A system and a method for disconnecting a communication device (214) from a communication line (222) thereby freeing the communication line for other communications such as emergency communications are disclosed. A signal detector (210) monitors the communication line for the presence of a predefined signal. Upon detecting the predefined signal, the signal detector causes a switch (224) or relay to disconnect the communication device (214) from the communication line (222). A remote device is utilized for detecting a predefined condition at a strategic location. Upon the remote device detecting the predefined condition, either via direct detection or via actuation by an operator, a transmitter in the remote device transmits a signal to a receiver coupled to the switch, thereby disconnecting the communication device from the communications line. When the invention disconnects the communication device, the communication line is free for other communications.
| Codes used to identify States party to the PCT on the front pages of pamphlets publishing international applications under the PCT. |
SYSTEM AND METHOD FOR AUTOMATIC CONTROL OF A
COMMUNICATION DEVICE

FIELD OF THE INVENTION
The present invention generally relates to the field of computer based
information handling systems, and particularly to communications control.

BACKGROUND OF THE INVENTION
With the proliferation of information handling systems such as the personal
computer into the home or business environment, many systems or fax machines are
configured to transmit faxes or data, or to connect to on-line services, during
predetermined time periods. Such predetermined time periods are usually off-peak
hours (i.e. nights or weekends) in order to not tie up the computer system, fax
machine and phone lines during busier daytime hours. On-line connections and
transmissions during off-peak hours is further utilized to take advantage of lower
communication charges typically offered for off-peak hours. More often that not, a
single telephone line is shared among both standard voice communications and fax or
data transmission. Thus, while the computer system is on line, the telephone line is
tied up, thereby preventing its use for other purposes.

Alarm systems are also prevalent in many households and businesses.
Typically, the alarm system is configured to automatically dial the proper authorities,
or an agency responsible for contacting the proper authorities, during an emergency
condition or condition such as a burglary or fire. However, since most homes and
small businesses have only a single telephone line, if the computer system or fax
machine were downloading data or transmitting faxes during an emergency situation,
the alarm system would be unable dial the proper authorities or agency. Even without
an automatic dialing alarm system, if the computer system were using the telephone
line during an emergency, a human operator would be unable to use a telephone to
make an emergency telephone call without first disabling the computer or physically
pulling the phone cord from the outlet which could waste valuable time during an emergency. During a fire, for example, the computer system may be located in a room where the computer system is interposed by smoke or fire, making access to the computer system extremely dangerous or impossible. It would therefore be highly desirable to provide a system that would disconnect a computer system, modem or fax machine from outside telephone lines during an emergency situation.

In a typical household or business situation where two or more devices share a single communications line, only one device is capable of communicating over the communications line at a time. For example, a first user such as a child in one room may be connected to the Internet with a computer using a standard telephone line thereby preventing a second user such as a parent from placing a telephone call over the telephone line while the first user is connected to the same telephone line. It would be highly desirable to provide a system and method that would disconnect a first communications device from a communications line such that an other device may utilize the communications line.

**SUMMARY OF THE INVENTION**

The present invention is directed to a system and a method for disconnecting a communication device from a communications line thereby freeing the communications line for other communications. In one embodiment of the invention, the system comprises a switching device for coupling the communication device to the communications line and a signal detector for causing the switching device to disconnect the communication device from the communications line upon detecting a predefined signal on the communications line. In another embodiment, the system comprises a switching device for coupling the communication device to the communications line, a remote device operatively disposed to detect a condition, the remote device including a transmitter for transmitting a signal upon the detection of the condition, and a receiver for causing the switching device to disconnect the communication device from the communications line upon receiving the signal from the remote device.

In one embodiment of the invention, the method comprises the steps of monitoring the communications line for the presence of an emergency signal and
disconnecting the communication device from the communications line upon detecting the presence of a predetermined signal on the communications line. In another embodiment of the invention, the method comprises the steps of detecting an emergency condition with a remote device, transmitting an emergency signal to a receiver upon detecting an emergency condition, receiving the emergency signal from the remote device with the receiver, and disconnecting the communication device from the communications line upon receiving the emergency signal.

It is to be understood that both the foregoing general description and the following detailed description are exemplary and explanatory only and are not restrictive of the invention as claimed.

The accompanying drawings, which are incorporated in and constitute a part of the specification, illustrate an embodiment of the invention and together with the general description, serve to explain the principles of the invention.

**BRIEF DESCRIPTION OF THE DRAWINGS**

The numerous objects and advantages of the present invention may be better understood by those skilled in the art by reference to the accompanying figures in which:

FIG. 1 is a block diagram of an information handling system in accordance with the present invention;

FIG. 2 is a block diagram of an emergency communications disconnect system in accordance with the present invention;

FIG. 3 is a block diagram of an emergency communications disconnect system of the present invention showing conceptually a communications line access controller in accordance with the present invention;

FIG. 4 is a block diagram of an emergency communications disconnect system of the present invention showing a wireless link between a communications line access controller and remote device; and

FIG. 5 is a diagrammatic illustration of an emergency communications disconnect system of the present invention.
DETAILED DESCRIPTION OF THE INVENTION

Reference will now be made in detail to the presently preferred embodiment of the invention, an example of which is illustrated in the accompanying drawings.

Referring now to FIG. 1, a hardware system in accordance with the present invention is shown. The hardware system shown in FIG. 1 is generally representative of the hardware architecture of an information handling system of the present invention. Information handling system 100 is controlled by a central processing system 102. Central processing system 102 includes a central processing unit such as a microprocessor or microcontroller for executing programs, performing data manipulations and controlling the tasks of information handling system 100. Communication with central processor 102 is implemented through a system bus 110 for transferring information among the components of information handling system 100. Bus 110 may include a data channel for facilitating information transfer between storage and other peripheral components of the hardware system. Bus 110 further provides the set of signals required for communication with central processing system 102 including a data bus, address bus, and control bus. Bus 110 may comprise any state of the art bus architecture according to promulgated standards, for example industry standard architecture (ISA), extended industry standard architecture (EISA), Micro Channel Architecture (MCA), peripheral component interconnect (PCI) local bus, standards promulgated by the Institute of Electrical and Electronics Engineers (IEEE) including IEEE 488 general-purpose interface bus (GPIB), IEEE 696/S-100, and so on. Other components of information handling system 100 include main memory 104, auxiliary memory 106, and an auxiliary processing system 108 as required. Main memory 104 provides storage of instructions and data for programs executing on central processing system 102. Main memory 104 is typically semiconductor based memory such as dynamic random access memory (DRAM) and or static random access memory (SRAM). Auxiliary memory 106 provides storage of instructions and data that are loaded into main memory 104 before execution. Auxiliary memory 106 may include semiconductor based memory such as read-only memory (ROM), programmable read-only memory (PROM) erasable programmable read-only memory (EPROM), electrically erasable read-only memory (EEPROM), or flash memory (block oriented memory similar to EEPROM). Auxiliary memory 106
may also include a variety of non-semiconductor based memories, including but not limited to magnetic tape, drum, floppy disk, hard disk, optical, laser disk, compact disc read-only memory (CD-ROM), digital versatile disk read-only memory (DVD-ROM), digital versatile disk random-access memory (DVD-RAM), etc. Other varieties of memory devices are contemplated as well. Information handling system 100 may optionally include an auxiliary processing system 108 which may be a digital signal processor (a special-purpose microprocessor having an architecture suitable for fast execution of signal processing algorithms), a back-end processor (a slave processor subordinate to the main processing system), an additional microprocessor or controller for dual or multiple processor systems, or a coprocessor.

Information handling system 100 further includes a display system 112 for connecting to a display device 114, and an input/output (I/O) system 116 for connecting to one or more I/O devices 118, 120 up to N number of I/O devices 122. Display system 112 may comprise a video display adapter having all of the components for driving the display device, including video random access memory (VRAM), buffer, and graphics engine as desired. Display device 114 may comprise a cathode ray-tube (CRT) type display such as a monitor or television, or may comprise alternative type of display technologies such as a liquid-crystal display (LCD), a light-emitting diode (LED) display, or a gas or plasma display. Input/output system 116 may comprise one or more controllers or adapters for providing interface functions between the one or more I/O devices 118-122. For example, input/output system 116 may comprise a serial port, parallel port, infrared port, network adapter, printer adapter, radio-frequency (RF) communications adapter, universal asynchronous receiver-transmitter (UART) port, etc., for interfacing between corresponding I/O devices such as a mouse, joystick, trackball, trackpad, trackstick, infrared transducers, printer, modem, RF modem, bar code reader, charge-coupled device (CCD) reader, scanner, compact disc (CD), compact disc read-only memory (CD-ROM), digital versatile disc (DVD), video capture device, touch screen, stylus, electroacoustic transducer, microphone, speaker, etc. Input/output system 116 and I/O devices 118-122 may provide or receive analog or digital signals for communication between information handling system 100 of the present invention and external devices, networks, or information sources. Input/output system 116 and I/O devices 118-122
preferably implement industry promulgated architecture standards, including Ethernet IEEE 802 standards (e.g., IEEE 802.3 for broadband and baseband networks, IEEE 802.3z for Gigabit Ethernet, IEEE 802.4 for token passing bus networks, IEEE 802.5 for token ring networks, IEEE 802.6 for metropolitan area networks, and so on), Fibre Channel, digital subscriber line (DSL), asymmetric digital subscriber line (ADSL), frame relay, asynchronous transfer mode (ATM), integrated digital services network (ISDN), personal communications services (PCS), transmission control protocol/Internet protocol (TCP/IP), serial line Internet protocol/point to point protocol (SLIP/PPP), and so on. It should be appreciated that modification or reconfiguration of information handling system 100 of FIG. 1 by one having ordinary skill in the art would not depart from the scope or the spirit of the present invention.

Referring now to FIG. 2, an emergency communications disconnect system of the present invention is shown. The emergency system 200 includes a detector 210 for detecting an emergency event or condition. For example, detector 210 may comprise a smoke detector for detecting smoke from a fire in the building in which detector 210 is installed. Detector 210 may comprise any similar type of emergency condition detector device, such as a radon gas detector, carbon monoxide gas detector, motion sensor, heat detector, etc. Emergency system 200 may further include an actuator 212 for manually indicating an emergency condition. Actuator 212 may be a lever or button to be pulled or depressed by a human operator to indicate or signal an emergency condition. In the embodiment of the invention shown in FIG. 2, detector and actuator 212 communicate with an alarm system 220 via a local network 208. Alarm system 220 is connected to an outside communication line 222. For example, detector 210 or actuator 212 sends an alarm signal to alarm system 220 via network 208.

Upon receipt of the alarm signal, alarm system 220 implements an appropriate emergency action such as turning on an audible alarm, flashing alarm lights, turning on a back up lighting or power system, or turning on a sprinkler system, for example. Further, alarm system 220 may be adapted to dial an outside agency via communications line 222 to notify the proper authorities of the emergency condition. For example, if detector 210 detects an intruder, alarm system 220 dials local law enforcement officials. If detector 210 is a smoke or fire detector, or if actuator 212 is
a fire alarm button, alarm system 220 dials local fire fighting officials. If actuator 212 is a medical alert button, alarm system 220 may dial for an ambulance. Communications line 222 is typically a standard voice telephone line connected to the voice network of the local phone company. A standard telephone 218 may be connected to outside communications line 222 via network 208. Alternatively, communications line 222 may comprise any various communication system or standard as described with respect to the input and output system 116 of FIG. 1 (e.g., ISDN network, coaxial cable network, fiber optic network). As an alternative, detector 210 and actuator 212 may include components enabling the transmission of an emergency signal directly to an outside agency via communications line 222 without the use of alarm system 220.

Typically, most households and businesses have only a single outside communications line 222. Thus, when it is desired to connect a communication device 214 to outside communication line 222, utilization of other devices such as telephone 218 or alarm system 220 is precluded. Communication device 214 may comprise a facsimile transmission machine (fax machine), modem, network adapter or similar device. Communication device 214 connects to network 208 which may be, for example, a telephone system, and communications line 222 via a communications access controller 216. Communications access controller 216 allows communication device 214 to transmit and receive information over communications line 222 as it would normally operate if communications device 214 were directly connected to communications line 222. In the event of an emergency, access controller 216 disconnects communication device 214 from network 208, thereby freeing other devices such as telephone 218 to communicate via outside communications line 222.

Access controller 216 may be, for example, a stand alone unit, may be integrated within communication device 214, or may be integrated within telephone 218 or alarm system 220. As can be seen in FIG. 2, detector 210 and actuator 212 may communicate with alarm system 220 via a communication network that is separate from network 209.

Referring now to FIG. 3, the emergency system of FIG. 2 is shown providing further detail of the communications access controller. Communications access controller 216 comprises a switching device 224 connected between communication
device 214 and communications line 222. Switching device 224 may comprise any device able to perform a switching function to control the connection and disconnection of communication device 214 over communications line 222. For example, switching device 224 may comprise a relay, transistor, logic circuit, logic gate, latch, flip-flop, etc.

A tone or pulse detector 226 is connected to the output of switching device 224 and connected to communications line 222 via feedback line 206. Tone or pulse detector 226 thereby detects signals appearing on communication line 222, and may be referred to generically as a signal detector. Tone/pulse detector 226 is operatively connected to switching device 224 and controls the switching functions of switching device 224 in response to signals (i.e. tones or pulses) present on communications line 222. For example, while communication device 214 is transmitting information via communications line 222, telephone 218 is unable to communicate via communications line 222. However, telephone 218 is capable of generating dual-tone multifrequency (DTMF) tones or pulses. The tones or pulses generated by telephone 218 are detectable by tone/pulse detector 226 since both access controller 216 and telephone 218 are connected together in parallel via network 208. The tones or pulses generated by telephone are electrically superimposed upon the signals of communication device 214 present on communications line 222 as predicted by superposition theory.

When a human operator picks up the handset of telephone 218, the operator may generate a predetermined tone or pulse sequence by entering the sequence into the numeric pad of telephone 218. When tone/pulse detector 226 detects the predetermined tone or pulse sequence, detector 226 controls switching device 224 to disconnect communication device 214 from network 208, thereby freeing communications line 222 for transmission of an emergency call from telephone 218. For example, in most jurisdictions, the numerical sequence 911 is the number utilized for automatic dialing of an emergency operator or agency. Tone/pulse detector 226 may be adapted to detect a 911 DTMF tone or pulse sequence generated by telephone 218. In one embodiment of the invention, since the 911 tone or pulse sequence is typically not transmitted over communications line 222 while in use by communications device 214, tone/pulse detector 226 may automatically disconnect
communications line 222, send a “hang-up” or “disconnect” signal over communications line 222, and regenerate the tone or pulse sequence generated by telephone 218.

In an alternative embodiment, tone/pulse detector 226 is configured to receive a predetermined code entered into telephone 218 by the human operator before dialing of the outside number. The code may be any predetermined code suitable or convenient for the operator. For example, the code may be “123”, or merely a single key such as the pound (“#”) key, depressed for a predetermined duration. Upon receipt of the predetermined code, tone/pulse detector 226 controls switching device 224 to disconnect communication device 214 from communications line 222, freeing the line for a phone call by the operator. Additionally, alarm system 220 may also be programmed to send the predetermined code to tone/pulse detector 226 during an emergency thereby freeing communications line 222 for use by alarm system 220.

For example, a first user such as a child may be connected to the Internet with communication device 214 (e.g., a computer) disposed in a first room using communications line 222 (e.g., a telephone line) which may be the only communications line in the household. A second user such as a parent may desire to make a phone call with telephone 218 disposed in another room of the household. Tone/pulse detector 226 detects a tone or a pulse signal generated by telephone 218, either automatically or by having the parent enter a predetermined code with the telephone keypad. Upon detecting the signal, tone/pulse detector 226 activates switching device 224 to disconnect the computer from the telephone line so that the parent may place a telephone call with telephone 218. Switching device 224 may permanently disconnect communication device (i.e. the computer) from communications line 222 such that communication device will have to reestablish the previous connection when the parent completes the telephone call. Alternatively, tone/pulse detector 226 may detect when communications with telephone 226 are terminated such that switching device 224 may automatically reestablish previous communications with communication device 214 (e.g., reconnect the computer to the Internet) such that the previous communications are automatically resumed.

Referring now to FIG. 4, an emergency disconnect system in accordance with the present invention is shown, illustrating an embodiment utilizing a wireless
communications link. Communication access controller 216 includes a receiver 238 coupled to an appropriate wireless signal receptor device 236 (e.g., antenna). Receiver 238 is adapted to receive a wireless communication signal transmitted from a remote device 228 distally disposed with respect to access controller 216. The wireless communications may comprise any various signal transmission means. The wireless communications may comprise radio-frequency signals or infrared signals, for example. Remote device 228 is placed remotely from access controller 216 in a location strategically selected to detect the desired emergency event. Remote device 228 includes its own power supply, for example a battery, or may operate from ac power. Remote device 228 comprises a detector or actuator 230 for detecting emergency conditions or for indicating an emergency condition when actuated by a human operator (e.g., a lever is pulled or a button is depressed.) Detector/actuator 230 sends an emergency indication signal to transmitter 232 disposed within remote device 228. Upon receipt of an emergency indication signal, transmitter 232 transmits the signal to access control device 216 via a signal transmission device 234 (e.g., antenna).

Referring now to FIG. 5, an emergency disconnect system in accordance with the present invention is diagrammatically shown. Computer system 242 is connected to an outside communications line 222 via a relay or switch 224. Communication device 214 may be a device installed in and operated from an information handling system such as personal computer 242. Communication device 214 may be a modem card, fax/modem card, network adapter, etc. adapted for transmitting and receiving data over an outside communications line 222. Communications device 214 may physically exist as a hardware device or may be strictly a software communications device, or a combination of hardware and software. Access controller 216 may be a physical unit external to computer system 242 in which case access controller 216 is physically connected between computer system 242 and outside communications line 222. For example, the output of a modem installed in computer device 242 connects to an input of access controller 216. The output of access controller 216 connects to a jack or socket which (not shown) which provides a connection to outside line 222.

Alternatively, access controller 216 may be embodied on a hardware card that is installed in computer 242 as an input/output device of computer system 242.
analogous to an input/output device 118-122 of information handling system 100 shown in FIG. 1. Further, access controller 216 may be integrated with the hardware or software of communications device 214 designed to be operated from computer system 242. Additionally, access controller 216 may be integrated within the input/output system of computer system 242 analogous to input/output system 116 of FIG. 1. In any case, access controller 216 and emergency disconnect system 200 of the present invention may be implemented, at least in part, from program code executing from main memory or auxiliary memory within computer system 242 analogous to main memory 104 and auxiliary memory 106 of computer based information handling system 100 shown in FIG. 1. The program code implementing emergency disconnect system 200 may be tangibly embodied on a computer readable medium readable by an information handling system such as computer system 242. Emergency system 200 may be utilized with computer system 242, facsimile machine, modem, network card, or similar type of information handling system.

Although the invention has been described with a certain degree of particularity, it should be recognized that elements thereof may be altered by persons skilled in the art without departing from the spirit and scope of the invention. One of the embodiments of the invention can be implemented as sets of instructions resident in the main memory 104 of one or more computer systems configured generally as described in FIG. 1. Until required by the computer system, the set of instructions may be stored in another computer readable memory such as the auxiliary memory 106 of FIG. 1, for example in a hard disk drive or in a removable memory such as an optical disk for utilization in a CD-ROM drive, a floppy disk for utilization in a floppy disk drive, a floptical disk for utilization in a floptical drive, or a personal computer memory card for utilization in a personal computer card slot. Further, the set of instructions can be stored in the memory of another computer and transmitted over a local area network or a wide area network, such as the Internet, when desired by the user. Additionally, the instructions may be transmitted over a network in the form of an applet that is interpreted after transmission to the computer system rather than prior to transmission. One skilled in the art would appreciate that the physical storage of the sets of instructions or applets physically changes the medium upon
which it is stored electrically, magnetically, chemically, physically, optically or holographically so that the medium carries computer readable information.

It is believed that the system and method for disconnecting a communication device during an emergency condition of the present invention and many of its attendant advantages will be understood by the foregoing description, and it will be apparent that various changes may be made in the form, construction and arrangement of the components thereof without departing from the scope and spirit of the invention or without sacrificing all of its material advantages. The form herein before described being merely an explanatory embodiment thereof. It is the intention of the following claims to encompass and include such changes.
CLAIMS

What is claimed is:

1. A system for disconnecting a communication device from a communications line thereby freeing the communications line for other communications, comprising:
   a processor for executing instructions on an information handling system, and a memory, coupled to said processor, for storing the instructions, said processor being coupled to the communication device;
   a switching device for coupling the communication device to the communications line; and
   a signal detector for causing said switching device to disconnect the communication device from the communications line upon detecting a predetermined signal on said communications line such that other communications may occur over the communications line.

2. A system as claimed in claim 1, wherein said signal detector comprises a tone detector for detecting a tone signal on said communications line.

3. A system as claimed in claim 1, wherein said signal detector comprises a pulse detector for detecting a pulse signal on said communications line.

4. A system as claimed in claim 1, wherein said switching device comprises a relay.

5. A system as claimed in claim 1, wherein said switching device comprises a transistor.

6. A system as claimed in claim 1, wherein said switching device comprises a logic circuit.
7. A system as claimed in claim 1, said signal detector monitoring for termination of the other communications and causing said switching device to reconnect the communication device to the communications line upon termination of the other communications.

8. A system as claimed in claim 1, the predetermined signal being an emergency signal.

9. A system as claimed in claim 1, the other communications being emergency communications.
10. A system for disconnecting a communication device from a communications line thereby freeing the communications line for other communications, comprising:
   a processor for executing instructions on an information handling system, and a memory, coupled to said processor, for storing the instructions, said processor being coupled to the communication device;
   a switching device for coupling the communication device to the communications line;
   a remote device for detecting a condition, said remote device including a transmitter for transmitting an emergency signal upon detection of the condition; and
   a receiver for causing said switch to disconnect the communication device from the communications line upon receiving the signal from said remote device such that other communications may occur over the communications line.

11. A system as claimed in claim 10, wherein the signal comprises a radio-frequency signal.

12. A system as claimed in claim 10, wherein the signal comprises an infrared signal.

13. A system as claimed in claim 10, wherein said switching device comprises a relay.

14. A system as claimed in claim 10, wherein said switching device comprises a transistor.

15. A system as claimed in claim 10, wherein said switching device comprises a logic circuit.

16. A system as claimed in claim 10, wherein the remote device includes a detector, coupled to said transmitter, for detecting an emergency condition.
17. A system as claimed in claim 10, wherein the remote device includes an actuator, coupled to said transmitter, for indicating an emergency condition upon actuation thereof.

18. A system as claimed in claim 10, said receiver monitoring for termination of the other communications and causing said switching device to reconnect the communication device to the communications line upon termination of the other communications.

19. A system as claimed in claim 10, the condition being an emergency condition.

20. A system as claimed in claim 10, the other communications being emergency communications.
21. A method for disconnecting a communication device from a communications line thereby freeing the communications line for other communications, comprising:

   monitoring the communications line for the presence of a predefined signal;

and

   disconnecting the communication device from the communications line upon detecting the presence of the predefined signal on the communications line such that other communications may occur over the communications line.

22. A method as claimed in claim 21, wherein said monitoring step includes monitoring the communications line for the presence of a signal generated by a telephone.

23. A method as claimed in claim 21, wherein said monitoring step includes monitoring the communications line for the presence of a signal generated by an alarm system.

24. A method as claimed in claim 21, wherein said monitoring step includes monitoring the communications line for the presence of a signal generated by an emergency condition detector.

25. A method as claimed in claim 21, wherein said monitoring step includes monitoring the communications line for the presence of a signal generated by an emergency condition actuator.

26. A method as claimed in claim 21, the predefined signal being an emergency signal.

27. A method as claimed in claim 21, the other communications being emergency communications.
28. A method for disconnecting a communication device from a communications line thereby freeing the communications line for other communications, comprising:
   detecting a predefined condition with a remote device;
   transmitting a signal to a receiver upon detecting the predefined condition;
   receiving the signal from the remote device with the receiver; and
   disconnecting the communication device from the communications line upon receiving the signal such that other communications may occur over the communications line.

29. A method as claimed in claim 28, wherein said detecting step includes detecting an emergency condition with an emergency condition detector.

30. A method as claimed in claim 28, wherein said detecting step includes indicating an emergency condition with an emergency condition actuator.

31. A method as claimed in claim 28, the predefined condition being an emergency signal.

32. A method as claimed in claim 28, the other communications being emergency communications.
33. A computer readable medium whose contents cause an information handling system to perform steps for disconnecting a communication device from a communications line thereby freeing the communications line for other communications, the method steps comprising:

monitoring the communications line for the presence of a predefined signal;

and

disconnecting the communication device from the communications line upon detecting the presence of the predefined signal on the communications line such that other communications may occur over the communications line.

34. A computer readable medium as claimed in claim 33, wherein said monitoring step includes monitoring the communications line for the presence of an emergency signal generated by a telephone.

35. A computer readable medium as claimed in claim 33, wherein said monitoring step includes monitoring the communications line for the presence of an emergency signal generated by an alarm system.

36. A computer readable medium as claimed in claim 33, wherein said monitoring step includes monitoring the communications line for the presence of an emergency signal generated by an emergency condition detector.

37. A computer readable medium as claimed in claim 33, wherein said monitoring step includes monitoring the communications line for the presence of an emergency signal generated by an emergency condition actuator.
38. A computer readable medium whose contents cause a computer to perform method steps for disconnecting a communication device from a communications line thereby freeing the communications line for other communications, the method steps comprising:
   detecting a predefined condition with a remote device;
   transmitting a signal to a receiver upon detecting the predefined condition;
   receiving the signal from the remote device with the receiver; and
   disconnecting the communication device from the communications line upon receiving the signal such that other communications may occur over the communications line.

39. A computer readable medium as claimed in claim 38, wherein said detecting step includes detecting an emergency condition with an emergency condition detector.

40. A computer readable medium as claimed in claim 38, wherein said detecting step includes indicating an emergency condition with an emergency condition actuator.
41. A system for disconnecting a communication device from a communications line thereby freeing the communications line for other communications, comprising:

means for executing instructions on an information handling system, and
means, coupled to said processor, for storing the instructions, said executing means being coupled to the communication device;

means for coupling the communication device to the communications line; and

means for causing said coupling means to disconnect the communication device from the communications line upon detecting a predetermined signal on the communications line such that other communications may occur over the communications line.

42. A system for disconnecting a communication device from a communications line thereby freeing the communications line for other communications, comprising:

means for executing instructions on an information handling system, and
means, coupled to said executing means, for storing the instructions, said processor being coupled to the communication device;

means for coupling the communication device to the communications line;

means for detecting a condition, said detecting means including a transmitter for transmitting an emergency signal upon detection of the condition; and

means for causing said switch to disconnect the communication device from the communications line upon receiving the signal from said detecting means such that other communications may occur over the communications line.
**INTERNATIONAL SEARCH REPORT**

**A. CLASSIFICATION OF SUBJECT MATTER**

IPC(61) H04M 11/04
US CL 379/39

According to International Patent Classification (IPC) or to both national classification and IPC

**B. FIELDS SEARCHED**

Minimum documentation searched (classification system followed by classification symbols)


Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

**C. DOCUMENTS CONSIDERED TO BE RELEVANT**

<table>
<thead>
<tr>
<th>Category</th>
<th>Citation of document, with indication, where appropriate, of the relevant passages</th>
<th>Relevant to claim No.</th>
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<tr>
<td>X</td>
<td>US 5,038,372 A (ELMS et al.), 06 AUGUST 1991, figs. 1-3, col. 2 lines 4-68, col. 3 lines 1-68, col. 4 lines 1-68, col. 5 lines 1-68, col. 6 lines 1-68, col. 7 lines 1-68, col. 8 lines 1-12</td>
<td>1-4, 8-9, 21-22, 26-27, 3-34, 41</td>
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<td>Y</td>
<td>US 5,745,849 A (BRITTON) 28 APRIL 1998, figs. 1-4, col. 1 lines 58-67, col. 2 lines 1-50, col. 3 lines 28-67, col. 4 lines 1-67, col. 5 lines 1-54, col. 12 lines 34-44.</td>
<td>5-7, 13-15, 23-25, 35-37,</td>
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<td>X</td>
<td>US 4,847,892 A (SHELLY) 11 JULY 1989, figs. 1, col. 9 lines 32-39</td>
<td>10-12, 16-17, 19-20, 28-32, 38-40, 42</td>
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[X] Further documents are listed in the continuation of Box C. [ ] See patent family annex.

[X] later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

[X] document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

[X] document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combinations being obvious to a person skilled in the art

Document member of the same patent family

**Date of the actual completion of the international search**

13 AUGUST 1999

**Date of mailing of the international search report**

09 SEP 1999

Name and mailing address of the ISA US Commissioner of Patents and Trademarks

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Form PCT/ISA-210 (second sheet)(July 1992)
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<td>US 4,596,021 A (CARTER et al.) 17 JUNE 1986, fig. 1, col. 2 lines 42-68, col. 3 lines 1-25</td>
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</tbody>
</table>
B. FIELDS SEARCHED
Minimum documentation searched
Classification System: U.S.
379/39, 93.09, 93.11, 93.26, 93.35, 106.01, 106.03, 106.08, 37, 38, 40, 43, 44