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(54) SYSTEM AND METHOD FOR REMOTE DISPLAY OF SECURITY VIDEO IMAGES

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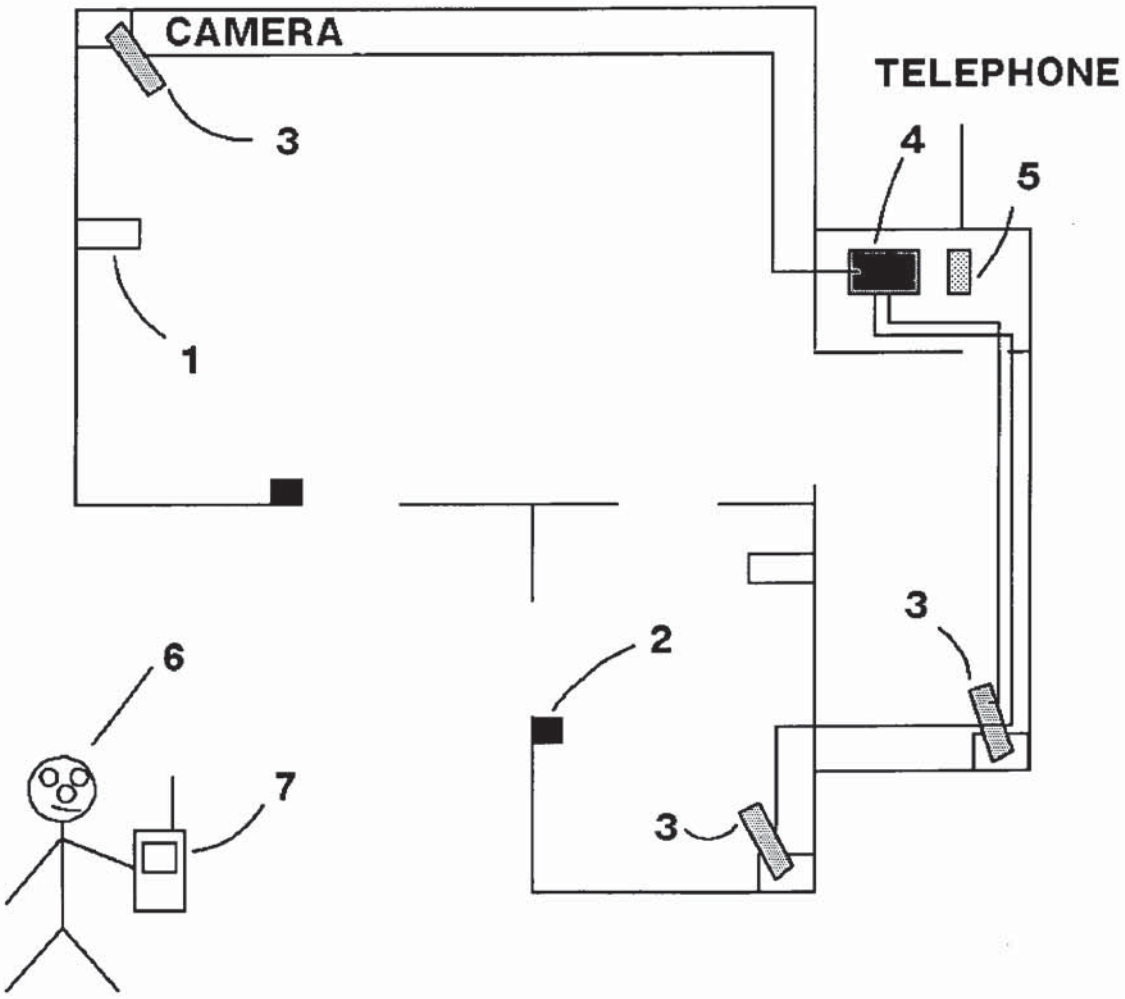
(57) **ABSTRACT**

A system and method for viewing video images from security systems on a remote handheld communications device like a cellular telephone. Video can be collected at a surveillance location, digitized and compressed, and streamed over a telephone line in a compressed form such as MPEG4 to a remote communications device. A menu on the remote device as well as a local joy-stick (or telephone navigation buttons) and other keys could allow selection of various cameras and/or pan, tilt and zoom functions on a particular camera. Split screen displays of more than one camera can be presented. In an alternative embodiment, the security video can be streamed from a web site.



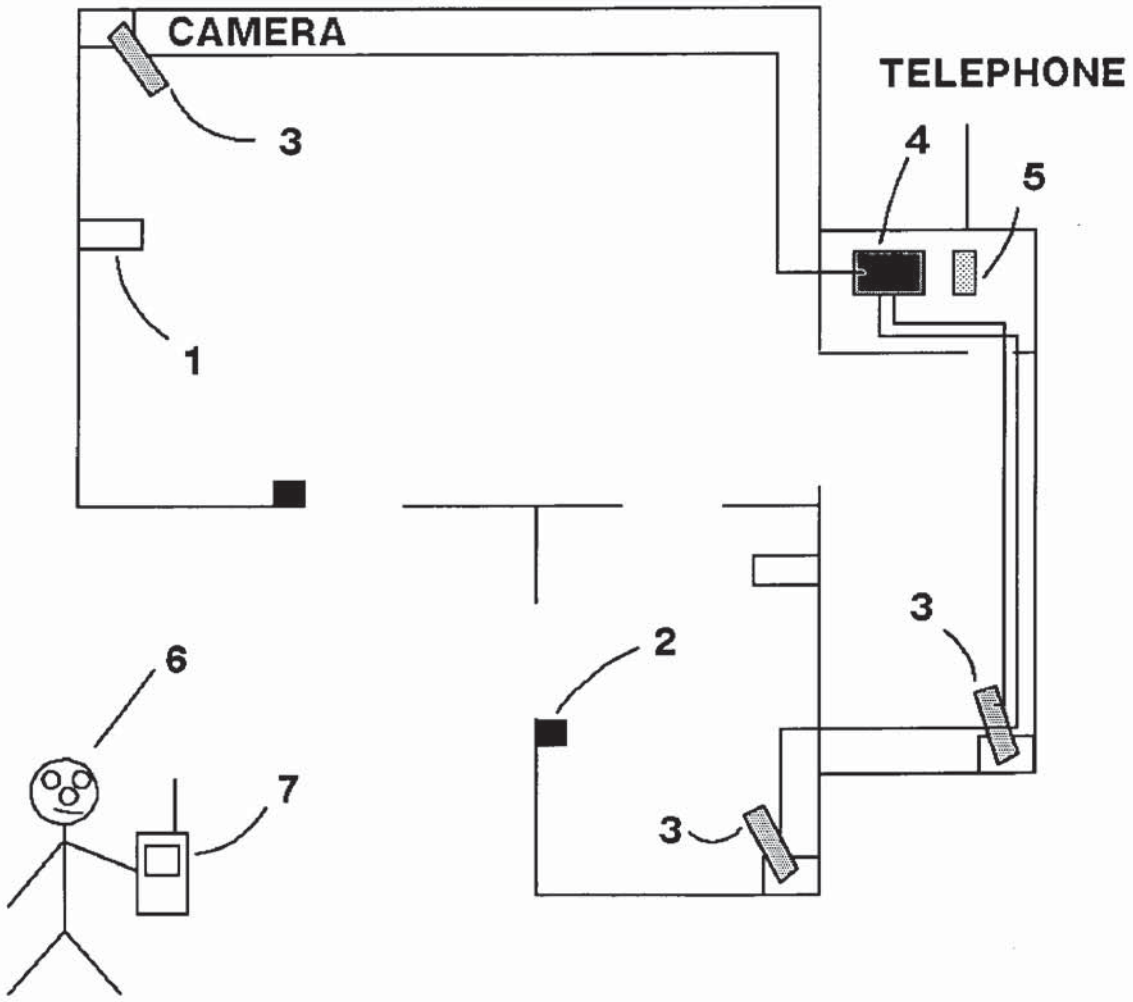


FIG. 1

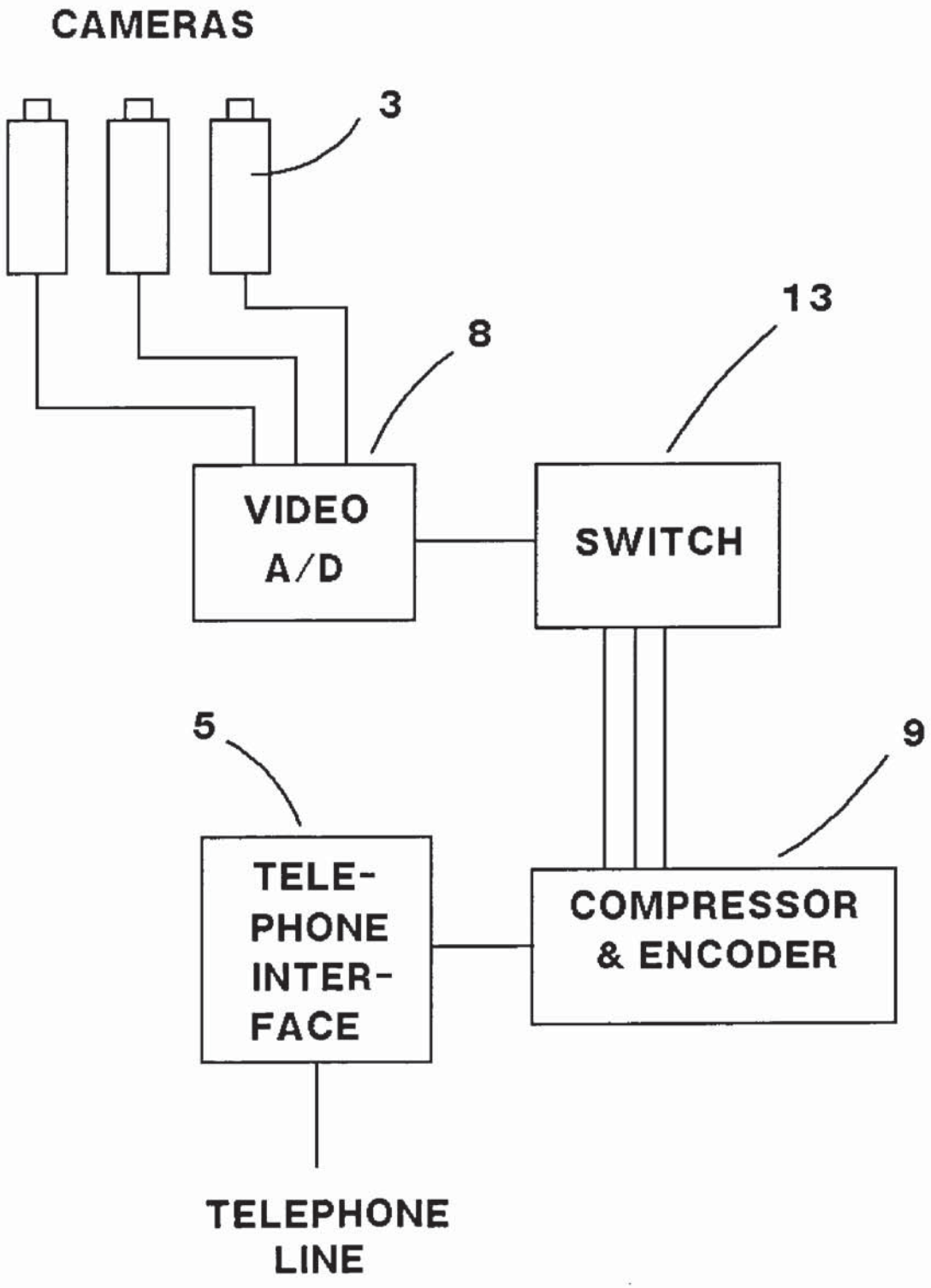


FIG. 2

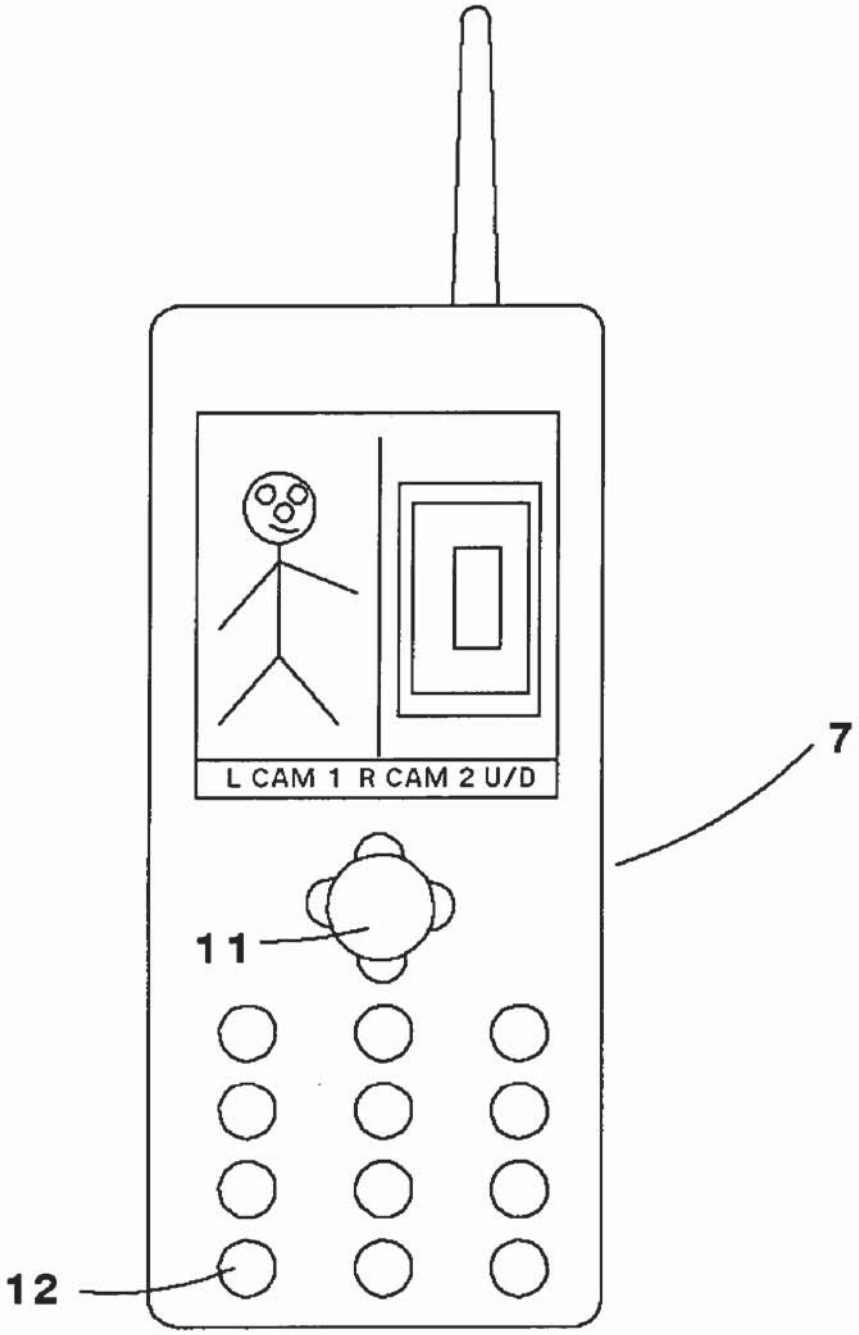


FIG. 3

SYSTEM AND METHOD FOR REMOTE DISPLAY OF SECURITY VIDEO IMAGES

BACKGROUND

[0001] 1. Field of the Invention

[0002] The present invention relates generally to the field of security video and more specifically to a system and method for the remote display of security video images.

[0003] 2. Description of the Prior Art

[0004] Video cameras are frequently used in security systems. Normally cameras are placed in rooms of buildings, in warehouse and store ceilings and in various other locations to monitor activity in a particular area. Video cameras can also be placed in different rooms of residential structures such as homes to provide primary or secondary security.

[0005] Prior art systems generally route video signals from cameras to a monitoring site proximate to the surveillance area or at a remote location. Normally, several monitors are located at this site where guards or other personnel view them. Alternatively, or in addition, video from the cameras can be recorded for later replay. In some security systems, video is continuously recorded in a circular buffer that is saved when an alarm occurs.

[0006] It is also known in the art to stream commercial video or movies to a cellular telephone. However, it would be advantageous to be able to control and view images from security cameras on a remote handheld mobile device such as a cellular telephone.

SUMMARY OF THE INVENTION

[0007] The present invention relates to a security system with video cameras that provide video surveillance of a predetermined residential or commercial area along with a control point for receiving video signals from each of the video cameras and a communications interface device for interfacing with the control point. The communications interface device generally receives command signals from a user where the command signals specify one or more of the video cameras as selected video cameras, and the control point supplies a transmission signal representative of at least one of the video signals to the communications interface device. The present invention can also include a hand-held mobile communication device remote from the control point that receives transmission signals from the communications interface device, selects particular video cameras from which the user wants to view images, and displays video images from at least one of the selected video cameras. The handheld mobile communications device can be a cellular telephone or any other portable communications device.

[0008] The present invention allows a remote user to dial in or otherwise connect with their residence or other protected building, area or asset and view real-time streamed video from security cameras on a handheld communications device like a cellular telephone. The user, by interfacing with a menu, can select and command up video from one or more of the cameras.

DESCRIPTION OF THE FIGURES

[0010] FIG. **2** shows a block diagram of an embodiment present invention.

[0011] FIG. **3** shows a remote, handheld communications device with a split screen and menu displayed.

[0012] Several drawings and illustrations have been presented to better aid in the understanding of the present invention. The scope of the present invention is not limited to the embodiments shown in the drawings.

DESCRIPTION OF THE INVENTION

[0013] The present invention relates to a system and method of displaying and controlling images from security systems on a remote, handheld communications device like a cellular telephone.

[0014] Turning to FIG. **1**, a typical security system is shown for a residential location. Several motion detectors **1**, access control switches **2** and video cameras **3** cover the surveillance area. In particular, each video camera produces a stream of continuous video that is wired back to a collection point **4** in the residence. The collection point **4** can be coupled to a telephone or other communications interface **5** that allows access to the public switched telephone network (PSTN) or access to a network or any other type of wired or wireless communications. A remote user **6** can command up display of video from any of the cameras **3** on a handheld communications device **7** such as a cellular telephone by calling a particular telephone number, accessing a particular web-site or by any other access method. While a residence is shown in FIG. **1**, the present invention also relates to any type of area including, but not limited to, commercial buildings or locations such as office buildings, parking lots, restaurants or warehouses.

[0015] The collection point **4** can generally combine or switch the video. In addition, video may be compressed at this point. In one embodiment of the present invention, the collection point can act as a video compressor and switch so that various of the video feeds can be fitted into the bandwidth provided by a commercial telephone line. The telephone interface **5** can provide access to a regular telephone line (known as "plain old telephone service" POTS), or to a dedicated wider bandwidth service such as a T1 line, ISDN, fiber optic or other dedicated data service including a wireless service.

[0016] A block diagram of an embodiment of the present invention is shown in FIG. **2**. Here several video feeds from cameras **3** can be combined and compressed so that they can be made available to leave the residence on a POTS or telephone line or otherwise. Black and white security camera video generally occupies a bandwidth of from around 2 to 5 MHz and is usually analog in nature. Several standard video formats are in general use including NTSC, PAL, SECAM, S-Video and RS-170 and others. The embodiment shown in FIG. **2** uses black and white cameras producing NTSC video with a bandwidth of around 5 MHz. Horizontal and vertical synchronization and blanking are contained in the NTSC signal according to the standard. While black and white is preferred because of possible lower bandwidth and greater simplicity in compression, color video and coding is within the scope of the present invention.

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