USPQ 478, 481 (CCPA 1951).

Appellant argues on page 11-12 that the system of devices as disclose by the reference of Wouters is insufficient to allege a prima facie case of anticipation. It is the examiner's position that a system and device are not mutually exclusive terms because a device generally comprises a plurality of other devices

Appellant argues on page 13 that the reference of Wouters does not disclose a single key code that corresponds to two separate functions. It is the examiner's position that Wouters teaches the key code corresponding to the key of keypad is transmitted when the key is selected (col. 4 lines 4 lines 48-57) and teaches transmitting an infrared signal to a device such as a VCR to be controlled (col. 3 lines 33-35). When the remote control is used to activate two devices of

the same kind (e.g. VCR of the same brand name) the same key code is used for separate functions of turning on different electronic consumer devices.

Appellant argues on page 14 that the reference of Wouters does not teach a first binary number of a key code corresponding to a first function as well as a second binary number corresponding to a second function. It is the examiner's position that Wouters teaches fetching the data (key code) from memory corresponding to the tapped key (col. 4 lines 55-58). The data from the memory is inherently store as binary data and the data representative of each key tapped includes a first and second binary number.

Regarding appellant argument on pages 14-15 regarding the microcontroller for receiving the key code, it is the examiner's position that the reference of Wouters teaches a radio receiver (13) that is a microcontroller for receiving the radio frequency signal (col. 3 lines 31-32).

Appellant argues on page 15 that the reference of Wouters does not disclose a code set that includes one key code corresponding to a function of one electronic consumer device and the other code corresponding to the same function of another electronic consumer device. It is the examiner's position that Wouters teaches a key code generator (3) for generating key codes for controlling different function on various electrical appliances (col. 1 lines 24-26, col. 3 lines 21-35). The key codes for controlling the different devices inherently includes a first and second key code e.g. the turning on of two different brand of TV requires two different signals.

Appellant argues on page 17 that the examiner improperly argues that the item labeled 12 in room 2 is the remote control device as taught by the reference of Wouters. It is the examiner's position that in a method claim no weight is given to the structure, it has been held that that to be entitled to weight in a method claim, the recited structure limitations therein must affect the

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method in a manipulative sense, and not to amount to the mere claiming of a use of a particular structure. Ex parte Pfeiffer, 1962 C.D. 408 (1961).

Appellant argues on page 17 that the reference of Wouters does not disclose a reference numeral 12 in the specification. It is the examiner's position that the reference 12 represents the receiving subsystem of the remote control as claimed in claim 5 of Wouters.

Appellant argues on pages 18-19, that the combination of the references of Pope and McNair does not teach generating a key code within a key code generating device, a keystroke indicator and a key code signal. It is the examiner's position that Pope teaches receiving a keystroke indicator signal which is the RF signal transmitted from the remote control containing an indication of a key on the remote control device 10 that was pressed (col. 2 lines 61-col. 3 line 19). Pope teaches based on the received RF signal, generating a key code (codes for communicating the control function to the appliances) within the code generator 12 and transmitting the key codes to the appliances (col. 3 lines 35-40). The key code generated is the IR signal that is transmitted through IR window 36. The conversion of the RF signal received from the remote control into IR codes (col. 3 lines 36-40) is considered the generation of the key code.

Appellant argues on page 20 that a keystroke indicator signal cannot be interpreted as the same as a key code signal. It is the examiner's position that the key code signal is considered as the RF signal and the key code is the IR signal generated by key code generator 84 (col. 5 lines 2-10) and therefore does not interpret the keystroke indicator signal as the same as a key code signal.

Appellant argues on page 21 argues that McNair does not teach modulating a key code. It is the examiner's position that the reference of McNair is relied upon for teaching the modulating of a wireless transmission from a remote controller (col. 2 lines 61-65).

Appellant argues on page 21 that there is no motivation to combine the reference of McNair with the reference of Pope. It is the examiner's position that Pope teaches the transmission of a wireless signal from a remote control and the reference of McNair provides the teaching on how to transmit a wireless signal from the remote control device to the electronic apparatus to be controlled.

Appellant argues on page 22 that the reference of Pope does not teach not storing a code set in the remote control. It is the examiner's position that the code set is use for generating the IR signal in the base unit (12) (col. 5 lines 5-14) and is therefore clearly not stored in the handheld unit. The limitation of not storing the code set in the remote control is not recited in claims 3-4. The argument relating to claims 3-4 on pages 22-23 is therefore mute.

Appellant argues on pages 23-24 that the reference of Goldstein does not teach transmitting a key code signal from a key code generator to the remote control. It is the examiner's position that Goldstein teaches a code generator provided by a cable box for responding to a request for key code by transmitting the key code to the remote control (col. 13 lines 50-57). The examiner consider the responding to the request for key code by the cable box as the generation of key code and satisfy the claim limitation of a key code generator because the generation of key code is broadly claimed with no specific given to the means of generating the key codes.

Appellant argues on page 25 that the combination of the references of Pope, McNair and Goldstein would result in the code set or the key codes being stored in the remote control. It is the examiner's position that the reference of Goldstein is relied upon for teaching the transmission of key codes to the remote control and the reference of Pope is relied upon for teaching the limitation of not storing the code set in the remote control.

Appellant argues on page 25 that the reference of Pope, McNair, and Tesky teaches generating a key code within a key code generator and the reference of Teskey does not teach the necessary timing and modulation information. It is the examiner's position that Pope teaches receiving a keystroke indicator signal which is the RF signal transmitted from the remote containing an indication of a key on the remote control device 10 that was pressed (col. 2 lines 61-col. 3 line 19). Pope teaches based on the received RF signal generating a key code (codes for communicating the control function to the appliances) within the code generator 12 and transmitting the key codes to the appliances (col. 3 lines 35-40). The reference of Teskey teaches the key code signal includes timing information such as pulse width and the overall signal timing information for describing the digital "1" and "0".

Appellant argues on page 26 that the reference of August does not teach a key stroke signal transmitted from the remote control to turn on the electronic consumer device. It is the examiner's position that the reference of Pope teaches transmitting the key code signal (control code) to the remote control devices (col. 3 lines 36-40) and the reference of August is relied upon for teaching the conventional practice of a remote control transmitting key codes (control codes) for turning on an electrical consumer apparatus (col. 8 lines 3-5).

Regarding Appellant argument on pages 27-28 regarding the rejection of claim 7, it is the examiner's position that the reference of Pope teaches an embodiment in which the remote control receives the key code signal (infrared signal) from a controller (col. 4 lines 52-56) and transmits the control signal to the electronic consumer devices (figure 1). The reference of Wouters is relied upon for teaching a remote control receiving a RF modulated remote control signal (col. 4 lines 25-28) and a transmitter transmitting an infrared modulated signal generated from the received RF signal (col. 4 lines 28-33).

Regarding Appellant argument on pages 27-28 regarding the rejection of claim 8, it is the examiner's position that the August is relied upon for teaching the conventional practice of a remote control transmitting key codes (control codes) for turning on an electrical consumer apparatus (col. 8 lines 3-5).

Appellant argues on page 29 that the reference of Wouters and Teskey fail to disclose a device with a keypad that transmit an IR signal and receive and RF signal. The response for this argument is already stated on page 12.

Regarding appellant argument on page 29 regarding claims 20-21, the response to this argument is already stated on page 13

Appellant argues on page 30 that the remote control of Wouters does not teach RF receiver, IR transmitter and keypad on the same device. The response for this argument is already stated on page 12.

**(11) Related Proceeding(s) Appendix**

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.


Respectfully submitted,

  
Vernal Brown

Conferees:

Brian Zimmerman

  
BRIAN ZIMMERMAN  
SUPERVISORY PATENT EXAMINER

  
JEFFERY HOFSSASS  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2600



AFJFW

REPLY BRIEF TRANSMITTAL LETTER

January 2, 2008

MAIL STOP APPEAL BRIEF - PATENTS  
COMMISSIONER FOR PATENTS  
P.O. Box 1450  
ALEXANDRIA, VA 22313-1450

Re: Applicant: Daniel SauFu Mui  
Assignee: ZiLOG, Inc.  
Title: "Relaying Key Code Signals Through a Remote Control Device"  
Serial No.: 10/737,029 Filed: December 16, 2003  
Examiner: Vernal U. Brown Art Unit: 2612  
Atty. Docket No.: ZIL-568

Dear Sir:

Transmitted herewith are the following documents:

- (1) reply brief (14 pages);
- (2) a check for filing a brief in an appeal (\$510);
- (6) return postcard; and
- (7) this transmittal sheet.

- No additional Fee is required.
- The fee has been calculated as shown below:

CLAIMS AS AMENDED						
	REMAINING AFTER AMENDMENT		HIGHEST NO. PREVIOUSLY PAID FOR	EXTRA CLAIMS PRESENT	RATE	ADDITIONAL FEE
TOTAL CLAIMS	26	minus	26	0	\$50	\$0.00
INDEP. CLAIMS	7	minus	7	0	\$200	\$0.00
Total Additional Claim Fee						\$0.00
Fee for filing a brief in an appeal [§41.20(b)(2)]						\$510.00
Fee for Request for Oral Hearing [§41.20(b)(3)]						\$0.00
Fee for Extension of Time ( __ month) [§1.17(a)(1)]						\$0.00
TOTAL						\$510.00
<input checked="" type="checkbox"/> A check is attached for the amount of:						\$510.00

I hereby certify that this correspondence is being deposited with the United States Postal Service as First Class Mail in an envelope addressed to: Mail Stop Appeal Brief - Patents, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.  
By Darien K. Wallace  
Darien K. Wallace  
Date of Deposit: January 2, 2008

Respectfully submitted,

*Darien K. Wallace*

Darien K. Wallace  
Attorney for Applicants  
Reg. No. 53,736  
Customer No. 47,713





**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

Appellant: Daniel SauFu Mui

Assignee: ZiLOG, Inc.

Title: "Relaying Key Code Signals Through a Remote Control Device"

Appl. No.: 10/737,029

Filing Date: December 16, 2003

Examiner: Vernal U. Brown

Art Unit: 2612

Docket No.: ZIL-568

January 2, 2008

Mail Stop Appeal Brief - Patents  
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**REPLY BRIEF**

Appellant requests that the appeal be maintained by filing this Reply Brief  
is in response to the Examiner's Answer filed November 1, 2007.

01/08/2008 HLE333 00000018 10737029

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Appellant: Daniel SauFu Mui  
Serial No.: 10/737,029  
Filing Date: December 16, 2003  
Docket No.: ZIL-568

### **I. STATUS OF CLAIMS**

The application at issue, filed on December 16, 2003, included 24 claims. In an amendment dated July 28, 2006, claims 25-26 were added. Claims 1-26 are subject to this Appeal.

Appellant: Dániel SauFu Mui  
Serial No.: 10/737,029  
Filing Date: December 16, 2003  
Docket No.: ZIL-568

## II. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

The following are grounds of rejection to be reviewed on appeal:

1) Claims 13-16, 19, 22 and 24-26 stand rejected under 35 USC §102(e) as being anticipated by Wouters et al. (US Patent 6,915,109).

2) Claims 1, 3-4 and 9 stand rejected under 35 USC §103(a) as being unpatentable over Pope (US Patent 5,963,624) in view of McNair et al. (US Patent 5,595,342).

3) Claim 2 stands rejected under 35 USC §103(a) as being unpatentable over Pope in view of McNair and further in view of Goldstein (US Patent 5,410,326).

4) Claim 5 and 10 stand rejected under 35 USC §103(a) as being unpatentable over Pope in view of McNair and further in view of Teskey (US Patent 6,747,568).

5) Claim 6 stands rejected under 35 USC §103(a) as being unpatentable over Pope in view of McNair and further in view of August et al. (US Patent 5,671,267).

6) Claim 7 stands rejected under 35 USC §103(a) as being unpatentable over Pope in view of McNair and further in view of Wouters.

7) Claim 8 stands rejected under 35 USC §103(a) as being unpatentable over Pope in view of McNair in view of Wouters and further in view of August.

8) Claim 18 stands rejected under 35 USC §103(a) as being unpatentable over Wouters in view of Teskey.

9) Claim 20-21 stand rejected under 35 USC §103(a) as being unpatentable over Wouters in view of August.

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10) Claim 23 stands rejected under 35 USC §103(a) as being unpatentable over Wouters in view of Pope.

Appellant: Daniel SauFu Mui  
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### III. ARGUMENT

#### A. Introduction

The claims on appeal stand rejected because the Examiner has failed to read claim terms in light of the specification, and because many of the rejections are based on conclusory statements about the references, and not based on material actually found in the references. For these reasons, as further explained below and in the briefs already on file, the rejections of the claims should be reversed. The Examiner's Answer does not include any rejection designated as a new ground of rejection.

#### B. The Claims

The Claims on appeal include a few important terms. The terms should be interpreted in light of the specification, rather than the Patent Office's proposed interpretation, which is inconsistent with how the terms are used in the Specification.

As explained in the summary section of the Appeal Brief, the Specification describes a system 10 as including a remote control device 11, a key code generator device 12, and at least one electronic consumer device 13. As clearly identified and illustrated in Figure 2 of the Specification, the key code generator device holds a codeset usable to communicate with an electronic consumer device. A user presses a key on the remote control, and a corresponding keystroke indicator signal is sent to the key code generator device. The key code generator device uses information in the codeset to generate a key code corresponding to the pressed key. The key code generator device modulates the key code onto a first carrier signal, thereby generating a first key code signal. The key code signal is transmitted from the key code generator device back to the remote control device. The remote control device receives the key code signal, and then relays the key code by transmitting the key code in a second key code signal. The second key code signal is received by the electronic consumer

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device.

The Specification uses all of the key claim terms. It clearly indicates that a system is a collection of different devices, and that a remote control device is something with a keypad that is used to operate the consumer electronic devices. The Specification also indicates what a keystroke is and what a keystroke indicator signal is. The Specification indicates what a codeset is, what a key code generator is and what a key code is. It also indicates quite clearly what a key code signal is. All of these terms are clearly defined by the Specification, and these terms should be interpreted in light of the Specification in connection with any comparison of prior art to the Claims.

### **C. The Prior Art**

Two pieces of prior art are principally at issue in this appeal. The first is Wouters (U.S. Patent No. 6915109), and the other is Pope (U.S. Patent No. 5963624). Wouters is directed to taking information from an infrared remote control device and converting the infrared signal from the infrared remote control device into a radio frequency signal so that the information can be transferred to a second room, where it is then received by a consumer device.

As clearly explained in the Appeal Brief, Wouters discloses that all codeset and key code information is held within the Wouters remote control device.

In Pope, a digital cordless phone 10 communicates with a base unit 12. Pope clearly states, as already explained in the Appeal Brief, that the digital cordless phone 10 holds all of the codeset and key codes used by any consumer electronic devices. The base unit 12 only takes the information from the digital cordless phone 10 and translates it into an infrared signal. Both references thus are directed to devices completely different than the methods and devices at issue in this Appeal.

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**D. Rejection of claims 13 and 22**

Independent claims 13 and 22 are directed to a remote control device. A remote control device is not a “system” as that term is used in the Specification. As used in the Specification and as is generally understood, a “system” is a collection of different devices. A remote control device is a single item, and is clearly understood to be such when one refers to the Specification. Furthermore, each of claims 13 and 22 begins with the statement that the subject matter of the claim is: “A remote control device.” This is not preamble language that explains how the remote control device will be used or in what environment the remote control device will be used, as the Examiner suggests. (Examiner’s Answer, p. 12, lines 8-9) Consequently, the claim language “A remote control device” cannot be ignored as being superfluous preamble language.

Claims 13 and 22 define the remote control device as including a receiver, a transmitter and a keypad. The Examiner has rejected the claims based on descriptions of various components from a reference. The rejection does not rely on a device disclosed in the reference, but instead relies on what the Examiner calls a “system of devices” that includes such components. (See, e.g., Examiner’s Answer, p. 3, line 23). A system is not the same as a remote control device, as explained above. Claims 13 and 22 do not read on various components distributed throughout various rooms of a house, as disclosed by Wouters. Claims 13 and 22 could not successfully be asserted against such a “system”. This further demonstrates that it is improper to ignore that the claim is directed to a device and not a system, so the rejection should be reversed.

The Examiner comments that the terms “system” and “device” are not mutually exclusive because a device generally comprises a plurality of other devices. (Examiner’s Answer, p. 12, lines 12-15). The Examiner’s comment does not support the Examiner’s argument that the claim limitation “remote control device” can be interpreted to comprise a plurality of other devices distributed throughout various rooms of a house. It is clear from the wording of claims and from the Specification that the recited “remote control device” cannot

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be interpreted as multiple devices that are physically located in multiple rooms.  
A remote control device is a single remote control.

**E. Rejection of claim 14**

Claim 14, which depends from claim 13, states that a key code corresponds to a function of electronic consumer device and that the key code also corresponds to a second function of a second electronic consumer device. As explained in the Appeal Brief, Wouters does not disclose this claim limitation. Moreover, the Examiner did not state that Wouters discloses one key code that corresponds both to a function of an electronic consumer device as well as to a second function of a second electronic consumer device.

In the Examiner's Answer, the Examiner now suggests that Wouters discloses that "the same key code is used for separate functions of turning on different electronic consumer devices" when the remote control is used to activate two devices of the same kind, such as two VCRs of the same brand. (Examiner's Answer, p. 12, line 20 – p. 13, line 2). So the Examiner now argues that when the same key code is used to turn on two electronic consumer devices of the same kind, "turning on" the first device constitutes one function, whereas "turning on" the second of the identical devices constitutes a second function. Interpreting the "turning on" function of two identical devices to be two separate functions is a semantic slight of hand that is inconsistent with the tenets of claim interpretation and the use of the claim term "a second function" in the claims and the Specification. Under the tenets of claim differentiation, the terms "said function" and "a second function" used in the same claim cannot be interpreted to be the same "turning on" function. For these reasons, the rejection of claim 14 should be withdrawn.

**F. Rejection of claim 16**

In the Appeal Brief, Appellant pointed out that the Examiner has not presented a *prima facie* argument of anticipation of claim 16 because the



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Examiner does not state that Wouters discloses a first binary number of a key code corresponding to a first function, as well as a second binary number of the same key code corresponding to a second function. The Examiner's response in the Answer Brief does not address where Wouters discloses a second binary number of the same key code that corresponds to a second function. Instead, the Examiner states, "The data from the memory is inherently store as binary data and the data representative of each key tapped includes a first and second binary number" (Examiner's Answer, p. 13, lines 6-8). The fact that data representative of a tapped key includes both a first binary number and a second binary number does not address whether the first binary number corresponds to a first function, and the second binary number corresponds to a second function. No *prima facie* argument of anticipation of claim 16 has been presented.

**G. Rejection of claim 24**

Dependent claim 24 recites that the remote control device includes a means for receiving a key code from an RF receiver and that the means is a microcontroller. Appellant has argued that Wouters does not disclose a microcontroller for receiving a key code from an RF receiver. The Examiner now responds that "Wouters teaches a radio receiver (13) that is a microcontroller" (Examiner's Answer, p. 13, lines 10-11). Appellant respectfully disagrees. Wouters does not disclose that "radio receiver 13" is a microcontroller. In fact, Wouters does not mention a microcontroller, a microprocessor, or a processor of any kind.

**H. Rejection of claim 19**

Claim 19 recites, "a codeset is stored on said key code generator device, said codeset including said first key code and said second key code, wherein said first key code corresponds to a selected function of a first electronic consumer device, and wherein said second key code corresponds to said selected function of a second electronic consumer device" (emphasis added).

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Appellants have argued that the Examiner has not presented a *prima facie* argument of anticipation of claim 19 because the Examiner has not stated that Wouters discloses a codeset including the two key codes recited in claim 19 that correspond to the same function on different electronic consumer devices. Nor has the Examiner stated that Wouters discloses that those two key codes are included in a codeset stored on the key code generator device.

In fact, Wouters does not mention key codes that correspond to the same function on separate electronic consumer devices. The Examiner now argues that the two recited key codes are inherently present if the system of Wouters can turn on two different brands of television. The Examiner argues that the remote control unit 3 of Wouters discloses the recited key code generator. The Examiner states, "Wouters teaches a key code generator (3) for generating key codes for controlling different function on various electrical appliances (col. 1 lines 24-26, col. 3 lines 21-35). The key codes for controlling the different devices inherently includes a first and second key code e.g. the turning on of two different brand of TV requires two different signals." (Examiner's Answer, p. 13, lines 15-18).

Even if this were true, the Examiner has not stated that Wouters discloses that the two recited key codes are included in a codeset stored on remote control unit 3 of Wouters. The Examiner's statement still does not establish a *prima facie* argument of anticipation of claim 19 because the Examiner has not alleged that a codeset is stored on remote control unit 3 of Wouters that includes the two recited key codes. For this reason, as well as the other reasons identified in the Appeal Brief, the reversal of the rejection of claim 19 is requested.

#### **I. Rejection of claim 25**

Appellant has maintained that the Examiner has improperly argued that the "remote control device" recited in claim 25 is disclosed by remote control unit 3 of Wouters for purposes of one limitation in claim 25 and by item 12 in room 2 of Wouters for purposes of another limitation in claim 25. The Examiner

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responds that caselaw from 1961 prevents any weight to be given to structure in a method claim that does not “affect the method in a manipulative sense”. (Examiner’s Answer, p. 13, line 20 – p. 14, line 2). Thus, the Examiner maintains that it is proper to ignore the structure of the “remote control device” recited in claim 25. Appellant respectfully disagrees with the Examiner’s interpretation of the law. It is improper to ignore the structure of the claim limitation “remote control device” and thereby find that the recited “remote control device” is disclosed by separate structures for purposes of separate claim limitations within a single claim. The method of claim 25 describes how structures interact. The structures cannot be ignored for purposes of claim interpretation.

Moreover, Wouters does not disclose that item 12 in room 2 is a remote control device. The Examiner states that his position is that “the reference 12 represents the receiving subsystem of the remote control as claimed in claim 5 of Wouters” (Examiner’s Answer, p. 14, lines 3-5). In order to be valid, however, the Examiner’s position must be supported by the prior art disclosure. Nowhere does Wouters disclose that item 12 is a remote control device. In fact, item 12 has not keypad or user input mechanism.

**J. Rejection of claim 26**

As explained in the Appeal Brief, the rejection of claim 26 should also be reversed. The Examiner’s Answer does not address this argument, so the reversal of this rejection is requested.

**K. Rejection of claim 1**

Claim 1 recites, “receiving a keystroke indicator signal from a remote control device”. The Examiner argues that Pope teaches “receiving a keystroke indicator signal which is the RF signal transmitted from the remote control containing an indication of a key on the remote control device 10 that was pressed (col. 2 lines 61-col. 3 line 19)” (Examiner’s Answer, p. 14, lines 8-11). Appellant respectfully disagrees. Pope does not teach that remote control device

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10 sends a keystroke indicator signal to base unit 12. In fact, the passage of Pope cited by the Examiner states that “appliance control codes” are transmitted as opposed to keystroke indicators. Pope does not teach that remote control device 10 transmits an indication of a selected key to base unit 12. The keystroke indicator has already been used to generate the appliance control code within remote control device 10 of Pope.

Appellant has argued that it is improper to construe a signal of Pope containing an “appliance control code” as teaching both a keystroke indicator signal as well as a key code signal. The Examiner responds that “the key code signal is considered as the RF signal and the key code is the IR signal” (Examiner’s Answer, p. 14, lines 18-19). The Examiner’s statement appears to admit that the “RF signal” of Pope (Pope does not mention RF or radio frequency) from remote control device 10 to base unit 12 is not a keystroke indicator signal but rather a key code signal containing an appliance control code.

In addition, the Examiner’s rejection is also based on the recited key code being the IR signal of Pope. (Examiner’s Answer, p. 14, line 13-14, 18). As explained in the Specification, a key code is not the same as a key code signal (which is often transmitted in an IR signal). Thus, the recited “code” cannot be taught by a “signal”.

Finally, Appellant has argued that McNair does not teach modulating a key code onto a carrier signal. McNair does not teach a key code at all. The Examiner has previously admitted that Pope is silent on teaching modulating a key code onto a carrier signal. (10/19/06 Office Action, p. 6, line 7) Now the Examiner states that “McNair is relied upon for teaching the modulating of a wireless transmission from a remote controller” (Examiner’s Answer, p. 15, lines 2-3). Thus, the Examiner has admitted that neither Pope nor McNair teaches modulating a key code onto a carrier signal. For this reason as well, the Examiner has failed to establish a prima facie case of obviousness of claim 1 over the combination of Pope and McNair.

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The rejection of claim 1 should therefore be reversed.

**L. Rejection of claim 9**

Claim 9, which depends from claim 1, further states that the remote control device does not store a codeset. The Examiner's Answer states that it is the Examiner's position that a codeset is used for generating an infrared signal in the base unit 12, and therefore a codeset is clearly not stored in the handheld unit 10. (Examiner's Answer, p. 15, lines 9-13). This statement is contrary to the clear language of Pope, as quoted in the Appeal Brief. Pope actually states that the codeset is stored in the handheld unit. Reversal of the rejection of claim 9 is respectfully requested.

**M. Rejection of claim 2**

Claim 2 recites "said key code signal is transmitted in (d) from said key code generator device to said remote control device". Appellant has argued that Goldstein does not teach transmitting a key code signal from the key code generator device back to the remote control device. The fact that Goldstein may teach sending an IR code from a cable television converter box to a remote control device does not teach transmitting a key code signal from a key code generator device back to the remote control device.

The Examiner states that he considers "the responding to the request for key code by the cable box as the generation of key code and satisfy the claim limitation of a key code generator because the generation of key code is broadly claimed with no specific given to the means of generating the key codes" (Examiner's Answer, p. 15, lines 18-21). The Examiner's rebuttal does not refute that codes, as opposed to key code signals, are sent from the cable television converter box of Goldstein to the remote control device. Thus, Goldstein does not teach the recited transmitting a key code signal.

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**N. Rejection of claims 5 and 10**


As with regard to claim 1, for the rejection of claims 5 and 10, the Examiner relies on an "RF signal" of Pope for containing an indication of a key on the remote control device 10 that was pressed. (Examiner's Answer, p. 16, lines 8-11). Pope does not teach, however, that remote control device 10 sends a keystroke indicator signal to base unit 12. The passage of Pope cited by the Examiner states instead that "appliance control codes" are transmitted. Pope does not teach that remote control device 10 transmits an indication of a selected key to base unit 12. The keystroke indicator has already been used to generate the appliance control code within remote control device 10 of Pope.

**O. Rejection of claims 6-8, 18, 20-21 and 23**

As to the remaining dependent claims 6-8, 18-21 and 23, the limitations included therein have already been discussed in the Appeal Brief and earlier in this Reply, so the reversal of the rejections is again respectfully requested.

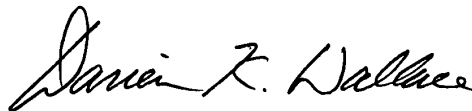
Appellant requests that the Board reverse the §102 and §103 rejections of claims 1-26.

I hereby certify that this correspondence is being deposited with the United States Postal Service as First Class Mail in an envelope addressed to: Mail Stop Appeal Brief - Patents, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

By   
Darien K. Wallace

Date of Deposit: January 2, 2008

Respectfully submitted,



Darien K. Wallace  
Attorney for Appellant  
Reg. No. 53,736  
Customer No. 47,713



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10/737,029	12/16/2003	Daniel SauFu Mui	ZIL-568	4506

47713 7590 03/14/2008  
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EXAMINER

BROWN, VERNAL U

ART UNIT	PAPER NUMBER
2612	

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**Commissioner for Patents**

The reply brief filed 1/07/08 has been entered and considered. The application has been forwarded to the Board of Patent Appeals and Interferences for decision on the appeal.

Examiner: Vernal Brown  
 Date: March 05, 2008

/Brian A Zimmerman/  
 Supervisory Patent Examiner, Art Unit 2612

PTO-90C (Rev.04-03)





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Appeal No: 2008-4830  
Application: 10/737,029  
Appellant: Daniel SauFu Mui

## Board of Patent Appeals and Interferences Docketing Notice

Application 10/737,029 was received from the Technology Center at the Board on June 11, 2008 and has been assigned Appeal No: 2008-4830.

A review of the file indicates that the following documents have been filed by appellant:

Appeal Brief filed on: July 26, 2007  
Reply Brief filed on: January 07, 2008  
Request for Hearing filed on: NONE

In all future communications regarding this appeal, please include both the application number and the appeal number.

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The facsimile number of the Board is 571-273-0052. Because of the heightened security in the Washington D.C. area, facsimile communications are recommended. Telephone inquiries can be made by calling 571-272-9797 and should be directed to a Program and Resource Administrator.

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10/737,029	12/16/2003	Daniel SauFu Mui	ZIL-568	4506

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BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES

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*Ex parte* DANIEL SAUFU MUI

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Appeal 2008-4830  
Application 10/737,029  
Technology Center 2600

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Decided: November 14, 2008

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Before JAMESON LEE, RICHARD TORCZON and SALLY C. MEDLEY,  
*Administrative Patent Judges.*

MEDLEY, *Administrative Patent Judge.*

DECISION ON APPEAL

A. Statement of the Case

ZiLOG, Inc. (“Zilog”), the real party in interest, seeks review under 35 U.S.C. § 134(a) of a Final Rejection of claims 1-10, 13-16 and 18-26. We have jurisdiction under 35 U.S.C. § 6(b). We affirm-in-part and enter a new ground of rejection.

Zilog’s invention is related to a system and associated method that includes a key code generator that receives a keystroke from a remote

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control device. The key code generator generates a key code and transmits the key code. Spec. 2-3, 6-8, 11-12.

Representative claim 1, reproduced from the Claim Appendix of the Appeal Brief, reads as follows:

- A method comprising:
- (a) receiving a keystroke indicator signal from a remote control device;
  - (b) generating a key code within a key code generator device;
  - (c) modulating said key code onto a carrier signal, thereby generating a key code signal; and
  - (d) transmitting said key code signal from said key code generator device.

The Examiner relies on the following prior art in rejecting the claims on appeal:

Goldstein	5,410,326	Apr. 25, 1995
McNair et al. ("McNair")	5,595,342	Jan. 21, 1997
August et al. ("August")	5,671,267	Sep. 23, 1997
Pope	5,963,624	Oct. 5, 1999
Teskey	6,747,568	Jun. 8, 2004
Wouters et al. ("Wouters")	6,915,109	Jul. 5, 2005

The Examiner rejected claims 13-16, 19, 22 and 24-26 under 35 U.S.C. § 102(e) as anticipated by Wouters.

The Examiner rejected claims 1-10, 18, 20-21 and 23 under 35 U.S.C. § 103(a) as follows:

1. Claim 18 as unpatentable over Wouters and Teskey;
2. Claims 20 and 21 as unpatentable over Wouters and August;
3. Claim 23 as unpatentable over Wouters and Pope;
4. Claims 1, 3-4 and 9 as unpatentable over Pope and McNair;
5. Claim 2 as unpatentable over Pope, McNair and Goldstein;
6. Claims 5 and 10 as unpatentable over Pope, McNair and Teskey;

7. Claim 6 as unpatentable over Pope, McNair and August;
8. Claim 7 as unpatentable over Pope, McNair and Wouters;
9. Claim 8 as unpatentable over Pope, McNair, Wouters and August.

B. Findings of Fact (“FF”)

Zilog’s Specification

1. Zilog’s specification describes “[i]n one embodiment, the indication of a pressed key is a keycode . . .”. Spec. 7.

Wouters

2. Wouters depicts a remote control unit 3 including an infrared (IR) transmitter 4; and a radio frequency (RF) transmission system 6 including an IR receiver 7 and a radio transmitter 8 in a first room 1. Fig. 1; col. 3, ll. 23-30.
3. In a second room 2, there is a RF receiving system 12 which includes radio receiver 13 and IR transmitter 14; and an IR receiver 16 coupled to a device such as a VCR in room 2. Fig. 1; col. 3, ll. 31-36; claim 1.
4. A radio signal 10 is received via antenna 11 by radio receiver 13, which is coupled to IR transmitter 14 for generating IR signal 15. Fig. 1, col. 3, ll. 31-32.
5. When a user taps a key on the remote control device 3, the central processing unit (CPU) inside the remote control device determines which code needs transmitting and fetches the required data from its memory that comprises a database. Col. 4, ll. 53-58.
6. The invention may be used in a variety of systems and devices such as systems comprising or using remote control, VCR, TV, Internet-enabled TV, Set-top boxes, PC-TV, PC and home control. Col. 1, ll. 23-26.

Pope

7. Pope describes transmitting appliance control codes from a cordless digital telephone handset 10, 50 to base unit 12 in response to selection of the appliance control via the handset keypad 30. Figs. 1, 2; col. 2, ll. 48-col. 3, ll. 19.
8. The base unit processor 84 gets an infrared control code from memory 86 based on a received appliance control code. Fig. 3, col. 4, l. 62-col. 5, l. 11.
9. Base unit 12 transmits infrared control code through outer window 36 to electrical appliances 14-22. Fig. 1, col. 3, ll. 35-41.

McNair

10. McNair describes that wireless transmission between a room temperature sensor and a receiver can be around 173 MHz using frequency modulation techniques including frequency shift keying. Col. 2, ll. 9-18, 61-65.

Graham<sup>1</sup>

11. Graham describes modulating a digital code or binary code onto a carrier signal. Abs., Col. 2, ll. 11-16.
12. Modulating a digital code onto a carrier signal precludes unauthorized or accidental activation of a control of the receiving means. Spec. Abs.
13. Modulating a digital code or a binary code onto a carrier signal provides an exceptional degree of security and privacy. Col. 2, ll. 7-11.

C. Principles of Law

“It would be inconsistent with the role assigned to the PTO in issuing a patent to require it to interpret claims in the same manner as judges who,

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<sup>1</sup> Graham, U.S. Patent No. 4,005,428 (issued Jan. 25, 1977).

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post-issuance, operate under the assumption the patent is valid.” *In re Morris*, 127 F.3d 1048, 1054 (Fed. Cir. 1997). “[A]s an initial matter, the PTO applies to the verbiage of the proposed claims the broadest reasonable meaning of the words in their ordinary usage as they would be understood by one of ordinary skill in the art, taking into account whatever enlightenment by way of definitions or otherwise that may be afforded by the written description contained in the applicant's specification.” *Id.*

A claim undergoing examination is given its broadest reasonable construction consistent with the specification. *In re Prater*, 415 F.2d 1393, 1404-05 (CCPA 1969). But, “limitations are not to be read into the claims from the specification.” *In re Van Geuns*, 988 F.2d 1181, 1184 (Fed. Cir. 1993) (citation omitted).

“[A]n indefinite article ‘a’ or ‘an’ in patent parlance carries the meaning of ‘one or more’ in open-ended claims containing the transitional phrase ‘comprising.’” *KCJ Corp. v. Kinetic Concepts, Inc.*, 223 F.3d 1351, 1356 (Fed. Cir. 2000) (citations omitted).

“Anticipation under 35 U.S.C. § 102(e) requires that ‘each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference.’” *In re Robertson*, 169 F.3d 743, 745 (Fed. Cir. 1999) (quoting *Verdegaal Bros., Inc. v. Union Oil Co.*, 814 F.2d 628, 631 (Fed. Cir. 1987)).



D. Analysis

Rejection of claims 13-16, 19, 22 and 24-26 as anticipated by Wouters  
Claims 13 and 22

Independent claims 13 and 22 stand or fall together. App. Br. 11. Representative claim 13 recites “A remote control device comprising: a receiver . . . a transmitter . . .”. App. Br. 34.

The Examiner finds that Wouters’ system of devices depicted in room 1 and room 2 comprising an RF receiver, and an IR transmitter meets the claim limitations. Final Rejection 4, Ans. 3-4; citing Wouters col. 4, ll. 25-33, 48-57; fig. 1; FF<sup>2</sup>s 2-3.

Zilog argues that Wouters’ system of devices depicted in room 1 and room 2 is not a single device. App. Br. 11-12; Reply Br. 7-8. Zilog argues that the Examiner’s interpretation is improper and is contrary to how the term is used in the claims and specification. App. Br. 12; Reply Br. 7-8. Zilog asserts that it disavows the claim scope of a remote control so as to exclude a system and cites case law in support of its position. App. Br. 12

We are unpersuaded by Zilog’s arguments. As made clear in *Morris*, the PTO does not interpret claims in the same manner as judges who operate under the assumption that the patent is valid. Instead, during patent prosecution before the PTO, the broadest reasonable interpretation applies. We broadly interpret “[a] remote control device” as an apparatus that includes one or more components. The claim does not require the components to be contained or housed within a single structure. Therefore, the Examiner’s finding that Wouters’ system of devices meets Zilog’s “[a]

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<sup>2</sup> FF denotes Finding of Fact.

remote control device” is consistent with the broadest reasonable interpretation of a remote control device.

For all these reasons we find that Zilog has not sustained its burden of showing that the Examiner erred in rejecting claims 13 and 22 as anticipated by Wouters.

Claims 14-16

Claim 14 is dependent on claim 13 and recites “said keycode corresponds to a second function of a second electronic consumer device, as well as to said function of said electronic consumer device.” App. Br. 34.

The Examiner finds that when a remote control is used to activate two devices of the same kind (e.g., VCRs of the same brand name) the same key code is used for separate functions of turning on different electronic consumer devices. Ans. 12-13.

Zilog argues that Wouters does not describe one key code that corresponds to two separate functions of two different electronic consumer devices. App. Br. 13. Zilog further argues that the Examiner’s interpretation is inconsistent with the tenets of claim interpretation and the use of the term “second function” in the claims and specification. Reply Br. 8. Zilog argues that under the tenets of claim interpretation “said function” and “a second function” used in the same claim cannot be interpreted to be the same function.

We agree with Zilog. Within the same claim, the Examiner interprets “said function” and “a second function” as the same function, yet interprets “said electronic consumer device” and “a second electronic consumer device” as different devices. The Examiner’s interpretation of the claim terms within a single claim is inconsistent. To be consistent, both “a second

function” and “a second electronic consumer device” must either be the same as or different from both “said function” and “said electronic consumer device”. Moreover, it would be counterintuitive for a claim drafter to use the term “a second function” if the intent was for it to be interpreted the same as “said function”. For these reasons, we find that the Examiner’s interpretation of “said function” and “a second function” as the same function to be unreasonable. We therefore find that the Examiner erred in finding claim 14 anticipated by Wouters.

Claims 15 and 16 are dependent on claim 14. App. Br. 34-35. For the same reasons explained above regarding claim 14, we find that the Examiner erred in rejecting claims 15 and 16 as anticipated by Wouters.

Claim 24

Claim 24 is dependent on claim 22 which recites “means for receiving a key code from said RF receiver and for sending said keycode to said IR transmitter. . .”. App. Br. 14, 37. Claim 24 further recites “said means in a microcontroller.” Both Zilog and the Examiner interpret a microcontroller as a processor. Reply Br. 9, Final Rejection 5.

Zilog argues that Wouters does not disclose that radio receiver 13 is a microcontroller and does not mention a microcontroller, microprocessor or processor of any kind. Reply Br. 9.

We agree with Zilog’s arguments. The Examiner has not directed us to, and we can not find, where Wouters explicitly or inherently discloses that radio receiver 13 is a microcontroller or a processor. Instead, the Examiner relies on a citation to Wouters which describes that radio receiver 13 receives a radio signal via antenna 11. Ans. 4, 13; citing Wouters col. 3, ll. 31-32; FF 4.

For this reason, we find that the Examiner erred in rejecting claim 24 as anticipated over Wouters.

Claim 19

Independent claim 19 recites “a codeset is stored on said key code generator device, said codeset including said first key code and said second key code, wherein said first key code corresponds to a selected function of a first electronic consumer device, and wherein said second key code corresponds to said selected function of a second electronic consumer device . . .”. App. Br. 35-36.

Zilog argues that Wouters does not describe two key codes included in a codeset stored on a key code generator (i.e., remote control unit 3). App. Br. 15-16; Reply Br. 10.

While Wouters describes that a set of codes are stored in the memory of the remote control device 3 (FF 5), the Examiner has not sufficiently explained how Wouters’ stored codeset includes a first key code corresponding to a selected function of a first electronic consumer device and a second key code corresponding to said selected function of a second consumer device. The Examiner also has not sufficiently explained how Wouters explicitly or inherently describes the disputed claim limitations. Instead, the Examiner relies on Wouters description that IR receiver 16 is coupled to a VCR and the general statement that the invention can be used with a variety of systems and devices comprising or using a remote control, VCR, TV, etc. Final Rejection 4; Ans. 4, 13; citing Wouters col. 1, ll. 24-26; col. 3, ll. 21-35; FFs 3, 6. This is insufficient to establish a prima facie case of anticipation.

For these reasons we find that the Examiner erred in rejecting claim 19 as anticipated over Wouters.

Claims 25 and 26

Independent claim 25 recites “receiving a keystroke indicator from a remote control device . . . transmitting said key code signal from said key code generator device to said remote control device . . .”. App. Br. 16, 37. We interpret “said remote control device” to refer to, and be the same as, the aforesaid “a remote control device”.

Zilog argues that Wouters does not describe (1) receiving a signal from a remote control device and (2) transmitting a second signal to the remote control device. App. Br. 16. Zilog argues that it is improper to ignore the structure of the “remote control device” and find that the claimed “remote control device” is met by separate structures for separate limitations within a claim. Reply Br. 11.

Zilog’s arguments are persuasive and consistent with our interpretation that “said remote control device” is the same as the aforesaid “a remote control device”. The Examiner has not directed us to, and we can not find, where Wouters describes receiving a keystroke indicator from a remote control device and transmitting a keycode signal to the *same* remote control device. Instead, the Examiner has directed us to Wouters’ description of sending a keystroke indicator signal from one device (i.e., remote control unit 3) and transmitting the keycode to a different device (i.e., RF receiving system 12). Final Rejection 5, Ans. 5; citing Wouters col. 3, ll. 21-34; col. 4, ll. 25-37; fig 1.

For these reasons, we find that the Examiner erred in rejecting claim 25 as anticipated over Wouters.

Our interpretation of claim 25 may appear to be inconsistent with our interpretation of claims 13 and 22 because with respect to claim 25 we interpret the remote control as a singular device. However, claim 25 is a method claim that requires receiving a keystroke indicator from the remote control and also sending a keycode to the *same* remote control. In contrast, claims 13 and 22 are apparatus claims that do not include any additional structural recitations that require the remote control to be a single device or require the components to be encased in a single housing.

Claim 26 is dependent on claim 25. App. Br. 37. For the same reason as explained above regarding claim 25, we find that the Examiner erred in rejecting claim 26 as anticipated over Wouters.

Rejection of claim 18 as unpatentable over Wouters and Teskey

Claim 18 is dependent on claim 13. App. Br. 34. Claim 18 stands or falls with claim 13 since Zilog did not argue the limitations of claim 18 separately. App. Br. 29. For the same reasons explained above with respect to claim 13, we find that Zilog has not sustained its burden of showing that the Examiner erred in rejecting claim 18 as unpatentable over Wouters and Teskey.

Rejection of claims 20 and 21 as unpatentable over Wouters and August

Claims 20 and 21 are dependent on claim 19. Zilog does not argue the specific limitations of claims 20 or 21, but instead argues the limitations of claim 19. App. Br. 29. As applied by the Examiner, August does not remedy the deficiencies of Wouters. For the same reasons as explained above with respect to claim 19, we find that the Examiner erred in rejecting claims 20 and 21 as unpatentable over Wouters and August.

Rejection of claim 23 as unpatentable over Wouters and Pope

Claim 23 is dependent on claim 22. App. Br. 36. Zilog does not argue the specific limitations of claim 23, but, instead, argues the limitations of claim 22.

Zilog argues that Wouters' RF receiver, IR transmitter and keypad are not on the same device. App. Br. 30. Zilog further argues that Wouters' remote control unit 3 does not include an RF receiver. App. Br. 30. Zilog also argues that Pope teaches against including an IR transmitter on the handset. App. Br. 30.

As explained above with respect to claims 13 and 22, the broadest reasonable interpretation of "[a] remote control device" is an apparatus that includes one or more components or devices. The Examiner's finding that Wouters' remote control device comprises a system of devices is consistent with the broadest reasonable interpretation of the claims. Since "[a] remote control device" can include more than one device, Zilog's arguments that Wouters' remote control unit 3 (i.e., single unit) does not include an RF receiver is not commensurate in scope with the limitations of claims 22 and 23. Pope's teaching against including an IR transmitter on a handset is irrelevant since the claim language does not require all the components to be included in a single remote control device.

For all these reasons, we find that Zilog has not sustained its burden of showing that the Examiner erred in rejecting claim 23 as unpatentable over Wouters and Pope.

Rejection of claims 1, 3-4 and 9 as unpatentable over Pope and McNair

Representative claim 1 is independent and recites "modulating said key code onto a carrier signal . . .". App. Br. 32.

Zilog argues that McNair does not teach modulating a key code onto a carrier signal. App. Br. 21.

The Examiner finds that Pope does not describe modulating a key code onto a carrier signal, but instead relies on McNair for describing modulation of a carrier signal. Final Rejection 6; Ans. 6, 15; citing McNair col. 2, ll. 61-65.

We agree that McNair does not describe modulating a key code, or any code, onto a carrier signal. McNair merely describes frequency modulation including frequency shift keying modulation. FF 10.

For this reason, we find that the Examiner erred in determining that claims 1, 3, 4 and 9 are unpatentable over Pope and McNair.

Rejection of claim 2 as unpatentable over Pope, McNair and Goldstein

Claim 2 is dependent on and includes all of the limitations of claim 1. App. Br. 32. As applied by the Examiner, Goldstein does not make up for the deficiencies of the Pope and McNair references. For the same reasons as explained with respect to claim 1, we find that the Examiner has erred in determining that claim 2 is unpatentable over Pope, McNair and Goldstein.

Rejection of claims 5 and 10 as unpatentable over Pope, McNair and Teskey

Claims 5 and 10 are directly or indirectly dependent on and include all of the limitations of claim 1. App. Br. 32-33. As applied by the Examiner, Teskey does not make up for the deficiencies of the Pope and McNair references. For the same reasons as explained with respect to claim 1, we find that the Examiner has erred in determining that claims 5 and 10 are unpatentable over Pope, McNair and Teskey.



Rejection of claim 6 as unpatentable over Pope, McNair and August

Claim 6 is dependent on and includes all of the limitations of claim 1. App. Br. 32. As applied by the Examiner, August does not make up for the deficiencies of the Pope and McNair references. For the same reasons as explained with respect to claim 1, we find that the Examiner has erred in determining that claim 6 is unpatentable over Pope, McNair and August.

Rejection of claim 7 as unpatentable over Pope, McNair and Wouters

Claim 7 is dependent on and includes all of the limitations of claim 1. App. Br. 32. As applied by the Examiner, Wouters does not make up for the deficiencies of the Pope and McNair references. For the same reasons as explained with respect to claim 1, we find that the Examiner has erred in determining that claim 7 is unpatentable over Pope, McNair and Wouters.

Rejection of claim 8 as unpatentable over Pope, McNair, Wouters and August

Claim 8 is dependent on and includes all of the limitations of claim 1. App. Br. 32. As applied by the Examiner, Wouters and August do not make up for the deficiencies of the Pope and McNair references. For the same reasons as explained with respect to claim 1, we find that the Examiner has erred in determining that claim 8 is unpatentable over Pope, McNair, Wouters and August.

New Ground of Rejection

The following is a quotation of 35 U.S.C. § 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

- (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a

person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 1 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Pope in view of Graham.

Pope's description of transmitting appliance control codes (i.e., keystroke indicator) from handset 10, 50 (i.e., remote control) to base unit 12 (i.e., key code generator) in response to selection of the appliance control via keypad 30 meets the limitation of "receiving a keystroke indicator signal from a remote control device. . .". FF 7. Pope's description that base unit (i.e., key code generator) processor 84 gets an infrared control code (i.e., key code) from memory 86 based on a received appliance control code (key stroke indicator signal) meets the limitation of "generating a key code within a key code generator device . . .". FF 8. Pope's description of base unit 12 (i.e., key code generator) transmitting infrared control code (i.e., key code) through outer window 36 to electrical appliances 14-22 meets the limitation of "transmitting said key code signal from said key code generator device". FF 9.

Although Pope does not describe modulating the keycode onto a carrier signal, attention is directed to Graham which describes modulating a digital code or binary code onto a carrier signal. FF 11. Graham describes that doing so offers the advantages of precluding unauthorized or accidental activation of a control associated with the receiving means and provides an exceptional degree of security and privacy. FFs 12-13. It would have been obvious to one with ordinary skill in the art at the time the invention was made to modify the method of Pope to include modulating the key code onto a carrier signal since doing so offers the advantages of precluding

unauthorized or accidental activation and provides an exceptional degree of security and privacy.

Zilog argues that Pope's appliance control codes transmitted by handset 10, 50 are not a keystroke indicator signal. App. Br. 20-21, Reply Br. 11-12. Zilog urges a narrow interpretation of the term "keystroke indicator signal" to mean an indication of a selected key while precluding a control code. App. Br. 20-21, Reply Br. 11-12. During prosecution, claims are subject to the broadest reasonable interpretation consistent with the specification. Zilog's narrow interpretation is inconsistent with its specification. Zilog's specification describes "[i]n one embodiment, the indication of a pressed key is a keycode . . .". FF 1. Since Zilog's own specification indicates that the keystroke indicator can be a code (i.e. a key code), the finding that Pope's appliance control codes meet the limitation of a keystroke indicator signal is consistent with the broadest reasonable interpretation.

#### E. Decision

Upon consideration of the appeal, and for the reasons given herein, it is

ORDERED that the decision of the Examiner rejecting claims 13 and 22 under 35 U.S.C. § 102(e) as anticipated by Wouters is affirmed.

ORDERED that the decision of the Examiner rejecting claims 14-16, 19 and 24-26 under 35 U.S.C. § 102(e) as anticipated by Wouters is reversed.

ORDERED that the decision of the Examiner rejecting claim 18 under 35 U.S.C. § 103(a) as unpatentable over Wouters and Teskey is affirmed.

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ORDERED that the decision of the Examiner rejecting claims 20-21 under 35 U.S.C. § 103(a) as unpatentable over Wouters and August reversed.

ORDERED that the decision of the Examiner rejecting claim 23 under 35 U.S.C. § 103(a) as unpatentable over Wouters and Pope is affirmed.

ORDERED that the decision of the Examiner rejecting claims 1, 3, 4 and 9 under 35 U.S.C. § 103(a) as unpatentable over Pope and McNair is reversed.

ORDERED that the decision of the Examiner rejecting claim 2 under 35 U.S.C. § 103(a) as unpatentable over Pope, McNair and Goldstein is reversed.

ORDERED that the decision of the Examiner rejecting claims 5 and 10 under 35 U.S.C. § 103(a) as unpatentable over Pope, McNair and Teskey is reversed.

ORDERED that the decision of the Examiner rejecting claim 6 under 35 U.S.C. § 103(a) as unpatentable over Pope, McNair and August is reversed.

ORDERED that the decision of the Examiner rejecting claim 7 under 35 U.S.C. § 103(a) as unpatentable over Pope, McNair and Wouters is reversed.

ORDERED that the decision of the Examiner rejecting claim 8 under 35 U.S.C. § 103(a) as unpatentable over Pope, McNair, Wouters and August is reversed.

This decision contains a new ground of rejection pursuant to 37 C.F.R. § 41.50(b). 37 C.F.R. § 41.50(b) provides "[a] new ground of rejection pursuant to this paragraph shall not be considered final for judicial review."

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37 CFR § 41.50(b) also provides that the appellant, WITHIN TWO MONTHS FROM THE DATE OF THE DECISION, must exercise one of the following two options with respect to the new ground of rejection to avoid termination of the appeal as to the rejected claims:

(1) *Reopen prosecution*. Submit an appropriate amendment of the claims so rejected or new evidence relating to the claims so rejected, or both, and have the matter reconsidered by the examiner, in which event the proceeding will be remanded to the examiner. . . .

(2) *Request rehearing*. Request that the proceeding be reheard under § 41.52 by the Board upon the same record. . . .

AFFIRMED IN-PART  
New Ground of Rejection - 37 C.F.R. § 41.50(b)

ack

cc:

IMPERIUM PATENT WORKS  
P.O. BOX 587  
SUNOL, CA 94586



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: Daniel SauFu Mui

Assignee: ZiLOG, Inc.

Title: "Relaying Key Code Signals Through a Remote Control Device"

Appl. No.: 10/737,029

Filing Date: December 16, 2003

Examiner: Vernal U. Brown

Art Unit: 2612

Docket No.: ZIL-568

January 6, 2009

Mail Stop Amendment  
COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, VA 22313-1450

**AMENDMENT**

Dear Sir:

In response to the decision of the Board of Patent Appeals and Interferences dated November 14, 2008, Applicant hereby reopens prosecution by submitting this Amendment. Applicant requests the Examiner to amend the above-identified application as follows.

There are no amendments to the specification in this Amendment.

**Amendments to the Claims** are reflected in the listing of claims that begins on page 2 of this Amendment.

There are no amendments to the drawings in this Amendment.

The **Remarks** begin on page 8 of this Amendment.

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**Amendments to the Claims:**

This listing of claims replaces all prior versions and listings of claims in the application.

**Listing of Claims**

1. (currently amended): A method comprising:
  - (a) receiving a keystroke indicator signal from a remote control device, wherein the keystroke indicator signal indicates a key on said remote control device that a user has selected;
  - (b) generating a key code within a key code generator device using the keystroke indicator signal;
  - (c) modulating said key code onto a carrier signal, thereby generating a key code signal; and
  - (d) transmitting said key code signal from said key code generator device.
2. (original): The method of Claim 1, wherein said key code signal is transmitted in (d) from said key code generator device to said remote control device.
3. (original): The method of Claim 1, wherein said key code signal is transmitted in (d) from said key code generator device to an electronic consumer device.
4. (original): The method of Claim 1, wherein said key code consists of a binary number.
5. (original): The method of Claim 1, wherein said key code comprises a binary number and timing information, and wherein said timing information defines how said binary number is modulated in (c) onto said carrier signal.

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6. (original): The method of Claim 1, further comprising:

(e) pressing a power-on key of said remote control device causing said remote control device to transmit said keystroke indicator signal that is received in (a), wherein said key code signal transmitted in (d) is received onto an electronic consumer device, and wherein said pressing in (e) causes said electronic consumer device to turn on.

7. (original): The method of Claim 1, wherein said carrier signal is in a radio frequency band, wherein said key code signal is received by said remote control device, and wherein said method further comprises:

(e) modulating said key code onto a second carrier signal, thereby generating a second key code signal, said modulating being performed on said remote control device wherein said second carrier signal is in an infrared frequency band; and

(f) transmitting said second key code signal from said remote control device to an electronic consumer device.

8. (original): The method of Claim 7, further comprising:

(g) pressing a power-on key of said remote control device causing said remote control device to transmit said keystroke indicator signal that is received in (a), wherein the pressing in (g) causes said electronic consumer device to turn on.

9. (original): The method of Claim 1, wherein said key code generated in (b) is part of a codeset, and wherein said remote control device does not store said codeset.

10. (original): The method of Claim 9, wherein said codeset comprises timing information and a plurality of key codes, and wherein said timing information describes a digital one and a digital zero.



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11. (previously presented): A method comprising:

- (a) receiving a keystroke indicator signal from a remote control device;
  - (b) generating a key code within a key code generator device;
  - (c) modulating said key code onto a carrier signal, thereby generating a key code signal; and
  - (d) transmitting said key code signal from said key code generator device,
- wherein a codeset comprises a plurality of key codes, each one of said plurality of key codes corresponding to a function of an electronic consumer device, and wherein no more than a single one of said plurality of key codes is present on said remote control device at any given time.

12. (original): The method of Claim 11, wherein said function of said electronic consumer device is taken from the group consisting of: power on, power off, channel advance, channel back, volume up, volume down, cursor up, cursor down, cursor right, cursor left, select, play, record, stop, forward, back and pause.

13. (currently amended): A remote control device comprising:

a receiver that receives a first key code signal, wherein said first key code signal is generated by modulating a key code onto a first carrier signal, said first carrier signal falling within a radio frequency band;

a transmitter that transmits a second key code signal, wherein said second key code signal is generated by modulating said key code onto a second carrier signal, said second carrier signal falling within an infrared frequency band; and

a keypad that includes a key that corresponds to said key code, wherein said key code corresponds to a function of an electronic consumer device, and wherein said remote control device is contained within a single structure.

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14. (original): The device of Claim 13, wherein said key code corresponds to a second function of a second electronic consumer device, as well as to said function of said electronic consumer device.

15. (original): The device of Claim 14, wherein said transmitter transmits a third key code signal, and wherein said third key code signal is generated by modulating said key code onto a third carrier signal.

16. (original): The device of Claim 14, wherein said key code comprises a first binary number and a second binary number, said first binary number corresponding to said function, and said second binary number corresponding to said second function.

17. (previously presented): A device comprising:

a receiver that receives a first key code signal, wherein said first key code signal is generated by modulating a key code onto a first carrier signal, said first carrier signal falling within a radio frequency band;

a transmitter that transmits a second key code signal, wherein said second key code signal is generated by modulating said key code onto a second carrier signal, said second carrier signal falling within an infrared frequency band;  
and

a keypad that includes a key that corresponds to said key code, wherein said key code corresponds to a function of an electronic consumer device, wherein said keypad includes a second key that corresponds to a second key code, wherein a third key code signal is generated by modulating said second key code onto a third carrier signal, wherein said third key code signal is received by said receiver, and wherein both said first key code and said second key code are not both stored in said device at the same time.

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18. (original): The device of Claim 13, wherein a codeset comprises timing information and a plurality of key codes, wherein each of said plurality of key codes corresponds to a different function of said electronic consumer device, wherein said key code is a binary number, and wherein said timing information defines how said binary number is modulated onto said first carrier signal.

19. (previously presented): A system comprising:

a key code generator device that generates a first key code and a second key code, wherein a codeset is stored on said key code generator device, said codeset including said first key code and said second key code, wherein said first key code corresponds to a selected function of a first electronic consumer device, and wherein said second key code corresponds to said selected function of a second electronic consumer device; and

means for relaying said first key code and said second key code from said key code generator device through a remote control device to said first electronic consumer device and to said second electronic consumer device without simultaneously storing both said first key code and said second key code on said remote control device.

20. (original): The system of Claim 19, wherein said selected function is taken from the group consisting of: power on, power off, channel advance, channel back, volume up, volume down, cursor up, cursor down, cursor right, cursor left, select, play, record, stop, forward, back and pause.

21. (original): The system of Claim 19, wherein said selected function is power on, and wherein said system automatically determines when said first electronic consumer device powers on.

22. (currently amended): A remote control device, comprising:

a keypad;

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an RF receiver;  
an IR transmitter; and

means for receiving a key code from said RF receiver and for sending said key code to said IR transmitter such that said key code is modulated onto an IR carrier signal, said IR carrier signal with said key code modulated thereon being transmitted from said remote control device by said IR transmitter, wherein said remote control device is contained within a single structure.

23. (original): The remote control device of Claim 22, wherein said key code is not stored on said remote control device immediately prior to said means receiving the key code.

24. (original): The remote control device of Claim 22, wherein said means is a microcontroller.

25. (previously presented): A method comprising:

- (a) receiving a keystroke indicator signal from a remote control device;
- (b) using said keystroke indicator signal to generate a key code, wherein a key code generator device generates said key code;
- (c) modulating said key code onto a carrier signal and thereby generating a key code signal; and
- (d) transmitting said key code signal from said key code generator device to said remote control device, wherein said remote control device transmits said key code signal to an electronic consumer device.

26. (previously presented): The method of Claim 25, wherein said key code generated in (b) is part of a codeset, and wherein said codeset is not stored on said remote control device.

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### REMARKS

Reconsideration and allowance of claims 1, 13, 18 and 22-23 are respectfully requested.

Claims 1-10, 13-16, and 18-26 were the subject of the recent appeal. Claims 11-12 and 17 were allowed before the appeal. In the decision of the Board of Patent Appeals and Interferences (the "Board") dated November 14, 2008, the rejections of claims 1-10, 14-16, 19-21 and 24-26 were reversed, and the rejections of claims 13, 18 and 22-23 was sustained. In the present amendment, claims 1, 13 and 22 are amended. After entry of the amendment, claims 1-26 are pending.

#### I. Claims 13 and 22

In the decision of the Board, the Examiner's rejection of claims 13 and 22 was sustained. (Decision, p. 7, lines 3-5) As a basis for sustaining the Examiner's rejection, the decision states, "The claim does not require the components to be contained or housed within a single structure. Therefore, the Examiner's finding that Wouters' system of devices meets Zilog's '[a] remote control device' is consistent with the broadest reasonable interpretation of a remote control device." (Decision, p. 6, line 22 – p. 7, line 2) (emphasis added)

Applicant amends claims 13 and 22 to recite that "said remote control device is contained within a single structure". Thus, the recited "a remote control device" cannot reasonably be interpreted as reading on Wouters' system of devices. Allowance of claims 13 and 22 is requested.

#### II. Dependent claim 18

Claim 18 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Wouters in view of Teskey (10/19/06 Office Action, p. 10, lines 14-15). The combination of Wouters and Teskey does not form the basis for a valid rejection of claim 18 under § 103(a) for the same reasons explained above with relation to

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claim 13. Neither Wouters nor Teskey discloses a single structure with a keypad that both transmits an IR signal and receives an RF signal. Thus, claim 18 is allowable for at least the same reasons for which claim 13 is allowable. Allowance of claim 18 is requested.

### III. Dependent claim 23

Claim 23 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Wouters in view of Pope (10/19/06 Office Action, p. 11, lines 18-19). Claim 23 depends from claim 22 and incorporates the limitations of claim 22. The combination of Wouters and Pope does not form the basis for a valid rejection of claim 23 under § 103(a) for the same reasons explained above with relation to claim 22. Neither Wouters nor Pope teaches a single structure with a keypad, a radio frequency receiver and an infrared transmitter. Pope even teaches against including an IR transmitter on the handset. Pope explains:

"One advantage of having the infrared transmitter attached to the base unit 12 is that the base unit 12 can be typically powered by house current. Since no battery is used, the infrared transmitter can draw more power than is used in battery-type systems. For example, if a button is continuously pressed in a battery-type system, in order to conserve power the infrared signal is not continuously sent, but is sent intermittently. The base unit 12 connected to AC power need not be limited in this fashion. Additionally, it is also possible to have the base unit 12 supply a greater amount of power to the infrared transmitter to transmit a greater amount of infrared energy. In this manner, it may be possible for the infrared bulb to not be focused directly towards the appliance" (Pope, col. 3, lines 46-60) (emphasis added).

Thus, claim 23 is allowable for at least the same reasons for which claim 22 is allowable. Allowance of claim 23 is requested.

### IV. New rejection of Claim 1

In the Decision dated November 14, 2008, the Board presents a new ground of rejection of claim 1. Claim 1 is rejected under 35 U.S.C. § 103(a) as

Applicant: Daniel SauFu Mui  
Serial No.: 10/737,029  
Filing Date: December 16, 2003  
Docket No.: ZIL-568

being unpatentable over Pope in view of Graham. (Decision, p. 15, lines 4-5).


The Board bases its new rejection of claim 1 on a broad interpretation of the claim term "keystroke indicator signal". The Board states, "Zilog urges a narrow interpretation of the term 'keystroke indicator signal' to mean an indication of a selected key while precluding a control code." (Decision, p. 16, lines 5-7). Instead, the Board interpreted the recited "keystroke indicator signal" to have a broad meaning that covers Pope's appliance control codes.

Applicants overcomes the new rejection by amending claim 1 explicitly to limit the scope of the term "keystroke indicator signal" to indicate a key on a remote control device that a user has selected. The appliance control codes of Pope are not keystroke indicator signals that indicate the key on a remote control device that a user has selected. Thus, amended claim 1 is not rendered unpatentable by the combination of Pope in view of Graham.

#### V. Conclusion

In view of the foregoing amendments and remarks, Applicant respectfully submits that the entire application (claims 1-26 are pending) is in condition for allowance. Applicant respectfully requests that a timely Notice of Allowance be issued in this case. If the Examiner would like to discuss any aspect of this application, the Examiner is requested to contact the undersigned at (925) 550-5067.

I hereby certify that this correspondence is being deposited with the United States Postal Service as First Class Mail in an envelope addressed to: Mail Stop Amendment, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

By   
Darien K. Wallace

Date of Deposit: January 6, 2009

Respectfully submitted,



Darien K. Wallace  
Attorney for Applicants  
Reg. No. 53,736  
Customer No. 47,713

IFW



AMENDMENT TRANSMITTAL LETTER

January 6, 2009

MAIL STOP AMENDMENT  
COMMISSIONER FOR PATENTS  
P.O. Box 1450  
ALEXANDRIA, VA 22313-1450

Re: Applicant: Daniel SauFu Mui  
Assignee: ZiLOG, Inc.  
Title: "Relaying Key Code Signals Through a Remote Control Device"  
Serial No.: 10/737,029 Filed: December 16, 2003  
Examiner: Vernal U. Brown Art Unit: 2612  
Atty. Docket No.: ZIL-568

Dear Sir:

- Transmitted herewith are the following documents:  
(1) Amendment with drawings (10 pages);  
(2) Return Postcard; and  
(3) This transmittal sheet.

- No additional Fee is required.  
 The fee has been calculated as shown below:

CLAIMS AS AMENDED						
	REMAINING AFTER AMENDMENT		HIGHEST NO. PREVIOUSLY PAID FOR	EXTRA CLAIMS PRESENT	RATE	ADDITIONAL FEE
TOTAL CLAIMS	26	minus	26	0	\$52	\$0.00
INDEP. CLAIMS	7	minus	7	0	\$220	\$0.00
Total Additional Claim Fee						\$0.00
Fee for Extension of Time ( _ month) [\$1.17(a)(1)]						\$0.00
TOTAL						\$0.00
<input type="checkbox"/> A check is attached for the amount of:						\$0.00

I hereby certify that this correspondence is being deposited with the United States Postal Service as First Class Mail in an envelope addressed to: Mail Stop Amendment, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.  
By Darien K. Wallace  
Darien K. Wallace  
Date of Deposit: January 6, 2009

Respectfully submitted,

*Darien K. Wallace*

Darien K. Wallace  
Attorney for Applicants  
Reg. No. 53,736  
Customer No. 47,713





UNITED STATES PATENT AND TRADEMARK OFFICE

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/737,029	12/16/2003	Daniel SauFu Mui	ZIL-568	4506

47713 7590 03/11/2009  
IMPERIUM PATENT WORKS  
P.O. BOX 587  
SUNOL, CA 94586

EXAMINER

BROWN, VERNAL U

ART UNIT	PAPER NUMBER
2612	

MAIL DATE	DELIVERY MODE
03/11/2009	PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/737,029	<b>Applicant(s)</b> MUI, DANIEL SAUFU	
	<b>Examiner</b> VERNAL U. BROWN	<b>Art Unit</b> 2612	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1)  Responsive to communication(s) filed on 09 January 2009.
- 2a)  This action is **FINAL**.                      2b)  This action is non-final.
- 3)  Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4)  Claim(s) 1-26 is/are pending in the application.  
4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5)  Claim(s) 11,12,17,19-21 and 24-26 is/are allowed.
- 6)  Claim(s) 1,13,18,22-23 is/are rejected.
- 7)  Claim(s) 2-10,14-16 is/are objected to.
- 8)  Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9)  The specification is objected to by the Examiner.
- 10)  The drawing(s) filed on \_\_\_\_\_ is/are: a)  accepted or b)  objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11)  The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12)  Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a)  All    b)  Some \*    c)  None of:  
1.  Certified copies of the priority documents have been received.  
2.  Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3.  Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                     | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

**DETAILED ACTION**

This action is responsive to communication filed on January 09, 2009.

***Response to Amendment***

The amendment of claims 13 and 22 is not entered because the prosecution of these claims is closed..

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pope US Patent 5963624 in view Graham US Patent 4005428.

Regarding claim 1, Pope teaches transmitting appliance control codes (i.e., keystroke indicator) from handset 10, 50 (i.e., remote near control) to base unit 12 (i.e., key code generator). The base unit (12) which the examiner considers as the key code generator therefore receives the keystroke indicator indicating a key on the remote control. Pope teaches generating a key code within a key code generator device using the keystroke indicator signal by the base unit processor retrieving an infrared control code from memory (86) base on the appliance control code (keystroke indicator signal) and transmitting the key code from the key code generator device to the appliance (col. 3 lines 35-40). Pope is however silent on teaching modulating the key code onto a carrier signal. Graham in an analogous art discloses modulating a digital code or binary code onto a carrier signal (col. 2 lines 7-21). Graham describes that doing

so offers the advantages of precluding unauthorized or accidental activation of a control associated with the receiving means and provides an exceptional degree of security and privacy (abstract).

It would have been obvious to one with ordinary skill in the art at the time the invention was made to modify the method of Pope to include modulating the key code onto a carrier signal since doing so offers the advantages of precluding

Claims 13, 18, 22, 23 stand rejected based on the decision by the Board of Patent Appeal and Interference.

***Allowable Subject Matter***

Claims 11-12, 17, 19-21, 24, 25-26 are allowed.

Claims 2-10, 14-16 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

***Conclusion***

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period

Art Unit: 2612


will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to VERNAL U. BROWN whose telephone number is (571)272-3060. The examiner can normally be reached on 8:30-7:00 Monday-Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Brian Zimmerman can be reached on 571-272-3059. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.


/Vernal U Brown/  
Examiner, Art Unit 2612  
March 3, 2009

<b>Index of Claims</b>  	<b>Application/Control No.</b> 10737029	<b>Applicant(s)/Patent Under Reexamination</b> MUI, DANIEL SAUFU
	<b>Examiner</b> VERNAL U BROWN	<b>Art Unit</b> 2612

✓	<b>Rejected</b>	-	<b>Cancelled</b>	N	<b>Non-Elected</b>	A	<b>Appeal</b>
=	<b>Allowed</b>	÷	<b>Restricted</b>	I	<b>Interference</b>	O	<b>Objected</b>

Claims renumbered in the same order as presented by applicant
  CPA
 T.D.
 R.1.47

CLAIM		DATE									
Final	Original	02/09/2009									
	1	✓									
	2	○									
	3	○									
	4	○									
	5	○									
	6	○									
	7	○									
	8	○									
	9	○									
	10	○									
	11	=									
	12	=									
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	15	○									
	16	○									
	17	=									
	18	✓									
	19	=									
	20	=									
	21	=									
	22	✓									
	23	✓									
	24	=									
	25	=									
	26	=									

<b>Search Notes</b>  	<b>Application/Control No.</b> 10737029	<b>Applicant(s)/Patent Under Reexamination</b> MUI, DANIEL SAUFU
	<b>Examiner</b> VERNAL U BROWN	<b>Art Unit</b> 2612

SEARCHED			
Class	Subclass	Date	Examiner
340	825.69, 825.72, 825.22, 5.61, 5.64, 5.74,	2/09/09	VB
345	172, 168,	2/09/09	VB
348	734	2/09/09	VB

SEARCH NOTES			
Search Notes	Date	Examiner	
EASt search	2/9/09	VB	

INTERFERENCE SEARCH			
Class	Subclass	Date	Examiner

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: Daniel SauFu Mui  
Assignee: Universal Electronics Inc.  
Title: "Relaying Key Code Signals Through a Remote Control Device"  
Appl. No.: 10/737,029 Filing Date: December 16, 2003  
Examiner: Vernal U. Brown Art Unit: 2612  
Docket No.: ZIL-568

May 7, 2009

Mail Stop AF  
COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, VA 22313-1450

**AMENDMENT**

Dear Sir:

In response to the final office action dated March 11, 2009 ("Office Action"), Applicant responds as follows and requests the Examiner to amend the above-identified application as follows.

There are no amendments to the specification in this Amendment.

**Amendments to the Claims** are reflected in the listing of claims that begins on page 2 of this Amendment.

There are no amendments to the drawings in this Amendment.

The **Remarks** begin on page 9 of this Amendment.

05/12/2009 SDENB0B3 00000048 10737029

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Applicant: Daniel SauFu Mui  
Serial No.: 10/737,029  
Filing Date: December 16, 2003  
Docket No.: ZIL-568

**Amendments to the Claims:**

This listing of claims replaces all prior versions and listings of claims in the application.

**Listing of Claims**

1. (canceled)
2. (currently amended): ~~The method of Claim 1, wherein said key code signal is transmitted in (d) from said key code generator device~~A method comprising:
  - (a) receiving a keystroke indicator signal from a remote control device, wherein the keystroke indicator signal indicates a key on said remote control device that a user has selected;
  - (b) generating a key code within a key code generator device using the keystroke indicator signal;
  - (c) modulating said key code onto a carrier signal, thereby generating a key code signal; and
  - (d) transmitting said key code signal from said key code generator device to said remote control device.
3. (currently amended): ~~The method of Claim 1, wherein said key code signal is transmitted in (d) from said key code generator device~~A method comprising:
  - (a) receiving a keystroke indicator signal from a remote control device, wherein the keystroke indicator signal indicates a key on said remote control device that a user has selected;
  - (b) generating a key code within a key code generator device using the keystroke indicator signal;
  - (c) modulating said key code onto a carrier signal, thereby generating a key code signal; and

Applicant: Daniel SauFu Mui  
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Filing Date: December 16, 2003  
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(d) transmitting said key code signal from said key code generator device  
to an electronic consumer device.

4. (currently amended): The method of Claim [[1]]2, wherein said key code consists of a binary number.

5. (currently amended): The method of Claim [[1]]2, wherein said key code comprises a binary number and timing information, and wherein said timing information defines how said binary number is modulated in (c) onto said carrier signal.

6. (currently amended): The method of Claim [[1]]3, further comprising:

(e) pressing a power-on key of said remote control device causing said remote control device to transmit said keystroke indicator signal that is received in (a), wherein said key code signal transmitted in (d) is received onto [[an]]said electronic consumer device, and wherein said pressing in (e) causes said electronic consumer device to turn on.

7. (currently amended): The method of Claim [[1]]2, wherein said carrier signal is in a radio frequency band, wherein said key code signal is received by said remote control device, and wherein said method further comprises:

(e) modulating said key code onto a second carrier signal, thereby generating a second key code signal, said modulating being performed on said remote control device wherein said second carrier signal is in an infrared frequency band; and

(f) transmitting said second key code signal from said remote control device to an electronic consumer device.

Applicant: Daniel SauFu Mui  
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Filing Date: December 16, 2003  
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8. (original): The method of Claim 7, further comprising:

(g) pressing a power-on key of said remote control device causing said remote control device to transmit said keystroke indicator signal that is received in (a), wherein the pressing in (g) causes said electronic consumer device to turn on.

9. (currently amended): The method of Claim [[1]]2, wherein said key code generated in (b) is part of a codeset, and wherein said remote control device does not store said codeset.

10. (original): The method of Claim 9, wherein said codeset comprises timing information and a plurality of key codes, and wherein said timing information describes a digital one and a digital zero.

11. (previously presented): A method comprising:

(a) receiving a keystroke indicator signal from a remote control device;  
(b) generating a key code within a key code generator device;  
(c) modulating said key code onto a carrier signal, thereby generating a key code signal; and  
(d) transmitting said key code signal from said key code generator device, wherein a codeset comprises a plurality of key codes, each one of said plurality of key codes corresponding to a function of an electronic consumer device, and wherein no more than a single one of said plurality of key codes is present on said remote control device at any given time.

12. (original): The method of Claim 11, wherein said function of said electronic consumer device is taken from the group consisting of: power on, power off, channel advance, channel back, volume up, volume down, cursor up, cursor down, cursor right, cursor left, select, play, record, stop, forward, back and pause.

Applicant: Daniel SauFu Mui  
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13. (canceled)

14. (currently amended): ~~The device of Claim 13,~~ A remote control device comprising:

a receiver that receives a first key code signal, wherein said first key code signal is generated by modulating a key code onto a first carrier signal, said first carrier signal falling within a radio frequency band;

a transmitter that transmits a second key code signal, wherein said second key code signal is generated by modulating said key code onto a second carrier signal, said second carrier signal falling within an infrared frequency band;  
and

a keypad that includes a key that corresponds to said key code, wherein said key code corresponds to a function of an electronic consumer device, and wherein said key code corresponds to a second function of a second electronic consumer device, as well as to said function of said electronic consumer device.

15. (original): The device of Claim 14, wherein said transmitter transmits a third key code signal, and wherein said third key code signal is generated by modulating said key code onto a third carrier signal.

16. (original): The device of Claim 14, wherein said key code comprises a first binary number and a second binary number, said first binary number corresponding to said function, and said second binary number corresponding to said second function.

17. (previously presented): A device comprising:

a receiver that receives a first key code signal, wherein said first key code signal is generated by modulating a key code onto a first carrier signal, said first carrier signal falling within a radio frequency band;

Applicant: Daniel SauFu Mui  
Serial No.: 10/737,029  
Filing Date: December 16, 2003  
Docket No.: ZIL-568

a transmitter that transmits a second key code signal, wherein said second key code signal is generated by modulating said key code onto a second carrier signal, said second carrier signal falling within an infrared frequency band; and

a keypad that includes a key that corresponds to said key code, wherein said key code corresponds to a function of an electronic consumer device, wherein said keypad includes a second key that corresponds to a second key code, wherein a third key code signal is generated by modulating said second key code onto a third carrier signal, wherein said third key code signal is received by said receiver, and wherein both said first key code and said second key code are not both stored in said device at the same time.

18. (canceled)

19. (previously presented): A system comprising:

a key code generator device that generates a first key code and a second key code, wherein a codeset is stored on said key code generator device, said codeset including said first key code and said second key code, wherein said first key code corresponds to a selected function of a first electronic consumer device, and wherein said second key code corresponds to said selected function of a second electronic consumer device; and

means for relaying said first key code and said second key code from said key code generator device through a remote control device to said first electronic consumer device and to said second electronic consumer device without simultaneously storing both said first key code and said second key code on said remote control device.

20. (original): The system of Claim 19, wherein said selected function is taken from the group consisting of: power on, power off, channel advance, channel

Applicant: Daniel SauFu Mui  
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back, volume up, volume down, cursor up, cursor down, cursor right, cursor left, select, play, record, stop, forward, back and pause.

21. (original): The system of Claim 19, wherein said selected function is power on, and wherein said system automatically determines when said first electronic consumer device powers on.

Claims 22 – 23 (canceled)

24. (currently amended): ~~The remote control device of Claim 22,~~ A remote control device, comprising:

a keypad;

an RF receiver;

an IR transmitter; and

means for receiving a key code from said RF receiver and for sending said key code to said IR transmitter such that said key code is modulated onto an IR carrier signal, said IR carrier signal with said key code modulated thereon being transmitted from said remote control device by said IR transmitter, wherein said means is a microcontroller.

25. (previously presented): A method comprising:

(a) receiving a keystroke indicator signal from a remote control device;

(b) using said keystroke indicator signal to generate a key code, wherein a key code generator device generates said key code;

(c) modulating said key code onto a carrier signal and thereby generating a key code signal; and

(d) transmitting said key code signal from said key code generator device to said remote control device, wherein said remote control device transmits said key code signal to an electronic consumer device.

Applicant: Daniel SauFu Mui  
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26. (previously presented): The method of Claim 25, wherein said key code generated in (b) is part of a codeset, and wherein said codeset is not stored on said remote control device.

27. (new): The method of Claim 3, wherein said key code consists of a binary number.

28. (new): The method of Claim 3, wherein said key code comprises a binary number and timing information, and wherein said timing information defines how said binary number is modulated in (c) onto said carrier signal.

29. (new): The method of Claim 3, wherein said key code generated in (b) is part of a codeset, and wherein said remote control device does not store said codeset.

30. (new): The method of Claim 29, wherein said codeset comprises timing information and a plurality of key codes, and wherein said timing information describes a digital one and a digital zero.

Applicant: Daniel SauFu Mui  
Serial No.: 10/737,029  
Filing Date: December 16, 2003  
Docket No.: ZIL-568

### REMARKS

Before entry of this amendment, claims 1-26 were pending. In the Office Action, claims 11-12, 17, 19-21 and 24-26 were allowed, claims 2-10 and 14-16 were objected to, and claims 1, 13, 18 and 22-23 were rejected. In the present amendment, claims 1, 13, 18 and 22-23 are canceled, claims 2-7, 9, 14 and 24 are amended, and claims 27-30 are added. After entry of the amendment, claims 2-12, 14-17, 19-21 and 24-30 are pending.

#### I. Rejection of claims 1, 13, 18 and 22-23

Claims 1, 13, 18 and 22-23 are finally rejected in the Office Action. Applicant cancels claims 1, 13, 18 and 22-23 in order to present these claims for examination in a continuation application.

#### II. New dependent claims 41-45

Applicant adds new claims 27-30, each of which depends from allowable base claim 3.

#### III. Conclusion

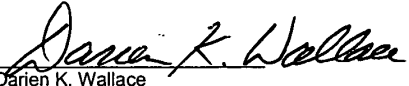
In view of the foregoing amendments and remarks, Applicant respectfully submits that the entire application (claims 2-12, 14-17, 19-21 and 24-30 are pending) is in condition for allowance. Applicant respectfully requests that a timely Notice of Allowance be issued in this case. If the Examiner would like to



Applicant: Daniel SauFu Mui  
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Filing Date: December 16, 2003  
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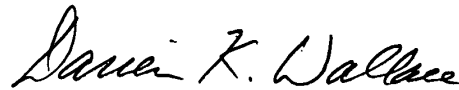
discuss any aspect of this application, the Examiner is requested to contact the undersigned at (925) 550-5067.

I hereby certify that this correspondence is being deposited with the United States Postal Service as First Class Mail in an envelope addressed to: Mail Stop AF, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

By   
Darien K. Wallace

Date of Deposit: May 7, 2009

Respectfully submitted,



Darien K. Wallace  
Attorney for Applicants  
Reg. No. 53,736  
Customer No. 47,713



*15W AF*

**AMENDMENT TRANSMITTAL LETTER**

May 7, 2009

MAIL STOP AF  
COMMISSIONER FOR PATENTS  
P.O. Box 1450  
ALEXANDRIA, VA 22313-1450

Re: Applicant: Daniel SauFu Mui  
Assignee: ZiLOG, Inc.  
Title: "Relaying Key Code Signals Through a Remote Control Device"  
Serial No.: 10/737,029 Filed: December 16, 2003  
Examiner: Vernal U. Brown Art Unit: 2612  
Atty. Docket No.: ZIL-568

Dear Sir:

Transmitted herewith are the following documents:

- (1) Amendment with drawings (10 pages);
- (2) A check for additional claim fees (\$220.00)
- (3) Return Postcard; and
- (4) This transmittal sheet.

- No additional Fee is required.
- The fee has been calculated as shown below:

CLAIMS AS AMENDED						
	REMAINING AFTER AMENDMENT		HIGHEST NO. PREVIOUSLY PAID FOR	EXTRA CLAIMS PRESENT	RATE	ADDITIONAL FEE
TOTAL CLAIMS	25	minus	26	0	\$52	\$0.00
INDEP. CLAIMS	8	minus	7	1	\$220	\$220.00
Total Additional Claim Fee						\$220.00
Fee for Extension of Time ( _ month) [\$1.17(a)(1)]						\$0.00
TOTAL						\$220.00
<input checked="" type="checkbox"/> A check is attached for the amount of:						\$220.00

I hereby certify that this correspondence is being deposited with the United States Postal Service as First Class Mail in an envelope addressed to: Mail Stop AF, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

By *Darien K. Wallace*  
Darien K. Wallace

Date of Deposit: May 7, 2009

Respectfully submitted,

*Darien K. Wallace*

Darien K. Wallace  
Attorney for Applicants  
Reg. No. 53,736  
Customer No. 47,713

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

<b>PATENT APPLICATION FEE DETERMINATION RECORD</b> Substitute for Form PTO-875					Application or Docket Number <b>10/737,029</b>		Filing Date <b>12/16/2003</b>		<input type="checkbox"/> To be Mailed		
<b>APPLICATION AS FILED – PART I</b>					(Column 1)		(Column 2)		SMALL ENTITY <input type="checkbox"/> OR OTHER THAN SMALL ENTITY		
FOR		NUMBER FILED	NUMBER EXTRA	RATE (\$)	FEE (\$)	OR		RATE (\$)	FEE (\$)		
<input type="checkbox"/> BASIC FEE (37 CFR 1.16(a), (b), or (c))		N/A	N/A	N/A		OR		N/A			
<input type="checkbox"/> SEARCH FEE (37 CFR 1.16(k), (l), or (m))		N/A	N/A	N/A		OR		N/A			
<input type="checkbox"/> EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))		N/A	N/A	N/A		OR		N/A			
TOTAL CLAIMS (37 CFR 1.16(j))		minus 20 =	*	X \$ =		OR		X \$ =			
INDEPENDENT CLAIMS (37 CFR 1.16(h))		minus 3 =	*	X \$ =		OR		X \$ =			
<input type="checkbox"/> APPLICATION SIZE FEE (37 CFR 1.16(s))		If the specification and drawings exceed 100 sheets of paper, the application size fee due is \$250 (\$125 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).									
<input type="checkbox"/> MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))											
* If the difference in column 1 is less than zero, enter "0" in column 2.											
<b>APPLICATION AS AMENDED – PART II</b>					(Column 1)		(Column 2)		(Column 3)		
AMENDMENT	<b>05/12/2009</b>		CLAIMS REMAINING AFTER AMENDMENT	HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA	RATE (\$)	ADDITIONAL FEE (\$)	OR		RATE (\$)	ADDITIONAL FEE (\$)
	Total (37 CFR 1.16(j))		* 25	Minus ** 26	= 0	X \$ =		OR		X \$52=	0
	Independent (37 CFR 1.16(h))		* 8	Minus *** 7	= 1	X \$ =		OR		X \$220=	220
	<input type="checkbox"/> Application Size Fee (37 CFR 1.16(s))										
	<input type="checkbox"/> FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))										
TOTAL ADD'L FEE								OR		TOTAL ADD'L FEE <b>220</b>	
AMENDMENT			CLAIMS REMAINING AFTER AMENDMENT	HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA	RATE (\$)	ADDITIONAL FEE (\$)	OR		RATE (\$)	ADDITIONAL FEE (\$)
	Total (37 CFR 1.16(j))		*	Minus **	=	X \$ =		OR		X \$ =	
	Independent (37 CFR 1.16(h))		*	Minus ***	=	X \$ =		OR		X \$ =	
	<input type="checkbox"/> Application Size Fee (37 CFR 1.16(s))										
	<input type="checkbox"/> FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))										
TOTAL ADD'L FEE								OR		TOTAL ADD'L FEE	

\* If the entry in column 1 is less than the entry in column 2, write "0" in column 3.  
 \*\* If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20".  
 \*\*\* If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3".

The "Highest Number Previously Paid For" (Total or Independent) is the highest number found in the appropriate box in column 1.

Legal Instrument Examiner:  
 /JOY DOBBS/

This collection of information is required by 37 CFR 1.16. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**  
 If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.



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NOTICE OF ALLOWANCE AND FEE(S) DUE

47713 7590 06/26/2009

IMPERIUM PATENT WORKS
P.O. BOX 587
SUNOL, CA 94586

EXAMINER

BROWN, VERNAL U

ART UNIT PAPER NUMBER

2612

DATE MAILED: 06/26/2009

Table with 5 columns: APPLICATION NO., FILING DATE, FIRST NAMED INVENTOR, ATTORNEY DOCKET NO., CONFIRMATION NO.
10/737,029 12/16/2003 Daniel SauFu Mui ZIL-568 4506

TITLE OF INVENTION: RELAYING KEY CODE SIGNALS THROUGH A REMOTE CONTROL DEVICE

Table with 7 columns: APPLN. TYPE, SMALL ENTITY, ISSUE FEE DUE, PUBLICATION FEE DUE, PREV. PAID ISSUE FEE, TOTAL FEE(S) DUE, DATE DUE
nonprovisional NO \$1510 \$0 \$0 \$1510 09/28/2009

THE APPLICATION IDENTIFIED ABOVE HAS BEEN EXAMINED AND IS ALLOWED FOR ISSUANCE AS A PATENT. PROSECUTION ON THE MERITS IS CLOSED. THIS NOTICE OF ALLOWANCE IS NOT A GRANT OF PATENT RIGHTS. THIS APPLICATION IS SUBJECT TO WITHDRAWAL FROM ISSUE AT THE INITIATIVE OF THE OFFICE OR UPON PETITION BY THE APPLICANT. SEE 37 CFR 1.313 AND MPEP 1308.

THE ISSUE FEE AND PUBLICATION FEE (IF REQUIRED) MUST BE PAID WITHIN THREE MONTHS FROM THE MAILING DATE OF THIS NOTICE OR THIS APPLICATION SHALL BE REGARDED AS ABANDONED. THIS STATUTORY PERIOD CANNOT BE EXTENDED. SEE 35 U.S.C. 151. THE ISSUE FEE DUE INDICATED ABOVE DOES NOT REFLECT A CREDIT FOR ANY PREVIOUSLY PAID ISSUE FEE IN THIS APPLICATION. IF AN ISSUE FEE HAS PREVIOUSLY BEEN PAID IN THIS APPLICATION (AS SHOWN ABOVE), THE RETURN OF PART B OF THIS FORM WILL BE CONSIDERED A REQUEST TO REAPPLY THE PREVIOUSLY PAID ISSUE FEE TOWARD THE ISSUE FEE NOW DUE.

HOW TO REPLY TO THIS NOTICE:

I. Review the SMALL ENTITY status shown above.

If the SMALL ENTITY is shown as YES, verify your current SMALL ENTITY status:

A. If the status is the same, pay the TOTAL FEE(S) DUE shown above.

B. If the status above is to be removed, check box 5b on Part B - Fee(s) Transmittal and pay the PUBLICATION FEE (if required) and twice the amount of the ISSUE FEE shown above, or

If the SMALL ENTITY is shown as NO:

A. Pay TOTAL FEE(S) DUE shown above, or

B. If applicant claimed SMALL ENTITY status before, or is now claiming SMALL ENTITY status, check box 5a on Part B - Fee(s) Transmittal and pay the PUBLICATION FEE (if required) and 1/2 the ISSUE FEE shown above.

II. PART B - FEE(S) TRANSMITTAL, or its equivalent, must be completed and returned to the United States Patent and Trademark Office (USPTO) with your ISSUE FEE and PUBLICATION FEE (if required). If you are charging the fee(s) to your deposit account, section "4b" of Part B - Fee(s) Transmittal should be completed and an extra copy of the form should be submitted. If an equivalent of Part B is filed, a request to reapply a previously paid issue fee must be clearly made, and delays in processing may occur due to the difficulty in recognizing the paper as an equivalent of Part B.

III. All communications regarding this application must give the application number. Please direct all communications prior to issuance to Mail Stop ISSUE FEE unless advised to the contrary.

IMPORTANT REMINDER: Utility patents issuing on applications filed on or after Dec. 12, 1980 may require payment of maintenance fees. It is patentee's responsibility to ensure timely payment of maintenance fees when due.

**PART B - FEE(S) TRANSMITTAL**

**Complete and send this form, together with applicable fee(s), to: Mail Mail Stop ISSUE FEE  
 Commissioner for Patents  
 P.O. Box 1450  
 Alexandria, Virginia 22313-1450  
 or Fax (571)-273-2885**

**INSTRUCTIONS:** This form should be used for transmitting the ISSUE FEE and PUBLICATION FEE (if required). Blocks 1 through 5 should be completed where appropriate. All further correspondence including the Patent, advance orders and notification of maintenance fees will be mailed to the current correspondence address as indicated unless corrected below or directed otherwise in Block 1, by (a) specifying a new correspondence address; and/or (b) indicating a separate "FEE ADDRESS" for maintenance fee notifications.

CURRENT CORRESPONDENCE ADDRESS (Note: Use Block 1 for any change of address)

47713                      7590                      06/26/2009

**IMPERIUM PATENT WORKS**  
 P.O. BOX 587  
 SUNOL, CA 94586

Note: A certificate of mailing can only be used for domestic mailings of the Fee(s) Transmittal. This certificate cannot be used for any other accompanying papers. Each additional paper, such as an assignment or formal drawing, must have its own certificate of mailing or transmission.

**Certificate of Mailing or Transmission**

I hereby certify that this Fee(s) Transmittal is being deposited with the United States Postal Service with sufficient postage for first class mail in an envelope addressed to the Mail Stop ISSUE FEE address above, or being facsimile transmitted to the USPTO (571) 273-2885, on the date indicated below.

(Depositor's name)
(Signature)
(Date)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/737,029	12/16/2003	Daniel SauFu Mui	ZIL-568	4506

TITLE OF INVENTION: RELAYING KEY CODE SIGNALS THROUGH A REMOTE CONTROL DEVICE

APPLN. TYPE	SMALL ENTITY	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	NO	\$1510	\$0	\$0	\$1510	09/28/2009

EXAMINER	ART UNIT	CLASS-SUBCLASS
BROWN, VERNAL U	2612	340-825690

1. Change of correspondence address or indication of "Fee Address" (37 CFR 1.363).  
 Change of correspondence address (or Change of Correspondence Address form PTO/SB/122) attached.  
 "Fee Address" indication (or "Fee Address" Indication form PTO/SB/47; Rev 03-02 or more recent) attached. **Use of a Customer Number is required.**

2. For printing on the patent front page, list  
 (1) the names of up to 3 registered patent attorneys or agents OR, alternatively, \_\_\_\_\_ 1  
 (2) the name of a single firm (having as a member a registered attorney or agent) and the names of up to 2 registered patent attorneys or agents. If no name is listed, no name will be printed. \_\_\_\_\_ 2  
 \_\_\_\_\_ 3

3. ASSIGNEE NAME AND RESIDENCE DATA TO BE PRINTED ON THE PATENT (print or type)  
 PLEASE NOTE: Unless an assignee is identified below, no assignee data will appear on the patent. If an assignee is identified below, the document has been filed for recordation as set forth in 37 CFR 3.11. Completion of this form is NOT a substitute for filing an assignment.

(A) NAME OF ASSIGNEE \_\_\_\_\_ (B) RESIDENCE: (CITY and STATE OR COUNTRY) \_\_\_\_\_

Please check the appropriate assignee category or categories (will not be printed on the patent):  Individual  Corporation or other private group entity  Government

4a. The following fee(s) are submitted:  
 Issue Fee  
 Publication Fee (No small entity discount permitted)  
 Advance Order - # of Copies \_\_\_\_\_

4b. Payment of Fee(s): (Please first reapply any previously paid issue fee shown above)  
 A check is enclosed.  
 Payment by credit card. Form PTO-2038 is attached.  
 The Director is hereby authorized to charge the required fee(s), any deficiency, or credit any overpayment, to Deposit Account Number \_\_\_\_\_ (enclose an extra copy of this form).

5. Change in Entity Status (from status indicated above)  
 a. Applicant claims SMALL ENTITY status. See 37 CFR 1.27.  b. Applicant is no longer claiming SMALL ENTITY status. See 37 CFR 1.27(g)(2).

NOTE: The Issue Fee and Publication Fee (if required) will not be accepted from anyone other than the applicant; a registered attorney or agent; or the assignee or other party in interest as shown by the records of the United States Patent and Trademark Office.

Authorized Signature \_\_\_\_\_ Date \_\_\_\_\_  
 Typed or printed name \_\_\_\_\_ Registration No. \_\_\_\_\_

This collection of information is required by 37 CFR 1.311. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, Virginia 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450.

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Table with 5 columns: APPLICATION NO., FILING DATE, FIRST NAMED INVENTOR, ATTORNEY DOCKET NO., CONFIRMATION NO.
Row 1: 10/737,029, 12/16/2003, Daniel SauFu Mui, ZIL-568, 4506
Row 2: 47713, 7590, 06/26/2009, [Empty], [Empty]
Text: IMPERIUM PATENT WORKS, P.O. BOX 587, SUNOL, CA 94586
Text: EXAMINER BROWN, VERNAL U
Text: ART UNIT 2612, PAPER NUMBER
Text: DATE MAILED: 06/26/2009

Determination of Patent Term Adjustment under 35 U.S.C. 154 (b)
(application filed on or after May 29, 2000)

The Patent Term Adjustment to date is 1076 day(s). If the issue fee is paid on the date that is three months after the mailing date of this notice and the patent issues on the Tuesday before the date that is 28 weeks (six and a half months) after the mailing date of this notice, the Patent Term Adjustment will be 1076 day(s).

If a Continued Prosecution Application (CPA) was filed in the above-identified application, the filing date that determines Patent Term Adjustment is the filing date of the most recent CPA.

Applicant will be able to obtain more detailed information by accessing the Patent Application Information Retrieval (PAIR) WEB site (http://pair.uspto.gov).

Any questions regarding the Patent Term Extension or Adjustment determination should be directed to the Office of Patent Legal Administration at (571)-272-7702. Questions relating to issue and publication fee payments should be directed to the Customer Service Center of the Office of Patent Publication at 1-(888)-786-0101 or (571)-272-4200.

<b>Notice of Allowability</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/737,029	MUI, DANIEL SAUFU	
	<b>Examiner</b>	<b>Art Unit</b>	
	VERNAL U. BROWN	2612	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--**

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1.  This communication is responsive to 5/12/09.
2.  The allowed claim(s) is/are 2-12, 14-17, 19-21 and 24-30.
3.  Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a)  All   b)  Some\*   c)  None   of the:
    1.  Certified copies of the priority documents have been received.
    2.  Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
    3.  Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.  
**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**


4.  A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5.  CORRECTED DRAWINGS ( as "replacement sheets" ) must be submitted.
  - (a)  including changes required by the Notice of Draftsperson's Patent Drawing Review ( PTO-948 ) attached
    - 1)  hereto or 2)  to Paper No./Mail Date \_\_\_\_\_.
  - (b)  including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.

**Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).**
6.  DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

**Attachment(s)**

- |   |   |
|---|---|
| <ol style="list-style-type: none"> <li>1. <input type="checkbox"/> Notice of References Cited (PTO-892)</li> <li>2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)</li> <li>3. <input type="checkbox"/> Information Disclosure Statements (PTO/SB/08),<br/>Paper No./Mail Date _____</li> <li>4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit<br/>of Biological Material</li> </ol> | <ol style="list-style-type: none"> <li>5. <input type="checkbox"/> Notice of Informal Patent Application</li> <li>6. <input type="checkbox"/> Interview Summary (PTO-413),<br/>Paper No./Mail Date _____.</li> <li>7. <input type="checkbox"/> Examiner's Amendment/Comment</li> <li>8. <input type="checkbox"/> Examiner's Statement of Reasons for Allowance</li> <li>9. <input type="checkbox"/> Other _____.</li> </ol> |
|---|---|

/Vernal U Brown/  
 Primary Examiner, Art Unit 2612


<b>Index of Claims</b>  	<b>Application/Control No.</b> 10737029	<b>Applicant(s)/Patent Under Reexamination</b> MUI, DANIEL SAUFU
	<b>Examiner</b> VERNAL U BROWN	<b>Art Unit</b> 2612

✓	<b>Rejected</b>	-	<b>Cancelled</b>	N	<b>Non-Elected</b>	A	<b>Appeal</b>
=	<b>Allowed</b>	÷	<b>Restricted</b>	I	<b>Interference</b>	O	<b>Objected</b>

Claims renumbered in the same order as presented by applicant
  CPA
  T.D.
  R.1.47

CLAIM		DATE									
Final	Original	02/09/2009									
	1	✓									
	2	○									
	3	○									
	4	○									
	5	○									
	6	○									
	7	○									
	8	○									
	9	○									
	10	○									
	11	=									
	12	=									
	13	✓									
	14	○									
	15	○									
	16	○									
	17	=									
	18	✓									
	19	=									
	20	=									
	21	=									
	22	✓									
	23	✓									
	24	=									
	25	=									
	26	=									



<b>Issue Classification</b> 	<b>Application/Control No.</b> 10737029	<b>Applicant(s)/Patent Under Reexamination</b> MUI, DANIEL SAUFU
	<b>Examiner</b> VERNAL U BROWN	<b>Art Unit</b> 2612

ORIGINAL						INTERNATIONAL CLASSIFICATION								
CLASS			SUBCLASS			CLAIMED				NON-CLAIMED				
340			825.69			G	0	8	C	19 / 00 (2006.0)				
<b>CROSS REFERENCE(S)</b>														
CLASS	SUBCLASS (ONE SUBCLASS PER BLOCK)													
340	825.72	825.22	5.61	5.64	5.74									
340	825.29													
345	168													

<input checked="" type="checkbox"/> <b>Claims renumbered in the same order as presented by applicant</b> <input type="checkbox"/> <b>CPA</b> <input type="checkbox"/> <b>T.D.</b> <input type="checkbox"/> <b>R.1.47</b>															
Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original
	1	19	17												
1	2	18													
	3	20	19												
2	4	21	20												
3	5	21													
9	6	22	22												
4	7	23	23												
5	8	23	24												
6	9	24	25												
7	10	25	26												
14	11		27												
15	12		28												
	13		29												
16	14		30												
17	15														
18	16														


(Assistant Examiner) _____ (Date) _____ /VERNAL U BROWN/ Primary Examiner. Art Unit 2612		<b>Total Claims Allowed:</b> 26	
(Primary Examiner) _____ (Date) _____		O.G. Print Claim(s) 19	O.G. Print Figure 1


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**BIB DATA SHEET**
**CONFIRMATION NO. 4506**

SERIAL NUMBER	FILING or 371(c) DATE RULE	CLASS	GROUP ART UNIT	ATTORNEY DOCKET NO. ZIL-568		
10/737,029	12/16/2003	340	2612			
<b>APPLICANTS</b> Daniel SauFu Mui, San Jose, CA; <b>** CONTINUING DATA *****</b> <b>** FOREIGN APPLICATIONS *****</b> <b>** IF REQUIRED, FOREIGN FILING LICENSE GRANTED **</b> 03/24/2004						
Foreign Priority claimed <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No 35 USC 119(a-d) conditions met <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Verified and Acknowledged <u>/VERNAL U BROWN/</u> <small>Examiner's Signature</small>		<input type="checkbox"/> Met after Allowance <small>Initials</small>	<b>STATE OR COUNTRY</b> CA	<b>SHEETS DRAWINGS</b> 4	<b>TOTAL CLAIMS</b> 24	<b>INDEPENDENT CLAIMS</b> 4
<b>ADDRESS</b> IMPERIUM PATENT WORKS P.O. BOX 587 SUNOL, CA 94586 UNITED STATES						
<b>TITLE</b> Relaying key code signals through a remote control device						
<b>FILING FEE RECEIVED</b> 1628	FEES: Authority has been given in Paper No. _____ to charge/credit DEPOSIT ACCOUNT No. _____ for following:		<input type="checkbox"/> All Fees <input type="checkbox"/> 1.16 Fees (Filing) <input type="checkbox"/> 1.17 Fees (Processing Ext. of time) <input type="checkbox"/> 1.18 Fees (Issue) <input type="checkbox"/> Other _____ <input type="checkbox"/> Credit			

<b>Search Notes</b>  	<b>Application/Control No.</b> 10737029	<b>Applicant(s)/Patent Under Reexamination</b> MUI, DANIEL SAUFU
	<b>Examiner</b> VERNAL U BROWN	<b>Art Unit</b> 2612

SEARCHED			
Class	Subclass	Date	Examiner
340	825.69, 825.72, 825.22, 5.61, 5.64, 5.74,	6/23/09	VB
345	172, 168,	6/23/09	VB
348	734	6/23/09	VB

SEARCH NOTES		
Search Notes	Date	Examiner
EASt search	6/23/09	VB

INTERFERENCE SEARCH			
Class	Subclass	Date	Examiner
Same as above		6/23/09	VB

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**PART B - FEE(S) TRANSMITTAL**

Complete and send this form, together with applicable fee(s), to: **Mail** Mail Stop ISSUE FEE  
**Commissioner for Patents**  
**P.O. Box 1450**  
**Alexandria, Virginia 22313-1450**  
**or Fax (571)-273-2885**

INSTRUCTIONS: This form should be used for transmitting the ISSUE FEE and PUBLICATION FEE (if required). Blocks 1 through 5 should be completed where appropriate. All further correspondence including the Patent, advance orders and notification of maintenance fees will be mailed to the current correspondence address as indicated unless corrected below or directed otherwise in Block 1, by (a) specifying a new correspondence address; and/or (b) indicating a separate "FEE ADDRESS" for maintenance fee notifications.

CURRENT CORRESPONDENCE ADDRESS (Note: Use Block 1 for any change of address)

47713 7590 06/26/2009  
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I hereby certify that this Fee(s) Transmittal is being deposited with the United States Postal Service with sufficient postage for first class mail in an envelope addressed to the Mail Stop ISSUE FEE address above, or being facsimile transmitted to the USPTO (571) 273-2885, on the date indicated below.

Darien K. Wallace	(Depositor's name)
<i>Darien K. Wallace</i>	(Signature)
August 4, 2009	(Date)

08/07/2009 CCHAU2 00000054 10737029  
 01 FC:1501 1510.00 OP

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/737,029	12/16/2003	Daniel SauFu Mui	ZIL-568	4506

TITLE OF INVENTION: RELAYING KEY CODE SIGNALS THROUGH A REMOTE CONTROL DEVICE

APPLN. TYPE	SMALL ENTITY	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	NO	\$1510	\$0	\$0	\$1510	09/28/2009

EXAMINER	ART UNIT	CLASS-SUBCLASS
BROWN, VERNAL U	2612	340-825690

1. Change of correspondence address or indication of "Fee Address" (37 CFR 1.363).

Change of correspondence address (or Change of Correspondence Address form PTO/SB/122) attached.

"Fee Address" indication (or "Fee Address" Indication form PTO/SB/47; Rev 03-02 or more recent) attached. Use of a Customer Number is required.

2. For printing on the patent front page, list Imperium Patent Works

(1) the names of up to 3 registered patent attorneys or agents OR, alternatively, 1 Darien K. Wallace

(2) the name of a single firm (having as a member a registered attorney or agent) and the names of up to 2 registered patent attorneys or agents. If no name is listed, no name will be printed. 2 Darien K. Wallace

3 \_\_\_\_\_

3. ASSIGNEE NAME AND RESIDENCE DATA TO BE PRINTED ON THE PATENT (print or type)

PLEASE NOTE: Unless an assignee is identified below, no assignee data will appear on the patent. If an assignee is identified below, the document has been filed for recordation as set forth in 37 CFR 3.11. Completion of this form is NOT a substitute for filing an assignment.

(A) NAME OF ASSIGNEE UEI Cayman Inc.

(B) RESIDENCE: (CITY and STATE OR COUNTRY) Cayman Islands

Please check the appropriate assignee category or categories (will not be printed on the patent):  Individual  Corporation or other private group entity  Government

4a. The following fee(s) are submitted:

Issue Fee

Publication Fee (No small entity discount permitted)

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4b. Payment of Fee(s): (Please first reapply any previously paid issue fee shown above)

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The Director is hereby authorized to charge the required fee(s), any deficiency, or credit any overpayment, to Deposit Account Number \_\_\_\_\_ (enclose an extra copy of this form).

5. Change in Entity Status (from status indicated above)

a. Applicant claims SMALL ENTITY status. See 37 CFR 1.27.  b. Applicant is no longer claiming SMALL ENTITY status. See 37 CFR 1.27(g)(2).

NOTE: The Issue Fee and Publication Fee (if required) will not be accepted from anyone other than the applicant; a registered attorney or agent; or the assignee or other party in interest as shown by the records of the United States Patent and Trademark Office.

Authorized Signature *Darien K. Wallace* Date August 4, 2009

Typed or printed name Darien K. Wallace Registration No. 53,736

This collection of information is required by 37 CFR 1.311. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, Virginia 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450.

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APPLICATION NO.	ISSUE DATE	PATENT NO.	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/737,029	09/15/2009	7589642	ZIL-568	4506

47713 7590 08/26/2009  
IMPERIUM PATENT WORKS  
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Pleasanton, CA 94566

**ISSUE NOTIFICATION**

The projected patent number and issue date are specified above.

**Determination of Patent Term Adjustment under 35 U.S.C. 154 (b)**  
(application filed on or after May 29, 2000)

The Patent Term Adjustment is 1076 day(s). Any patent to issue from the above-identified application will include an indication of the adjustment on the front page.

If a Continued Prosecution Application (CPA) was filed in the above-identified application, the filing date that determines Patent Term Adjustment is the filing date of the most recent CPA.

Applicant will be able to obtain more detailed information by accessing the Patent Application Information Retrieval (PAIR) WEB site (<http://pair.uspto.gov>).

Any questions regarding the Patent Term Extension or Adjustment determination should be directed to the Office of Patent Legal Administration at (571)-272-7702. Questions relating to issue and publication fee payments should be directed to the Customer Service Center of the Office of Patent Publication at (571)-272-4200.

APPLICANT(s) (Please see PAIR WEB site <http://pair.uspto.gov> for additional applicants):

Daniel SauFu Mui, San Jose, CA;



*cdjc*

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

Applicant: Daniel SauFu Mui  
 Assignee: UEI Cayman Inc.  
 Title: "Relaying Key Code Signals Through a Remote Control Device"  
 Serial No.: 10/737,029 Filed: December 16, 2003  
 Patent No.: 7,589,642 B1 Issued: September 15, 2009  
 Examiner: Vernal U. Brown Group Art Unit: 2612  
 Atty. Doc. No.: ZIL-568

ATTN: Certificate of Corrections Branch September 15, 2009  
 COMMISSIONER FOR PATENTS  
 P.O. Box 1450  
 Alexandria, VA 22313-1450

**Certificate**  
 SEP 29 2009  
**of Correction**

**REQUEST FOR CERTIFICATE OF CORRECTION**

Pursuant to 37 CFR 1.322, Applicant requests that the Director issue a certificate of correction to correct a mistake in the printing of the above-identified patent incurred through the fault of the Patent Office. The mistake in the printing of claim 2 is apparent when the attached page of USP 7,589,642 (marked to show the mistake) is compared to the attached page of the Listing of Claims that was submitted with an amendment on May 7, 2009.

The requested correction is submitted on the attached Certificate of Correction form, PTO/SB/44.

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By *Darien K. Wallace*  
 Darien K. Wallace

Date of Deposit: September 21, 2009

Respectfully submitted,

*Darien K. Wallace*

Darien K. Wallace  
 Attorney for Applicant  
 Reg. No. 53,736  
 Customer No. 47,713

**UNITED STATES PATENT AND TRADEMARK OFFICE  
CERTIFICATE OF CORRECTION**

Page  1  of  1

PATENT NO. : 7,589,642 B1  
APPLICATION NO.: 10/737,029  
ISSUE DATE : September 15, 2009  
INVENTOR(S) : Daniel SauFu Mui

It is certified that an error appears or errors appear in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

Column 10, line 25, the words "indicates a keV on said" should be changed to --indicates a key on said--.

**MAILING ADDRESS OF SENDER (Please do not use customer number below):**

Darien K. Wallace, Imperium Patent Works LLP  
P.O. Box 607  
Pleasanton, CA 94566

This collection of information is required by 37 CFR 1.322, 1.323, and 1.324. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 1.0 hour to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. **DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Attention Certificate of Corrections Branch, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

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11, are automatically transmitted from learning remote control device 11 in the form of RF signals to key code generator device 12. Key code generator device 12 in turn communicates the captured strings of timing information through coaxial cable 36 and network 38 to database of codesets 39. Personnel maintaining database of codesets 39 then analyze the timing information and generate a codeset that describes the key codes captured by learning remote control device 11. In this way, a new codeset containing key data, systems codes and timing information is added to database of codesets 39. Rather than storing the information as a new codeset that includes separate key codes and timing information, the information for each keystroke can be stored in database of codesets 39 in the form of interval times.

A single system 10 is therefore described that can support numerous different types of electronic consumer devices that can use multiple different codesets. The remote control device 11 of the system need not include a large memory and stored many codesets. Rather, the remote control device 11 need only relay individual key codes. Remote control device 11 can therefore be a relatively inexpensive device that includes only a small amount of memory. In addition to requiring only a small amount of memory, the very same remote control device 11 can control an electronic consumer device that uses a codeset or protocol that was not in existence at the time the remote control device 11 was delivered to the user. The amount of writable memory (for example, random access memory (RAM) or flash memory) on the remote control device 11 may be so little that it may not be adequate to store a conventional codeset. The bulk of the memory of the remote control device 11 may be relatively inexpensive mask-programmable read only memory (ROM). By reducing the amount of writable memory on remote control device 11, the cost of remote control device 11 is reduced.

Although the present invention has been described in connection with certain specific embodiments for instructional purposes, the present invention is not limited thereto. Although the method is described above in connection with an inexpensive remote control device whose primary purpose is to control an electronic consumer device, the method can be employed in connection with other types of devices. Due to the limited amount of memory and intelligence required of the remote control device in the present method, the functionality of remote control device 11 can be incorporated into an RF-enabled device (such as a cell phone or RF-enabled personal digital assistant (PDA) or RF-enabled wrist watch or RF-enabled keyboard) without significantly increasing the cost of the device. The first carrier signal used to communicate between the remote control device and the key code generator device need not be an RF signal, and the second carrier signal used to communicate between the remote control device and the electronic consumer device need not be an IR signal. Both the first and second carrier signals can be the same type of signals, for example IR signals. The key code generator device can transmit key codes to the electronic consumer device to be controlled via a hardwired connection rather than a wireless link. The type of key code signal relayed through the remote control device is not limited to any particular protocol.

Although key code generator device 12 is a set-top box in the embodiment of FIG. 1 above, in other embodiments the key code generator device 12 is another type of electronic consumer device such as, for example, a television, a stereo radio, a digital video disk player, a video cassette recorder, a personal computer, a set-top cable television box or a set-top satellite box. Although the keystroke indicator signal can be an indication of a pressed key where there is a one-to-one

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relationship between the key and a function to be performed, in other embodiments a keystroke indicator signal indicates a selected function that is not associated with a specific key on the remote control device. For example, a function can be selected choosing a function from a menu that is displayed on the remote control device. Accordingly, various modifications, adaptations, and combinations of various features of the described embodiments can be practiced without departing from the scope of the invention as set forth in the claims.

What is claimed is:

1. A method comprising:

- (a) receiving a keystroke indicator signal from a remote control device, wherein the keystroke indicator signal indicates a key on said remote control device that a user has selected;
- (b) generating a key code within a key code generator device using the keystroke indicator signal;
- (c) modulating said key code onto a carrier signal, thereby generating a key code signal; and
- (d) transmitting said key code signal from said key code generator device to said remote control device.

2. A method comprising:

- (a) receiving a keystroke indicator signal from a remote control device, wherein the keystroke indicator signal indicates a function on said remote control device that a user has selected;
- (b) generating a key code within a key code generator device using the keystroke indicator signal;
- (c) modulating said key code onto a carrier signal, thereby generating a key code signal; and
- (d) transmitting said key code signal from said key code generator device to an electronic consumer device.

3. The method of claim 1, wherein said key code consists of a binary number.

4. The method of claim 1, wherein said key code comprises a binary number and timing information, and wherein said timing information defines how said binary number is modulated in (c) onto said carrier signal.

5. The method of claim 2, further comprising:

- (e) pressing a power-on key of said remote control device causing said remote control device to transmit said keystroke indicator signal that is received in (a), wherein said key code signal transmitted in (d) is received onto said electronic consumer device, and wherein said pressing in (e) causes said electronic consumer device to turn on.

6. The method of claim 1, wherein said carrier signal is in a radio frequency band, wherein said key code signal is received by said remote control device, and wherein said method further comprises:

- (e) modulating said key code onto a second carrier signal, thereby generating a second key code signal, said modulating being performed on said remote control device wherein said second carrier signal is in an infrared frequency band; and
- (f) transmitting said second key code signal from said remote control device to an electronic consumer device.

7. The method of claim 6, further comprising:

- (g) pressing a power-on key of said remote control device causing said remote control device to transmit said keystroke indicator signal that is received in (a), wherein the pressing in (g) causes said electronic consumer device to turn on.

8. The method of claim 1, wherein said key code generated in (b) is part of a codeset, and wherein said remote control device does not store said codeset.



Applicant: Daniel SauFu Mui  
Serial No.: 10/737,029  
Filing Date: December 16, 2003  
Docket No.: ZIL-568

**Amendments to the Claims:**

This listing of claims replaces all prior versions and listings of claims in the application.

**Listing of Claims**

1. (canceled)

2. (currently amended): ~~The method of Claim 1, wherein said key code signal is transmitted in (d) from said key code generator device~~A method comprising:

(a) receiving a keystroke indicator signal from a remote control device, wherein the keystroke indicator signal indicates a key on said remote control device that a user has selected;

(b) generating a key code within a key code generator device using the keystroke indicator signal;

(c) modulating said key code onto a carrier signal, thereby generating a key code signal; and

(d) transmitting said key code signal from said key code generator device to said remote control device.

3. (currently amended): ~~The method of Claim 1, wherein said key code signal is transmitted in (d) from said key code generator device~~A method comprising:

(a) receiving a keystroke indicator signal from a remote control device, wherein the keystroke indicator signal indicates a key on said remote control device that a user has selected;

(b) generating a key code within a key code generator device using the keystroke indicator signal;

(c) modulating said key code onto a carrier signal, thereby generating a key code signal; and

UNITED STATES PATENT AND TRADEMARK OFFICE  
**CERTIFICATE OF CORRECTION**

PATENT NO. : 7,589,642 B1  
APPLICATION NO. : 10/737029  
DATED : September 15, 2009  
INVENTOR(S) : Daniel SauFu Mui

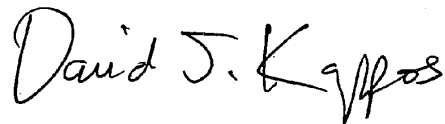
Page 1 of 1

It is certified that error appears in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

Column 10, line 25, the words "indicates a keV on said" should be changed to --indicates a key on said--.

Signed and Sealed this

Twenty-seventh Day of October, 2009

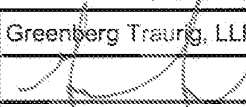


David J. Kappos  
*Director of the United States Patent and Trademark Office*

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<b>TRANSMITTAL FORM</b>  <small>(to be used for all correspondence after initial filing)</small>	Application Number	10/737,029	
	Filing Date	12/16/2003	
	First Named Inventor	Daniel SauFu Mui	
	Art Unit	2612	
	Examiner Name	Brown, Vernal U.	
Total Number of Pages in This Submission	3	Attorney Docket Number	81230.708US1

ENCLOSURES (Check all that apply)		
<input type="checkbox"/> Fee Transmittal Form	<input type="checkbox"/> Drawing(s)	<input type="checkbox"/> After Allowance Communication to TC
<input type="checkbox"/> Fee Attached	<input type="checkbox"/> Licensing-related Papers	<input type="checkbox"/> Appeal Communication to Board of Appeals and Interferences
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<input type="checkbox"/> Affidavits/declaration(s)	<input checked="" type="checkbox"/> Power of Attorney, Revocation Change of Correspondence Address	<input type="checkbox"/> Status Letter
<input type="checkbox"/> Extension of Time Request	<input type="checkbox"/> Terminal Disclaimer	<input checked="" type="checkbox"/> Other Enclosure(s) (please identify below): Statement Under 37 CFR 3.73(b)
<input type="checkbox"/> Express Abandonment Request	<input type="checkbox"/> Request for Refund	
<input type="checkbox"/> Information Disclosure Statement	<input type="checkbox"/> CD, Number of CD(s) _____	
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SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT			
Firm Name	Greenberg Traurig, LLP - Customer No. 34018		
Signature			
Printed name	Gary R. Jarosik		
Date	February 10, 2010	Reg. No.	35,906

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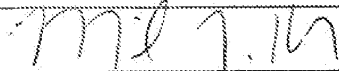
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**REVOCATION OF POWER OF ATTORNEY WITH NEW POWER  
OF ATTORNEY AND CHANGE OF CORRESPONDENCE ADDRESS**

Application No./ Patent No.	Filing Date/ Issue Date	First Named Inventor	Art Unit	Examiner	New Attorney Docket No.
10/737,029	12/16/2003	Daniel SauFu Mui	2612	Brown, Vernal U.	81230.708US1
11/359,149	02/21/2006	George Vergis	2472	Kasperek, Kyle C.	81230.714US2

I hereby revoke all previous powers of attorney given in the above-identified patent applications and patents.

<input type="checkbox"/>	A Power of Attorney is submitted herewith.
Or	
<input checked="" type="checkbox"/>	I hereby appoint the practitioners associated with the Customer Number: <b>34018</b>
<input checked="" type="checkbox"/>	Please change the correspondence address for the above-identified applications/patents to <u>  x  </u> The address associated with Customer Number: <b>34018</b>
I am the:	
<u>  x  </u>	Assignee of record of the entire interest. See 37 CFR 3.71. Statement under 37 CFR 3.73(b) is enclosed.
<b>SIGNATURE of Applicant or Assignee of Record</b>	
Name	Michael J. Koch
Signature	
Date	February 9, 2010
Telephone	(714) 820-1076

58,438,984v1

**STATEMENT UNDER 37 CFR 3.73(b)**

APPLICANT/ PATENT OWNER	APPLICATION NO./ PATENT NO.	FILING DATE/ ISSUE DATE	ENTITLED	NAME OF ASSIGNEE	ASSIGNMENT RECORDED AT REEL/FRAME NO.
UEI Cayman Inc.	10/737,029	12/16/2003	RELAYING KEY CODE SIGNALS THROUGH A REMOTE CONTROL DEVICE	UEI Cayman Inc.	022343/0385
UEI Cayman Inc.	11/359,149	02/21/2006	CODESET COMMUNICATION FORMAT AND RELATED METHODS AND STRUCTURES	UEI Cayman Inc.	022343/0385

Patent owner states that it is the Assignee of the entire right, title, and interest of the above-listed patent applications and patents and that Assignments were recorded at the United States Patent and Trademark Office at the reel and frame numbers listed above.

The undersigned (whose title is supplied below) is authorized to act on behalf of Assignee.

February 9, 2010

Date

(714) 820-1076

Telephone number

Michael J Koch

Typed or printed name

*Michael J Koch*

Signature

Secretary

Title

<b>Electronic Acknowledgement Receipt</b>	
<b>EFS ID:</b>	6983534
<b>Application Number:</b>	10737029
<b>International Application Number:</b>	
<b>Confirmation Number:</b>	4506
<b>Title of Invention:</b>	RELAYING KEY CODE SIGNALS THROUGH A REMOTE CONTROL DEVICE
<b>First Named Inventor/Applicant Name:</b>	Daniel SauFu Mui
<b>Customer Number:</b>	47713
<b>Filer:</b>	Gary R. Jarosik/Gladys Negron-Munoz
<b>Filer Authorized By:</b>	Gary R. Jarosik
<b>Attorney Docket Number:</b>	ZIL-568
<b>Receipt Date:</b>	10-FEB-2010
<b>Filing Date:</b>	16-DEC-2003
<b>Time Stamp:</b>	11:44:34
<b>Application Type:</b>	Utility under 35 USC 111(a)

**Payment information:**

Submitted with Payment	no
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**File Listing:**

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Miscellaneous Incoming Letter	Transmittal10737029.pdf	309851 9d8970294b89cecf2e71f46a3a6fcd6083b3b9a5	no	1

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**Information:**

2	Power of Attorney	ZilogRevNewPOA.pdf	187124 5852883d50fdff80b42cf43f2bb8180f7d7e4 a1aa	no	1
<b>Warnings:</b>					
<b>Information:</b>					
3	Assignee showing of ownership per 37 CFR 3.73(b).	UEICaymanStat373.pdf	153670 ec74ee0b01d1491e15a5756a6ae300f9150 36df	no	1
<b>Warnings:</b>					
<b>Information:</b>					
<b>Total Files Size (in bytes):</b>			650645		
<p><b>This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.</b></p> <p><b><u>New Applications Under 35 U.S.C. 111</u></b>  <b>If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.</b></p> <p><b><u>National Stage of an International Application under 35 U.S.C. 371</u></b>  <b>If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.</b></p> <p><b><u>New International Application Filed with the USPTO as a Receiving Office</u></b>  <b>If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.</b></p>					



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APPLICATION NUMBER	FILING OR 371(C) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
10/737,029	12/16/2003	Daniel SauFu Mui	81230.708US1

**CONFIRMATION NO. 4506**

**POA ACCEPTANCE LETTER**



34018  
GREENBERG TRAUIG, LLP  
77 WEST WACKER DRIVE  
SUITE 3100  
CHICAGO, IL 60601-1732

Date Mailed: 02/17/2010

**NOTICE OF ACCEPTANCE OF POWER OF ATTORNEY**

This is in response to the Power of Attorney filed 02/10/2010.

The Power of Attorney in this application is accepted. Correspondence in this application will be mailed to the above address as provided by 37 CFR 1.33.

/dtvernon/

Office of Data Management, Application Assistance Unit (571) 272-4000, or (571) 272-4200, or 1-888-786-0101





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APPLICATION NUMBER	FILING OR 371(C) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
10/737,029	12/16/2003	Daniel SauFu Mui	ZIL-568

47713  
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**CONFIRMATION NO. 4506**  
**POWER OF ATTORNEY NOTICE**



Date Mailed: 02/17/2010

**NOTICE REGARDING CHANGE OF POWER OF ATTORNEY**

This is in response to the Power of Attorney filed 02/10/2010.

- The Power of Attorney to you in this application has been revoked by the assignee who has intervened as provided by 37 CFR 3.71. Future correspondence will be mailed to the new address of record(37 CFR 1.33).

/dtvernon/

Office of Data Management, Application Assistance Unit (571) 272-4000, or (571) 272-4200, or 1-888-786-0101

ORIGINAL

AO 120 (Rev. 08/10) TO: <b>Mail Stop 8</b> <b>Director of the U.S. Patent and Trademark Office</b> P.O. Box 1450 Alexandria, VA 22313-1450	<b>REPORT ON THE                  FILING OR DETERMINATION OF AN                  ACTION REGARDING A PATENT OR                  TRADEMARK</b>
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In Compliance with 35 U.S.C. § 290 and/or 15 U.S.C. § 1116 you are hereby advised that a court action has been filed in the U.S. District Court for the Central District of California - Southern Division on the following  
 Trademarks or  Patents. (  the patent action involves 35 U.S.C. § 292.);

DOCKET NO. <b>SACV13-00984 JAK (SHx)</b>	DATE FILED	U.S. DISTRICT COURT for the Central District of California - Southern Division
PLAINTIFF Universal Electronics Inc.		DEFENDANT Universal Remote Control, Inc.
PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
1 See Attached.		
2		
3		
4		
5		

2013 JUN 28 PM 1:31  
 FILED  
 CLERK U.S. DISTRICT COURT  
 CENTRAL DISTRICT OF CALIF.  
 SANTA ANA  
 BY: [Signature]

In the above—entitled case, the following patent(s)/ trademark(s) have been included:

DATE INCLUDED	INCLUDED BY		
	<input type="checkbox"/> Amendment <input type="checkbox"/> Answer <input type="checkbox"/> Cross Bill <input type="checkbox"/> Other Pleading		
PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK	
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DECISION/JUDGEMENT
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 Copy 2—Upon filing document adding patent(s), mail this copy to Director    Copy 4—Case file copy

ATTACHMENT TO FORM AO-120

PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
1. 5,228,077	July 13, 1993	Universal Electronics Inc.
2. 5,255,313	October 19, 1993	Universal Electronics Inc.
3. 5,414,761	May 9, 1995	Universal Electronics Inc.
4. 5,552,917	September 3, 1996	Universal Electronics Inc.
5. 6,211,870	April 3, 2001	Universal Electronics Inc.
6. 6,407,779	June 18, 2002	UEI Caymen Inc.
7. 7,126,468	October 24, 2006	Universal Electronics Inc.
8. 7,589,642	September 15, 2009	UEI Caymen Inc.
9. 7,831,930	November 9, 2010	Universal Electronics Inc.

DWT 22215323v2 0095529-000001

AO 120 (Rev. 08/10)

TO: <b>Mail Stop 8</b> <b>Director of the U.S. Patent and Trademark Office</b> P.O. Box 1450 Alexandria, VA 22313-1450	<b>REPORT ON THE                  FILING OR DETERMINATION OF AN                  ACTION REGARDING A PATENT OR                  TRADEMARK</b>
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SACV 13-01484 GAF (RNBx)

DOCKET NO.	DATE FILED	U.S. DISTRICT COURT for the Central District of California - Southern Division
Universal Electronics Inc.		DEFENDANT Peel Technologies, Inc.
PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
1 6,938,101	8/30/2005	Universal Electronics Inc.
2 7,218,243	5/15/2007	Universal Electronics Inc.
3 7,589,642	9/15/2009	UEI Caymen Inc.
4 7,831,930	11/9/2010	Universal Electronics Inc.
5 7,889,112	2/15/2011	UEI Caymen Inc.

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 CLERK U.S. DISTRICT COURT  
 CENTRAL DISTRICT OF CALIF.  
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UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE PATENT TRIAL AND APPEAL BOARD

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UNIVERSAL REMOTE CONTROL, INC.,  
Petitioner,

v.

UNIVERSAL ELECTRONICS, INC.,<sup>1</sup>  
Patent Owner.

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Case IPR2014-01082  
Patent 7,589,642 B1

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Before HOWARD B. BLANKENSHIP, SALLY C. MEDLEY, and  
LYNNE E. PETTIGREW, *Administrative Patent Judges*.

PETTIGREW, *Administrative Patent Judge*.

DECISION

Denying Institution of *Inter Partes* Review  
37 C.F.R. § 42.108

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<sup>1</sup> Patent Owner represents that the owner of the patent and real party-in-interest is Universal Electronics, Inc. Paper 4. Office assignment records indicate, however, that UEI Cayman, Inc. is the owner of the patent. Patent Owner should update Office assignment records to be consistent with its representations made in Paper 4 of this proceeding.

## I. INTRODUCTION

Petitioner, Universal Remote Control, Inc., filed a Petition for *inter partes* review of claims 2, 5, 22, and 23 of U.S. Patent No. 7,589,642 B1 (Ex. 1001, “the ’642 patent”). Paper 2 (“Pet.”). Patent Owner, Universal Electronics, Inc., filed a Preliminary Response. Paper 8 (“Prelim. Resp.”). We have jurisdiction under 35 U.S.C. § 314(a), which provides that an *inter partes* review may not be instituted “unless . . . the information presented in the petition . . . and any response . . . shows that there is a reasonable likelihood that the petitioner would prevail with respect to at least 1 of the claims challenged in the petition.”

Upon consideration of the Petition and the Preliminary Response, we conclude the information presented does not show there is a reasonable likelihood that Petitioner would prevail in establishing the unpatentability of claims 2, 5, 22, and 23. Accordingly, we do not authorize an *inter partes* review.

### A. The ’642 Patent

The ’642 patent relates generally to remote control devices for operating electronic consumer devices. Ex. 1001, 1:6–9. As background, a remote control device typically controls a selected electronic consumer device by transmitting to the electronic consumer device infrared signals that contain key codes of a codeset associated with the electronic consumer device. *Id.* at 1:21–25. Each key code corresponds to a function of the selected electronic consumer device, such as power on or off, volume up or down, or channel up or down. *Id.* at 1:25–28. Different manufacturers use distinct codesets, so a single remote control device that may be used to

operate multiple electronic devices must store a large number of different codesets. *Id.* at 1:39–47.

The system and method described in the '642 patent enable a single remote control device to operate multiple electronic consumer devices without requiring the codeset associated with each device to be stored on the remote control device. *Id.* at 1:59–62. A key code generator device, such as a set-top box, receives a keystroke indicator signal from a remote control device. *Id.* at 1:62–64. The keystroke indicator signal contains an indication of a key on the remote control device that was pressed by a user and that corresponds to a function of the selected electronic consumer device. *Id.* at 1:66–2:2. The key code generator device identifies the particular codeset for communicating with the selected electronic consumer device. *Id.* at 1:63–66. Using the codeset and the pressed key indication, the key code generator device generates a key code and modulates that key code onto a radio frequency carrier signal, thereby creating a key code signal. *Id.* at 2:2–5. In one embodiment, the key code generator device transmits the key code signal to the electronic consumer device, causing the electronic consumer device to perform the desired function. *Id.* at 2:16–21.

*B. Illustrative Claim*

Claim 2, the only independent claim challenged by Petitioner, is illustrative of the claimed subject matter of the '642 patent:

2. A method comprising:
  - (a) receiving a keystroke indicator signal from a remote control device, wherein the keystroke indicator signal indicates a key on said remote control device that a user has selected;
  - (b) generating a key code within a key code generator device using the keystroke indic[a]tor signal;

(c) modulating said key code onto a carrier signal, thereby generating a key code signal; and

(d) transmitting said key code signal from said key code generator device to an electronic consumer device.

*Id.* at 10:22–32.

*C. Asserted Grounds of Unpatentability*

Petitioner asserts that the challenged claims are unpatentable based on the following grounds (summarized at Pet. 6–7):

Reference[s]	Basis	Challenged Claims
Geiger <sup>2</sup>	§ 102(b) or § 103(a)	2 and 5
Geiger, Admitted Prior Art, and Teskey <sup>3</sup>	§ 103(a)	22 and 23
Levine <sup>4</sup>	§ 102(b) or § 103(a)	2
Levine, Geiger, Admitted Prior Art, and Teskey	§ 103(a)	5, 22, and 23
Niles <sup>5</sup>	§ 102(b) or § 103(a)	2
Niles, Geiger, Admitted Prior Art, and Teskey	§ 103(a)	5, 22, and 23
Sato <sup>6</sup>	§ 102(b) or § 103(a)	2
Sato, Geiger, Admitted Prior Art, and Teskey	§ 103(a)	5, 22, and 23
Sasaki <sup>7</sup>	§ 102(b) or § 103(a)	2 and 5

<sup>2</sup> U.S. Patent No. 5,081,534, issued Jan. 14, 1992 (Ex. 1003, “Geiger”).

<sup>3</sup> Int’l Patent Application Publ’n No. WO 99/33192 A1, published July 1, 1999 (Ex. 1009, “Teskey”).

<sup>4</sup> U.S. Patent No. 5,365,282, issued Nov. 15, 1994 (Ex. 1004, “Levine”).

<sup>5</sup> Niles Audio Corp., *IntelliControl Reference Manual, Version 8.1*, Apr. 2002 (Ex. 1005, “Niles”).

<sup>6</sup> U.S. Patent Application Publ’n No. 2002/0047944 A1, published Apr. 25, 2002 (Ex. 1006, “Sato”).

<sup>7</sup> Japanese Unexamined Patent Application Publ’n No. H7-336779, published Dec. 22, 1995 (Ex. 1007, “Sasaki”).



Reference[s]	Basis	Challenged Claims
Sasaki, Admitted Prior Art, and Teskey	§ 103(a)	22 and 23
Cohen <sup>8</sup>	§ 102(b) or § 103(a)	2 and 5
Cohen, Admitted Prior Art, and Teskey	§ 103(a)	22 and 23

## II. ANALYSIS

### A. Anticipation Grounds

Petitioner contends that independent claim 2 is anticipated by six different references: Geiger, Levine, Niles, Sato, Sasaki, and Cohen. Pet. 28–31, 35–36, 39–41, 44–47, 50–52, 55–57. Thus, Petitioner contends that each of the six references discloses, explicitly or inherently, each and every limitation of claim 2. *Id.*

In its Preliminary Response, Patent Owner argues that each reference fails to disclose one or more limitations of claim 2. Prelim. Resp. 9–12, 19–21, 27–29, 37–41, 48–49, 54–56. In particular, Patent Owner asserts that the following limitation is missing from each allegedly anticipatory reference: “modulating said key code onto a carrier signal, thereby generating a key code signal.” *Id.* at 10–12, 20–21, 28–29, 40–41, 48–49, 55–56. As explained below, we find this issue to be dispositive, and, therefore, we need not address Patent Owner’s additional arguments regarding anticipation.

We begin with Petitioner’s argument regarding anticipation of claim 2 by Geiger. In the method recited in claim 2, a key code signal is generated by modulating the key code onto a carrier signal, after which the key code signal is transmitted from the key code generator device to an electronic

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<sup>8</sup> U.S. Patent No. 5,235,414, issued Aug. 10, 1993 (Ex. 1008, “Cohen”).

consumer device. Ex. 1001, 10:30–33 (claim 2). Petitioner asserts that Geiger discloses transmitting a key code signal to an electronic consumer device via a wireless, infrared (IR) link. Pet. 30–31 (citing Ex. 1003, 5:11–17). With respect to the modulating limitation, Petitioner argues only that transmission of a key code via an infrared link “*requires* modulation of the code onto a carrier [signal].” Pet. 30 (citing Ex. 1010 ¶¶ 38–39) (emphasis added). In other words, Petitioner argues that Geiger inherently discloses modulating the key code onto a carrier signal because it discloses transmission of the key code via an infrared link.

“To establish inherency, the extrinsic evidence must make clear that the missing descriptive matter is *necessarily present* in the thing described in the reference, and that it would be so recognized by persons of ordinary skill.” *In re Robertson*, 169 F.3d 743, 745 (Fed. Cir. 1999) (emphasis added) (citation and internal quotation marks omitted). Here, Petitioner supports its inherency assertion with citation to the Declaration of Mr. James T. Geier. Pet. 30 (citing Ex. 1010 ¶¶ 38–39). The relevant statement from Mr. Geier’s Declaration reads: “Transmission of a wireless signal, and in particular, an IR signal necessarily requires modulation of the code data on a carrier signal. Indeed, this is acknowledged in the ’642 patent itself.” Ex. 1010 ¶ 39 (citing Ex. 1001, 4:34–38).

Petitioner’s argument and evidence do not show sufficiently that transmission of a key code via an infrared link necessarily requires modulation of the key code. The section of the ’642 patent cited by Mr. Geier merely describes an embodiment in which a key code generator device modulates a key code onto a carrier signal. Ex. 1001, 4:35–38. Nothing in the cited passage suggests, much less demonstrates, that infrared

transmission requires modulating a key code onto a carrier signal. Beyond his citation to the '642 patent, Mr. Geier provides only a conclusory statement that is without factual or evidentiary support. Such a statement is insufficient to support Petitioner's contention that transmission of a key code via an infrared link requires modulation of the code onto a carrier signal. *See* 37 C.F.R. § 42.65(a) ("Expert testimony that does not disclose the underlying facts or data on which the opinion is based is entitled to little or no weight."). As Petitioner relies only on Mr. Geier's conclusory declaration testimony, Petitioner has not shown sufficiently that Geiger inherently discloses "modulating said key code onto a carrier signal," as recited in claim 2.

Petitioner makes similar arguments for the other allegedly anticipatory references. For example, Petitioner asserts that each of Levine, Niles, and Cohen describes infrared transmission of a key code signal from a key code generator device to an electronic consumer device. Pet. 36 (citing Ex. 1004, 3:42–49);<sup>9</sup> *id.* at 41 (citing Ex. 1005, 5); *id.* at 57 (citing Ex. 1008, 4:62–64). Again, citing only conclusory statements from Mr. Geier's declaration testimony, Petitioner contends infrared transmission of a code inherently requires modulation of the code onto a carrier signal. *Id.* at 36, 41, 57 (citing Ex. 1010 ¶¶ 54–55, 65, 91–92). For the same reasons discussed above, Petitioner has not shown sufficiently that Levine, Niles, or Cohen inherently discloses "modulating said key code onto a carrier signal," as recited in claim 2.

As for the remaining two references, Petitioner asserts that Sato discloses transmitting a key code signal through an IEEE 1394 interface,

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<sup>9</sup> Petitioner mistakenly cites Exhibit 1004, 2:42–49.

Pet. 47 (citing Ex. 1006 ¶ 55), and Sasaki discloses transmitting key code signals from optical communication transmitting units, Pet. 52 (citing Ex. 1007 ¶ 10). With respect to the modulating limitation of claim 2, Petitioner asserts that transmission of key code signals requires modulation onto a carrier signal, citing similarly conclusory statements by Mr. Geier. Pet. 47, 51–52 (citing Ex. 1010 ¶¶ 78, 102–103). Mr. Geier provides no support for his broad statements that transmission of codes requires modulation onto a carrier signal. *See* Ex. 1010 ¶¶ 78, 102. As with the references that disclose infrared transmission, Petitioner has not shown sufficiently that either Sato or Sasaki inherently discloses “modulating said key code onto a carrier signal.”

For these reasons, the information presented does not show a reasonable likelihood that Petitioner would prevail in establishing that claim 2 is anticipated by Geiger, Levine, Niles, Sato, Sasaki, or Cohen or that claim 5, which depends from claim 2, is anticipated by Geiger, Sasaki, or Cohen.

#### *B. Single-Reference Obviousness Grounds*

As an alternative to each anticipation ground, Petitioner asserts that claim 2 (or claims 2 and 5) would have been obvious over the allegedly anticipatory reference. *E.g.*, Pet. 28 (“Claims 2 and 5 are anticipated by [Geiger] under 35 U.S.C. § 102(b), and if not anticipated, are obvious in light of [Geiger] under 35 U.S.C. § 103.” (emphasis omitted)). Petitioner, however, provides no substantive analysis for these single-reference obviousness grounds. In particular, the Petition does not identify differences between the prior art references and the claimed subject matter or explain why any such differences would have been obvious to a person of ordinary

skill in the art. *See Graham v. John Deere Co.*, 383 U.S. 1, 17–18 (1966) (holding that obviousness is resolved on the basis of underlying factual determinations, including any differences between the claimed subject matter and the prior art). Indeed, for most of the single-reference grounds, the Petition refers to obviousness or 35 U.S.C. § 103 only in the headings. When Petitioner does address obviousness based on a single reference in a detailed discussion section, Petitioner appears to conflate obviousness with inherent anticipation and fails to provide a sufficient obviousness analysis. *See* Pet. 36 (arguing that, with respect to anticipation or obviousness based on Levine, “[t]ransmission of a code *inherently or obviously* requires modulation of the code onto a carrier signal” (emphasis added)).

Accordingly, the information presented does not show a reasonable likelihood that Petitioner would prevail in establishing that claim 2 is unpatentable for obviousness based on Geiger, Levine, Niles, Sato, Sasaki, or Cohen alone, or that claim 5 is unpatentable for obviousness based on Geiger, Sasaki, or Cohen alone.

*C. Obviousness Grounds Based on Combinations of References*

Petitioner contends that claims 5, 22, and 23, which depend from claim 2, are unpatentable for obviousness over various combinations of references, each including one or more of the six references discussed above in combination with Teskey and prior art allegedly admitted in the '642 patent. *See* Pet. 6–7. Petitioner does not argue that Teskey or the admitted prior art teaches any of the limitations of claim 2, relying on the additional references only for the additional limitations recited in claims 5, 22, and 23. *See* Pet. 32–34, 37–39, 42–44, 47–50, 53–55, 58–59. As discussed above, Petitioner has not shown sufficiently that Geiger, Levine, Niles, Sato,

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Patent 7,589,642 B1

Sasaki, or Cohen teaches “modulating said key code onto a carrier signal, thereby generating a key code signal,” as recited in claim 2. Nor does Petitioner contend that Teskey or the admitted prior art cures this deficiency of Geiger, Levine, Niles, Sato, Sasaki, and Cohen. Therefore, on this record, the information presented does not show a reasonable likelihood that Petitioner would prevail in establishing that claims 5, 22, and 23 are unpatentable for obviousness over the combinations of references that include Teskey and allegedly admitted prior art.

### III. CONCLUSION

For the foregoing reasons, we determine that the information presented does not show a reasonable likelihood that Petitioner would prevail in establishing that claims 2, 5, 22, and 23 of the '642 patent are unpatentable.

### IV. ORDER

Accordingly, it is:

**ORDERED** that the petition is denied and no trial is instituted.

IPR2014-01082  
Patent 7,589,642 B1

FOR PETITIONER:

Douglas A. Miro  
[dmiro@ostrolenk.com](mailto:dmiro@ostrolenk.com)

Keith J. Barkaus  
[kbarkaus@ostrolenk.com](mailto:kbarkaus@ostrolenk.com)

Peter H. Kang  
[pkang@sidley.com](mailto:pkang@sidley.com)

Theodore W. Chandler  
[tchandler@sidley.com](mailto:tchandler@sidley.com)

Ferenc Pazmandi  
[fpazmandi@sidley.com](mailto:fpazmandi@sidley.com)

FOR PATENT OWNER:

Eric J. Maiers  
[maierse@gtlaw.com](mailto:maierse@gtlaw.com)

Michael A. Nicodema  
[nicodemam@gtlaw.com](mailto:nicodemam@gtlaw.com)

James J. Lukas  
[lukasj@gtlaw.com](mailto:lukasj@gtlaw.com)

Matthew J. Levinstein  
[levinsteinm@gtlaw.com](mailto:levinsteinm@gtlaw.com)

Robbie R. Harmer  
[harmer@gtlaw.com](mailto:harmer@gtlaw.com)

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DOCKET NO. 18-cv-01580	DATE FILED 9/5/2018	U.S. DISTRICT COURT Central District of California
PLAINTIFF UNIVERSAL ELECTRONICS INC., a Delaware Company		DEFENDANT ROKU, INC., a Delaware Company
PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
1 7,589,642	9/15/2009	Universal Electronics Inc.
2 8,004,389	8/23/2011	Universal Electronics Inc.
3 9,911,325	3/6/2018	Universal Electronics Inc.
4 9,716,853	7/25/2017	Universal Electronics Inc.
5 7,782,309	8/24/2010	Universal Electronics Inc.

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PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
1 7,821,504	10/26/2010	Universal Electronics Inc.
2 7,821,505	10/26/2010	Universal Electronics Inc.
3 7,895,532	2/22/2011	Universal Electronics Inc.
4 8,015,446	9/6/2011	Universal Electronics Inc.
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