US006763247B1

(12) **United States Patent**
Hollstrom et al.

(10) **Patent No.: US 6,763,247 B1**
(45) **Date of Patent: Jul. 13, 2004**

(54) **PORTABLE TELECOMMUNICATION APPARATUS FOR CONTROLLING AN ELECTRONIC UTILITY DEVICE**

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(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 607 days.

(21) Appl. No.: **09/714,884**

(22) Filed: **Nov. 17, 2000**

Related U.S. Application Data

(60) Provisional application No. 60/171,109, filed on Dec. 16, 1999.

(30) **Foreign Application Priority Data**

Dec. 1, 1999 (SE) 9904398

(51) **Int. Cl.**[7] **H04M 11/00**

(52) **U.S. Cl.** **455/556**; 455/352; 455/418; 455/566; 455/575.2

(58) **Field of Search** 455/556.1, 566, 455/575.5, 420, 557, 88, 352, 418, 419, 41.2; 370/260; 709/217; 379/56.1

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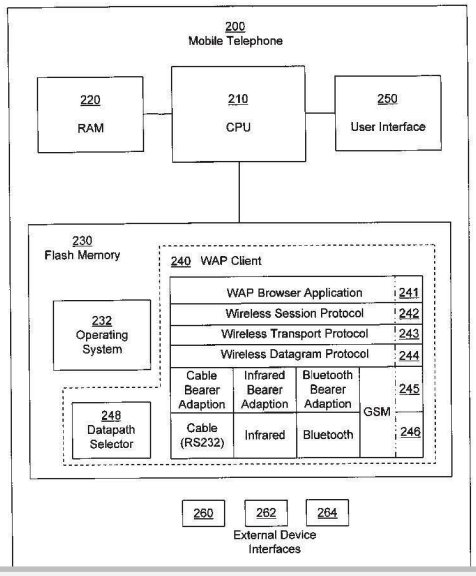
(57) **ABSTRACT**

A portable telecommunication apparatus **(200)** has a user interface **(250)**, a programmable controller **(210)**, a memory **(220, 230)** coupled to the controller, and an information access program **(240)**, such as a WAP browser, which is stored in the memory and is executable by the controller. The information access program provides access for a user to a global information network, such as Internet, through the user interface and a first wireless communication link. The apparatus also has an external device interface **(260, 262, 264)** for connecting an external device to the portable telecommunication apparatus over a second communication link. The information access program **(240)** allows the user to control the external device through the user interface **(250)**, the external device interface **(260, 262, 264)** and the second communication link.

14 Claims, 3 Drawing Sheets



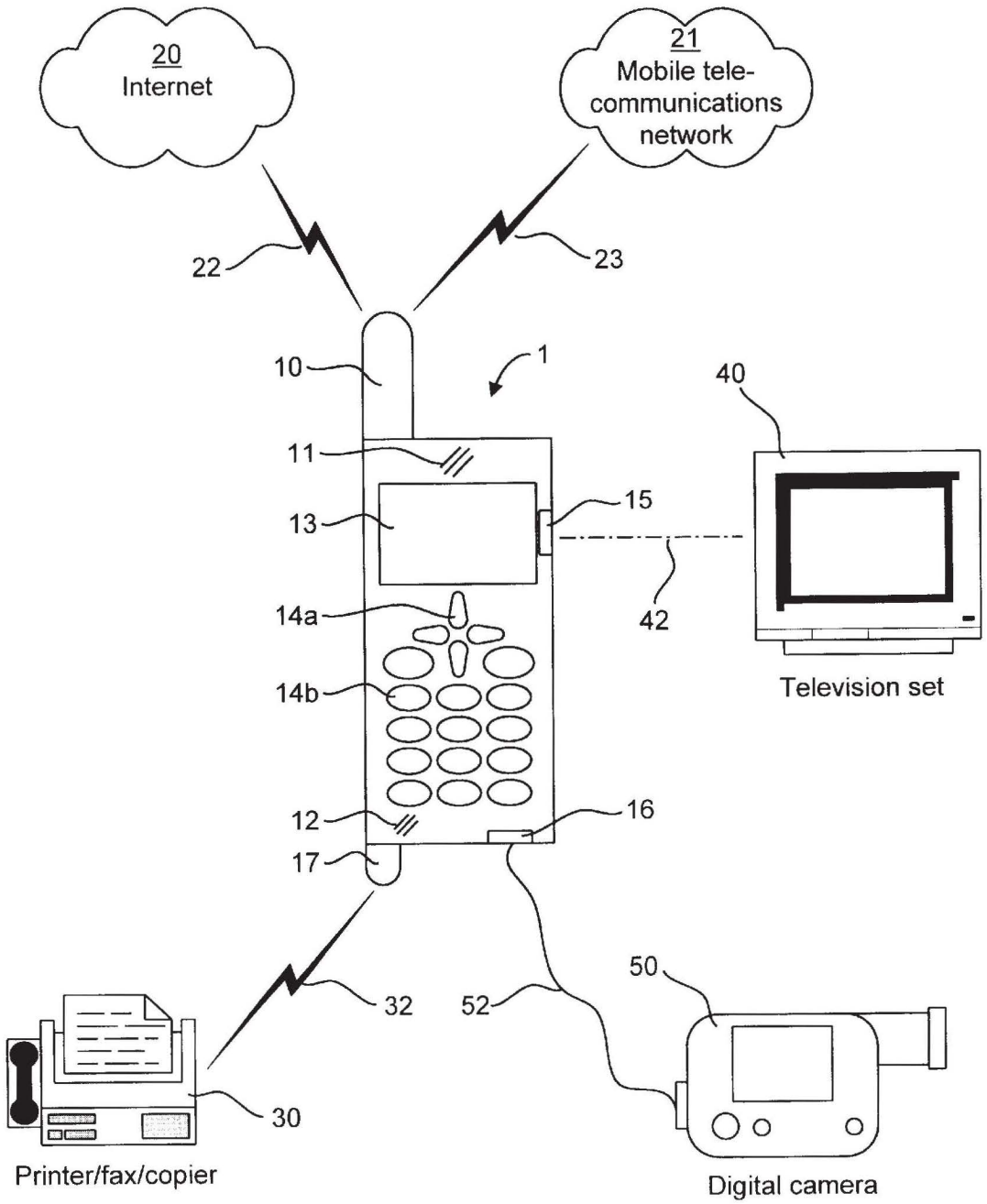


Fig 1

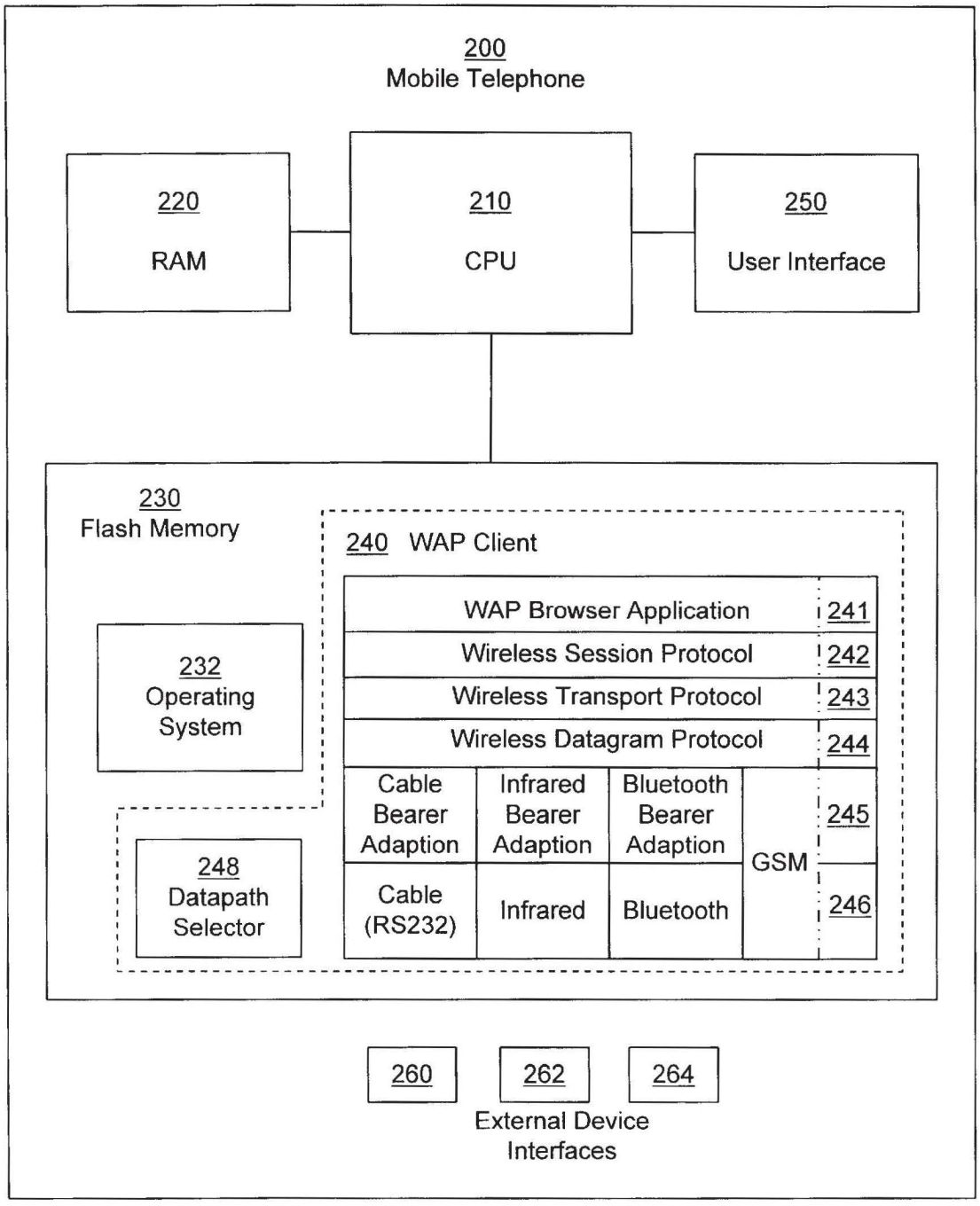


Fig 2

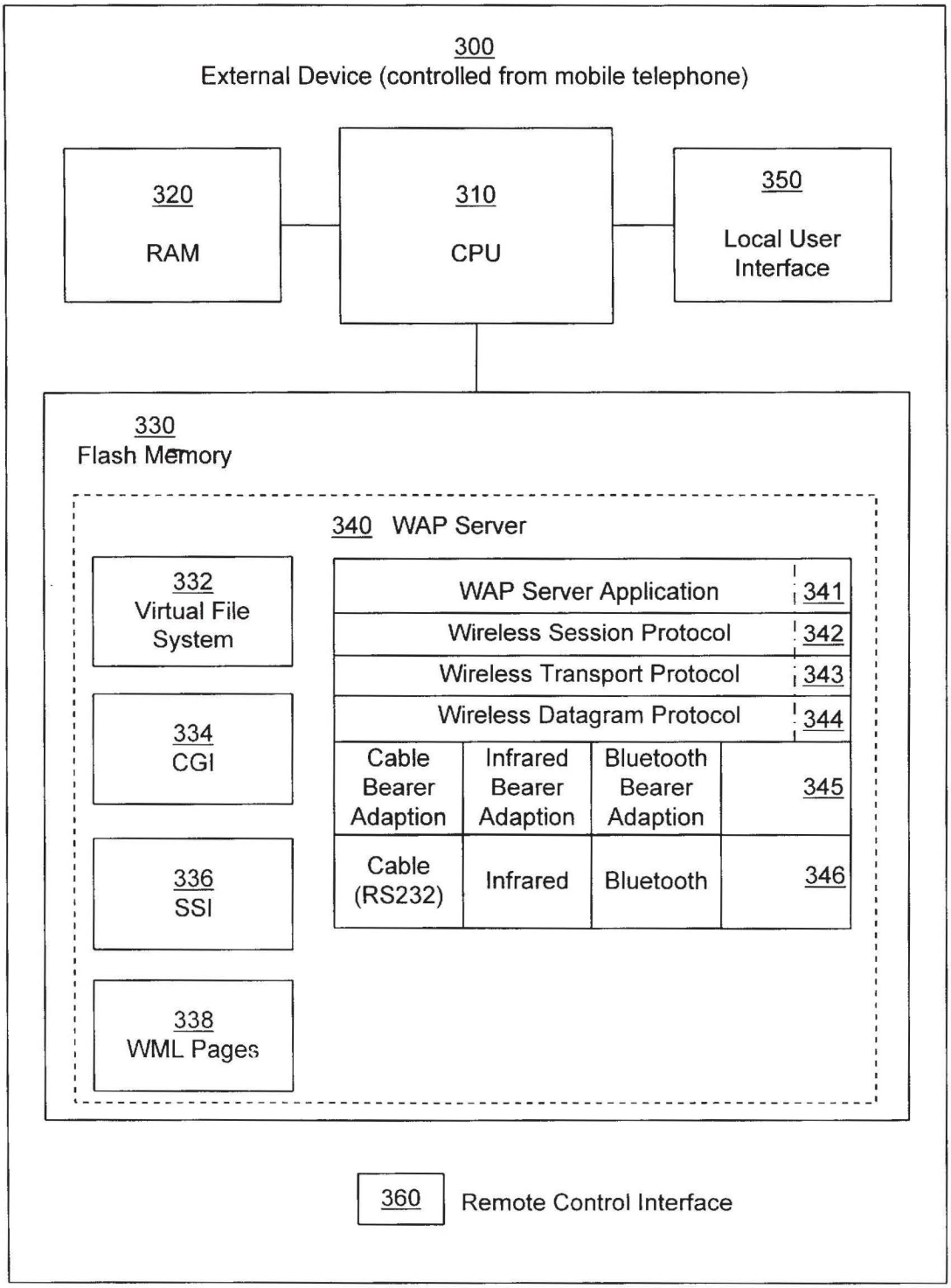


Fig 3

PORTABLE TELECOMMUNICATION APPARATUS FOR CONTROLLING AN ELECTRONIC UTILITY DEVICE

This application claims the benefit of U.S. Provisional Application No. 60/171,109, filed Dec. 16, 1999, the entire content of which is hereby incorporated by reference in this application.

TECHNICAL FIELD

The present invention relates to portable telecommunication apparatuses of the type comprising an information access program, such as a WAP browser, for allowing a user to access a global information network, such as Internet, through a wireless communication link. The invention also relates to electronic utility devices of the type which provides a functionality to a user and which has an external control interface, such as an infrared interface, for remotely controlling the functionality of the device.

More specifically, the invention is directed at the use of a portable telecommunication apparatus with an information access program according to the above for accessing, controlling and operating an electronic utility device through the information access program.

A portable telecommunication apparatus as set out above may for instance be a mobile or cellular radio telephone for GSM (Global System for Mobile Communication) or any other existing mobile telecommunications system. Moreover, an electronic utility device according to the above may be an advanced accessory for the mobile telephone, for instance a satellite navigation module (GPS), an FM radio or a digital video camera.

An electronic utility device according to the above may also be e.g. a video recorder, a digital camera, a television set, a hifi stereo, or an air conditioner.

The various examples of electronic utility devices given above all have in common that they may normally be operated by a remote control unit, such as an infrared remote control unit, in addition to a local user interface provided at a control panel of the device itself, such as a set of control buttons and LED indicators. Typically, a separate remote control unit is used for each individual electronic utility device.

Although some infrared remote control units are programmable and may therefore be adapted for use with several electronic utility devices, the existing approach has several drawbacks. First of all, remote control units have a tendency of disappearing in many homes, especially in families where small children are present. Furthermore, the various remote control units will have to be kept within reach of the intended user and will therefore occupy unnecessary storage space on desktops, table surfaces, etc. Moreover, the user interface of a typical remote control unit has a low level of user friendliness; the user interface is restricted to various small keys or buttons, at best in conjunction with a miniature LCD display. Finally, each type of remote control unit has its own philosophy behind the layout of the keys, etc. thereby making it hard for users to get familiar with all different types of remote control units.

Other electronic utility devices, such as printers, telefax machines, copying machines, or home appliances such as refrigerators or microwave ovens, are usually not operated from an infrared control unit. Instead, the user of these devices is restricted to a normally very limited local user

SUMMARY OF THE INVENTION

It is an object of the present invention to provide an easier way of accessing, controlling and operating electronic utility devices in a standardized and user-friendly fashion. A second object of the invention is to drastically reduce the number of required remote control units, specifically so that only one control apparatus is required for a large number of electronic utility devices, which may exist in the environment around a user. A third object is to provide an opportunity of remote control of electronic utility devices that traditionally are not provided with such an option. A fourth object is to provide an option for various types of electronic utility devices to connect to a global information network, such as the Internet, by using a single type of communication device, namely a portable telecommunication apparatus.

The above objects have been achieved by the inventive understanding that a portable telecommunication apparatus, preferably a cellular or mobile radio telephone, may be used for controlling various electronic utility devices.

According to a preferred embodiment of the invention, a mobile WAP (Wireless Application Protocol) telephone having a built-in WAP browser is designed to connect via a point-to-point communication link to an electronic utility device through an accessories interface, such as a short-range radio link, an infrared link or a serial cable link, wherein the external utility device is provided with an embedded WAP server and wherein this WAP server is capable of submitting digital information related to the functionality of the external utility device over the point-to-point communication link to the WAP browser of the mobile telephone. The embedded WAP server of the preferred embodiment contains WML (Wireless Markup Language) pages, which are transmitted to the WAP client of the mobile telephone and are presented to the user. The user may control the functionality of the external utility device through the user interface of the mobile telephone and the WAP client.

A solution to the above objects is defined by the appended independent patent claims. Other features, advantages and objects of the invention will appear from the following detailed disclosure of a preferred embodiment, from the appended drawings as well as from the subclaims.

BRIEF DESCRIPTION OF THE DRAWINGS

The present invention will now be described in more detail with reference to the appended drawings, in which

FIG. **1** is a schematic illustration of a mobile WAP telephone, which may be used for accessing the Internet, for performing traditional mobile telecommunications service calls (voice, data and fax), and for accessing, controlling and operating a plurality of electronic utility devices,

FIG. **2** is a schematic block diagram of a mobile telephone according to a preferred embodiment of the invention, and

FIG. **3** is a schematic block diagram of an external utility device according to the preferred embodiment.

DETAILED DISCLOSURE

FIG. **1** is intended to illustrate the general inventive concept according to the present invention, i.e. that a user of a mobile telephone **1** or another type of portable. telecommunication apparatus will be able to access, control and operate a plurality of telephone accessories, home appliances or other external electronic utility devices **30**, **40**, **50**

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