

Invalidity of U.S. Patent No. 10,129,590 in view of Tee '758

This chart pertains to U.S. Patent No. 10,129,590 (the “’590 patent”). This chart is subject to all reservations, objections, and disclaimers in Samsung’s Invalidity Contentions and any amendment, supplement, or modification thereof, which are incorporated herein by reference in their entirety. This chart refers to the following prior art references:

US20060203758A1 (“Tee ’758”) was filed on September 27, 2005 and published September 14, 2006 and therefore qualifies as prior art to the ’590 patent under at least pre-AIA 35 U.S.C. § 102(a), (b), and (e).

Discovery is ongoing and Samsung will update this chart pursuant to Federal Rule of Civil Procedure 26(e), the Local Rules, and the Orders of record in this matter subject to further investigation and discovery regarding the reference, the Court’s construction of the claims at issue, and discovery generally, including third-party discovery.

Tee ’758 discloses the Asserted Claims of the ’590 Patent (claims 1, 5, 9–12, 15–20, and 23–25, as set forth in Maxell’s infringement contentions, served on January 11, 2024). To the extent it is found Tee ’758 does not expressly disclose certain limitations in the Asserted Claims, Tee ’758 renders obvious the Asserted Claims, either alone or in combination with other prior art identified in the cover pleading or herein, and/or in combination with the general knowledge of a person having ordinary skill in the art. In these contentions, Samsung has relied in part on Maxell’s infringement contentions. In those contentions, Maxell appears to pursue overly broad claim constructions in an effort to assert infringement where none exists and to accuse products that do not infringe the claims. Samsung’s assertion that a particular limitation is disclosed by a prior art reference and/or is disclosed in a particular manner may be based in part on Maxell’s apparent claim interpretations. Samsung does not admit that Maxell’s apparent claim interpretations are supportable or proper or that the claim limitations in question are definite or otherwise amenable to construction.

Samsung has endeavored to cite to the most relevant portions of the identified prior art, but other portions of the identified prior art may additionally disclose, either expressly or inherently, and/or render obvious one or more limitations of the asserted claims. The inclusion of specific details in some areas is not a concession that such details are required or that the omission of similar details in other areas is a defect. These citations to portions of any reference in this chart are exemplary only. Thus, Samsung reserves the right to rely on: (1) uncited portions of the identified prior art; (2) other prior art not identified herein; (3) references that show the state of the art (irrespective of whether such references themselves qualify as prior art to the asserted patents); (4) factual testimony from the inventors or authors of the prior art references, or purveyors of prior art devices; and/or (5) expert testimony, to provide context to or aid in understanding the prior art and the state of the art at the time of the alleged inventions.

’590 Patent Claim Limitation	Tee ’758 Exemplary Disclosure
[1pre] 1. A video processing apparatus, comprising:	To the extent the preamble is limiting, Tee ’758 discloses “[a] video processing apparatus.” For example:

Tee '758 at Figure 1

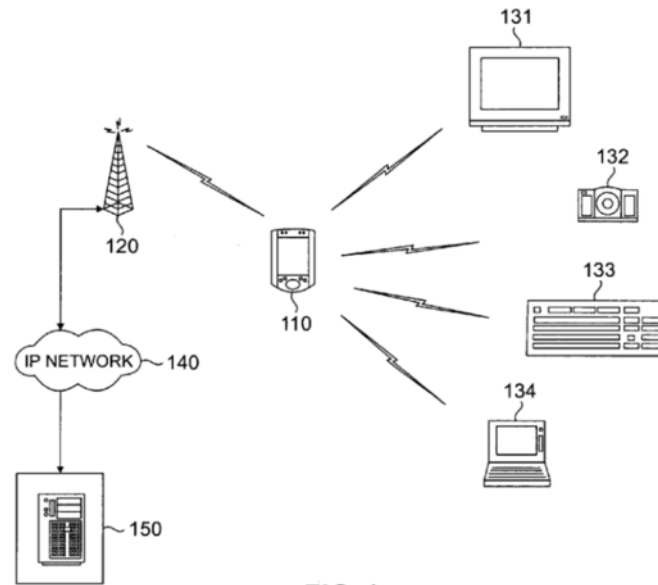


FIG. 1

Tee '758 at ¶ 6

A mobile terminal is provided. According to an advantageous embodiment, the mobile terminal comprises a local display capable of displaying multimedia data, a controller capable of transmitting the multimedia data to the local display, and a first transceiver capable of communicating with a remote display device. The controller is capable of comparing display parameter information associated with the external display device to display parameter information associated with the local display and, in response to the comparison, transmitting the multimedia data to the external display device via the first transceiver.

Tee '758 at ¶ 15

The mobile terminal disclosed herein overcomes the limitations of a small display screen by receiving video data (i.e., display data) over a first wireless interface and transmitting (or relaying) the video data over a second wireless interface to an external (or remote) device having a better (bigger) display, such as a television, a computer monitor, a laptop computer, the dashboard display of a car, a video projection device, and the like. For the purposes of this disclosure and the claims herein, the video data, which may also be referred to as multimedia data, is defined to include not only the video data itself, but may also include the audio data, text data, and control data that may accompany the video data.

Tee '758 at ¶ 22

According to an advantageous embodiment, mobile terminal 110 may relay a video stream to a remote device in order to allow the operator of mobile terminal 110 to view the video on a better display. By way of example, mobile terminal 110 may be receiving streaming video data from server 150 via IP network 140 and base station 120. The streaming video is displayed on the display of mobile terminal 110. At some point, mobile terminal 110 may be located near to television 131 and establish a wireless communication link via the short-range wireless protocol (e.g., IEEE-802.11x/802.15.3x) with television 131. Mobile terminal 110 may then request information from television 131 regarding the capabilities of the display screen of television 131.

Tee '758 at ¶ 23

Assuming television 131 is a more desirable display than mobile terminal 110, mobile terminal 110 may relay the streaming video signal to television 131 via the short-range (or PAN) wireless communication link. This may be done automatically, or mobile terminal 110 may prompt the operator of mobile terminal 110 to select television 131 before relaying the video signal. Similarly, mobile terminal 110 may transmit a video signal over the short-range PAN connection to computer 134, projector 132, or any other remote device that has a display screen.

Tee '758 at ¶ 24

It is not required that mobile terminal 110 receive an incoming video stream from base station 120. In an alternate scenario, mobile terminal 110 may execute a video application and/or a multimedia application that plays back a video file and/or multimedia file stored in memory in mobile terminal 110. Mobile terminal 110 then transmits the video (or multimedia) stream from the stored file to television 131 (or another device) for viewing.

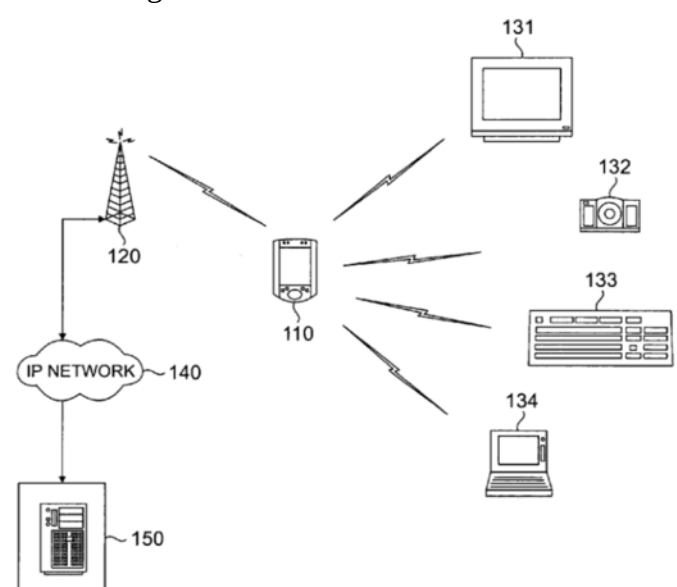
Tee '758 at ¶ 29

Additionally, depending on the distances involved, mobile terminal 110 may receive an incoming video and/or multimedia stream from any one of WAN transceiver 201, WLAN transceiver 202, and PAN transceiver 203 and may relay the video and/or multimedia stream to an external device using, for example, WLAN transceiver 202 or PAN transceiver 203. Essentially, this air interface functions similarly to I/O interface 235, but over the wireless link.

Tee '758 at ¶ 30

In one example, mobile terminal 201 may receive a video stream from BS 120 via WAN transceiver 201 and may relay the video stream over a short distance to a remote display device via WLAN transceiver 202 or PAN transceiver 203. This may occur when mobile terminal 201 communicates with BS 120 in a

'590 Patent Claim Limitation	Tee '758 Exemplary Disclosure
	cellular network and the remote display communicates with mobile terminal 110 using, for example, an IEEE-802.11x transceiver (i.e., communicates with WLAN transceiver 202) or a Bluetooth or IEEE-802.15.3x transceiver (i.e., communicates with PAN transceiver 203). Tee '758 at ¶ 31 In another example, mobile terminal 201 may receive a video stream from a base station or access point of a home or office WLAN via WLAN transceiver 202 and may relay the video stream over a short distance to a remote display device via PAN transceiver 203. This may occur when the base station or access point in the office WLAN communicates with mobile terminal 110 using, for example, an IEEE-802.11x transceiver and the remote display communicates with mobile terminal 110 using, for example, a high data rate Bluetooth transceiver that is capable of supporting the required video data throughput. Tee '758 at ¶ 32 In a third example, mobile terminal 201 may receive a video stream from a base station, an access point, or a video source device via PAN transceiver 203 and may relay the video stream over a short distance to a remote display device via WLAN transceiver 202. This may occur if the video source with wireless capability transmits a video stream to mobile terminal 110 using, for example, a high data rate Bluetooth transceiver and the remote display communicates with mobile terminal 110 using, for example, an IEEE-802.11x transceiver. Tee '758 at ¶ 33 Control processor 210 executes video/multimedia application program 290 in order to display video data on display 245. Control processor 210 executes video conversion program 270 in order to re-format (if necessary) the video data downloaded from server 150 through the one wireless interface (e.g., WAN transceiver 201) to a suitable format for re-transmission via another wireless interface (e.g., WLAN transceiver 202 or PAN transceiver 203). Additionally, video/multimedia application program 290 may retrieve video/multimedia data from video/multimedia file 280 and transmit a video stream to a remote device via a wireless interface. Advantageously, the wireless interface may have more than one connection at the same time. For example, PAN transceiver 203 may transmit video to television 131 while simultaneously communicating with wireless keyboard 240. To the extent Maxell contends Tee '758 does not disclose this limitation, a person of ordinary skill in the art would have readily arrived at this limitation by combining or modifying it in view of their general knowledge and/or the prior art references disclosed in the corresponding section of Samsung's Invalidity Contentions.

'590 Patent Claim Limitation	Tee '758 Exemplary Disclosure
[1a] a first radio communication circuit implementing a first transmission scheme having a first modulation scheme and a first transmission frequency band, the first radio communication circuit capable of transmitting video information by radio or receiving information by radio using the first transmission frequency band;	Tee '758 discloses “a first radio communication circuit implementing a first transmission scheme having a first modulation scheme and a first transmission frequency band, the first radio communication circuit capable of transmitting video information by radio or receiving information by radio using the first transmission frequency band.” For example: Tee '758 at Figure 1  FIG. 1

Tee '758 at Figure 2

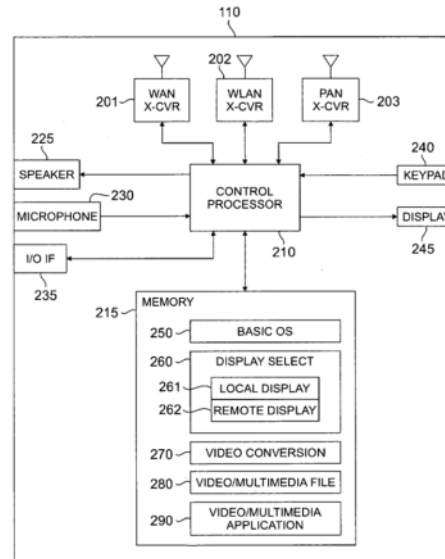


FIG. 2

Tee '758 at ¶ 6

A mobile terminal is provided. According to an advantageous embodiment, the mobile terminal comprises a local display capable of displaying multimedia data, a controller capable of transmitting the multimedia data to the local display, and a first transceiver capable of communicating with a remote display device. The controller is capable of comparing display parameter information associated with the external display device to display parameter information associated with the local display and, in response to the comparison, transmitting the multimedia data to the external display device via the first transceiver.

Tee '758 at ¶ 17

Generally, the first wireless interface supports mobile wireless communications, including, but not limited to IS-2000, 1xEV-DO, 1xEV-DV, GSM/GPRS/EDGE, 3GPP UTRAN, HSDPA/HSUPA, 3GPP EUTRAN, TD-CDMA, WiBro, WiMAX, IEEE-802.16x, IEEE-802.20, and IEEE-802.11x (e.g., WiFi) in a hotspot environment. The second wireless interface typically supports shorter range wireless communications, including, but not limited to IEEE-802.15.3x, MB-OFDM, UWB, Wireless USB, IEEE-802.11x (or WiFi), and a Bluetooth standard that supports high throughput applications

Tee '758 at ¶ 18

An exemplary mobile terminal may be used for mobile communications and as a gateway for a short-range wireless network, also called a personal area network (PAN). The mobile terminal may support a variety of mobile applications, including voice, multimedia (i.e., video, graphics, text, and audio downloads), video conferencing, web browsing, file download, VPN and Internet gaming. Advantageously, when the mobile terminal is near a higher quality display (e.g., a TV screen), the mobile terminal relays its video data to the external display device as well as to its internal display. This enables the operator of the mobile terminal to view the information on the higher quality display device, and to share the displayed information with other people at the same location, e.g., in a video conference call, or watching the latest broadcasting and streaming of News or events of common interests. Note that in the latter example, the source of information could be a remote Internet web server instead of a conventional TV broadcasting station. A remote Internet web server does not have the same geographical coverage limit as a conventional TV broadcasting station. In the case of group video conferencing using, for example, a digital camera phone, it would be more practical and ergonomically correct to have the received video data displayed on an external screen, while the phone camera captures and transmits the local user images.

Tee '758 at ¶ 20

Mobile terminal 110 is capable of communicating with one or more types of wireless wide-area networks (WANs), including conventional cellular networks and wireless local area networks (WLANs). By way of example, mobile terminal 110 may communicate with base station (BS) 120, which may be associated with a CDMA2000/1xEV-DO/1xEV-DV network, a GSM/GPRS/EDGE network, an IEEE-802.16x network, or the like. In other embodiments, base station 120 may communicate according to such wireless interface standards, or their evolutions, as 1xEV-DO, 1xEV-DV, GSM/GPRS/EDGE, 3GPP UTRAN, HSDPA/HSUPA, 3GPP EUTRAN, TD-CDMA, WiBro, WiMAX, IEEE-802.20, or IEEE-802.11x, among others. Base station 120 provides mobile terminal 110 with access to voice networks, such as the public switched telephone network (PSTN), and to data networks, including, for example, the Internet or proprietary Internet protocol (IP) networks. In the illustrated embodiment, BS 120 provides mobile terminal 110 with access to server 150 via IP network 140.

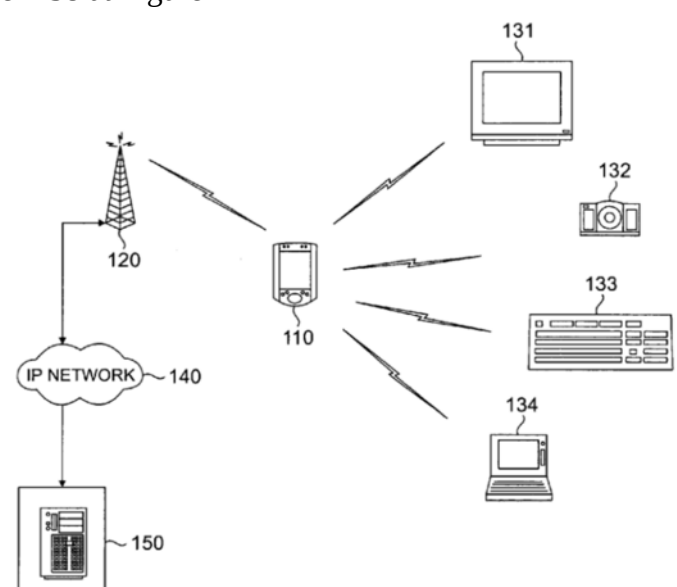
Tee '758 at ¶ 21

Mobile terminal 110 is also capable of communicating with one or more types of external (or remote) devices via a short-range wireless interface standard, such as IEEE-802.11x, ultra-wideband (UWB), IEEE-802.15.3x, MB-OFDM, Wireless USB, or a Bluetooth standard that supports high throughput applications, among others. It is assumed for the purposes of this disclosure that any such remote device

'590 Patent Claim Limitation	Tee '758 Exemplary Disclosure
	comprises a wireless transceiver that can communicate with mobile terminal 110 in order to establish a personal area network (PAN) connection. By way of example, mobile terminal 110 may communicate with television 131 (or computer monitor 131), projector 132, keyboard 133, and laptop (or handheld) personal computer (PC) 134. If the remote device is capable of displaying video (e.g., television 131), it is assumed that the wireless transceiver of the remote device supports a relatively high data rate that is suitable for video applications and/or multimedia applications. Tee '758 at ¶ 22 According to an advantageous embodiment, mobile terminal 110 may relay a video stream to a remote device in order to allow the operator of mobile terminal 110 to view the video on a better display. By way of example, mobile terminal 110 may be receiving streaming video data from server 150 via IP network 140 and base station 120. The streaming video is displayed on the display of mobile terminal 110. At some point, mobile terminal 110 may be located near to television 131 and establish a wireless communication link via the short-range wireless protocol (e.g., IEEE-802.11x/802.15.3x) with television 131. Mobile terminal 110 may then request information from television 131 regarding the capabilities of the display screen of television 131. Tee '758 at ¶ 24 Advantageously, mobile terminal 110 is also capable of establishing a communication link with keyboard 133 (or another input device such as an electronic notepad) via the short-range PAN connection in order to allow the operator of mobile terminal 110 to use keyboard 133 (or the other input device) in lieu of the keyboard or other control buttons on mobile terminal 110. By way of example, mobile terminal 110 may establish a Bluetooth connection to keyboard 133 in order to allow the operator to use keyboard 133 to control mobile terminal 110. In this scenario, the external keyboard, external display and the mobile terminal are connected in the form of a conventional computer, with air interface 1 connecting the computer (with the MT playing the role of the computing unit) to the Internet, and air interface 2 or 3 connecting the computer to the external keyboard and display. If air interface 2 can support both connections between the MT and keyboard or display simultaneously, it is not necessary to have air interface 3. Tee '758 at ¶ 25 FIG. 2 illustrates exemplary mobile terminal 110 in greater detail according to an exemplary embodiment of the disclosure. Mobile terminal 110 comprises wide-area network (WAN) transceiver (X-CVR) 201, wireless local area network (WLAN) transceiver (X-CVR) 202, and personal area network (PAN) transceiver (X-CVR) 203. In an embodiment, only one of WLAN transceiver 202 and PAN transceiver

'590 Patent Claim Limitation	Tee '758 Exemplary Disclosure
	203 may be employed. Mobile terminal 110 also comprises control processor 210, memory 215, speaker 225, microphone 230, input/output interface (I/O IF) 235, keypad 240 and display 245. Memory 215 stores basic operating system (OS) program 250, display select program 260, video conversion program 270, video/multimedia file 280, and one or more video application programs 290. Display select program 260 comprises local display parameters file 261 and remote display parameters file 262. Tee '758 at ¶ 26 Control processor 210 and memory 215 function as a controller that controls the overall operation of mobile terminal 110. Control processor 210 executes basic OS program 250 in order to control, among other things, transceivers 201, 202 and 203. Control processor 210 receives operator inputs from keypad 240 or another user input device (not shown) and displays data on display 245. If mobile terminal 110 is, for example, a cell phone, control processor 210 can receive a voice signal from microphone 230 and can send voice signals to speaker 225. I/O interface 235 allows control processor 210 to be coupled to, and communicate with, another device, including, for example, a docking station, a data cord, an operator input device, or the like. Tee '758 at ¶ 27 In the exemplary embodiment, control processor 210 uses WAN transceiver 201 to communicate over a wide area network. For example, WAN transceiver 201 may be a GSM/GPRS/EDGE transceiver, a CDMA2000/1xEV-DO transceiver, or an IEEE-802.16x transceiver that communicates with base station 120 of a wide-area network. Control processor 210 may use WLAN transceiver 202 to communicate in a wireless local area network (WLAN) environment, such as an office WLAN that may have a coverage area or range of several hundred feet. By way of example, WLAN transceiver 202 may be an IEEE-802.11x transceiver. Control processor 210 may use PAN transceiver 203 to communicate in a personal area network (PAN) environment, such as a Bluetooth or IEEE-802.15.3 communication link that may have a coverage area or range around 10-20 meters. Tee '758 at ¶ 28 In the illustrated embodiment in FIG. 2, three distinct transceivers are shown. However, this is by way of example only. Tee '758 at ¶ 28 In an alternate embodiment, mobile terminal 110 may communicate with BS 120 via a first air interface (or wireless interface) and with an external device that has a display screen via a second air interface (or wireless interface). Thus, mobile terminal 110 may comprise only two transceivers. Advantageously, one

'590 Patent Claim Limitation	Tee '758 Exemplary Disclosure
	or more of transceivers 201-203 may be based on software-defined radio (SDR) technology and therefore may be capable of communicating according to more than one wireless interface standard. Tee '758 at ¶ 36 Under control of display select program 260, control processor 210 compares the parameters in remote display parameters file 262 to the parameters in local display parameters file 261 and selects the display best suited to video/multimedia application program 290. If the display of the external device is selected, control processor 210 transfers the video/multimedia data to the appropriate one of transceivers 202 and 203. Control processor 210 may prompt the operator of mobile terminal 110 for permission to transmit video/multimedia data to the remote display device. Control processor 210 may also continue to send video/multimedia data to display 245 for simultaneous display. In an alternate embodiment, it may be assumed that the remote display is better than display 245. In such an embodiment, control processor 210 may select the remote display (with or without operator permission) without comparing parameters associated with display 245 and the remote display. Tee '758 at claim 1 1. A mobile terminal comprising: a local display capable of displaying multimedia data; a controller capable of transmitting the multimedia data to the local display; and a first transceiver capable of communicating with a remote display device, wherein the controller is capable of comparing display parameter information associated with the remote display device to display parameter information associated with the local display and, in response to the comparison, transmitting the multimedia data to the remote display device via the first transceiver. Tee '758 at claim 9 9. The mobile terminal as set forth in claim 1, further comprising a second transceiver capable of communicating with a wireless network. Tee '758 at claims 15–17 15. The mobile terminal as set forth in claim 9, wherein the first transceiver comprises a personal area network transceiver. 16. The mobile terminal as set forth in claim 15, wherein the personal area network transceiver comprises one of: an IEEE-802.15.3x transceiver, an MB-OFDM transceiver, a UWB transceiver, a wireless USB transceiver, an IEEE-802.11x transceiver, and a Bluetooth transceiver.

'590 Patent Claim Limitation	Tee '758 Exemplary Disclosure
	17. The mobile terminal as set forth in claim 9, wherein the second transceiver comprises one of an IS-2000 transceiver, a 1xEV-DO transceiver, a 1xEV-DV transceiver, a GSM/GPRS/EDGE transceiver, a 3GPP UTRAN transceiver, an HSDPA/HSUPA transceiver, a 3GPP EUTRAN transceiver, a TD-CDMA transceiver, a WiBro transceiver, a WiMAX transceiver, an IEEE-802.16x transceiver, an IEEE-802.20 transceiver, and an IEEE-802.11x transceiver. To the extent Maxell contends Tee '758 does not disclose this limitation, a person of ordinary skill in the art would have readily arrived at this limitation by combining or modifying it in view of their general knowledge and/or the prior art references disclosed in the corresponding section of Samsung's Invalidity Contentions.
[1b] a second radio communication circuit implementing a second transmission scheme having a second modulation scheme different from the first modulation scheme and a second transmission frequency band different from the first transmission frequency band, the second radio communication circuit capable of connecting by radio to an internet or a home network to transmit and receive information using the second transmission frequency band;	Tee '758 discloses “a second radio communication circuit implementing a second transmission scheme having a second modulation scheme different from the first modulation scheme and a second transmission frequency band different from the first transmission frequency band, the second radio communication circuit capable of connecting by radio to an internet or a home network to transmit and receive information using the second transmission frequency band.” For example: Tee '758 at Figure 1  FIG. 1

Tee '758 at Figure 2

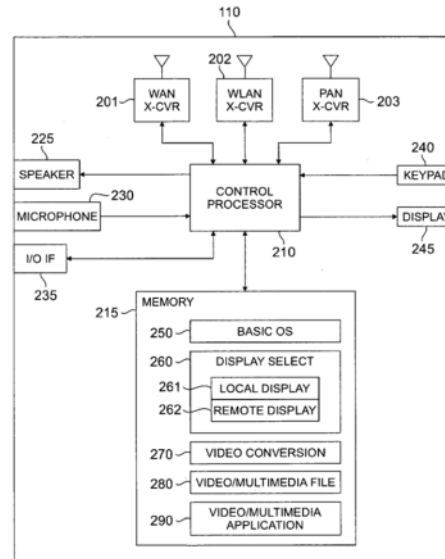


FIG. 2

Tee '758 at ¶ 6

A mobile terminal is provided. According to an advantageous embodiment, the mobile terminal comprises a local display capable of displaying multimedia data, a controller capable of transmitting the multimedia data to the local display, and a first transceiver capable of communicating with a remote display device. The controller is capable of comparing display parameter information associated with the external display device to display parameter information associated with the local display and, in response to the comparison, transmitting the multimedia data to the external display device via the first transceiver.

Tee '758 at ¶ 17

Generally, the first wireless interface supports mobile wireless communications, including, but not limited to IS-2000, 1xEV-DO, 1xEV-DV, GSM/GPRS/EDGE, 3GPP UTRAN, HSDPA/HSUPA, 3GPP EUTRAN, TD-CDMA, WiBro, WiMAX, IEEE-802.16x, IEEE-802.20, and IEEE-802.11x (e.g., WiFi) in a hotspot environment. The second wireless interface typically supports shorter range wireless communications, including, but not limited to IEEE-802.15.3x, MB-OFDM, UWB, Wireless USB, IEEE-802.11x (or WiFi), and a Bluetooth standard that supports high throughput applications

Tee '758 at ¶ 18

An exemplary mobile terminal may be used for mobile communications and as a gateway for a short-range wireless network, also called a personal area network (PAN). The mobile terminal may support a variety of mobile applications, including voice, multimedia (i.e., video, graphics, text, and audio downloads), video conferencing, web browsing, file download, VPN and Internet gaming. Advantageously, when the mobile terminal is near a higher quality display (e.g., a TV screen), the mobile terminal relays its video data to the external display device as well as to its internal display. This enables the operator of the mobile terminal to view the information on the higher quality display device, and to share the displayed information with other people at the same location, e.g., in a video conference call, or watching the latest broadcasting and streaming of News or events of common interests. Note that in the latter example, the source of information could be a remote Internet web server instead of a conventional TV broadcasting station. A remote Internet web server does not have the same geographical coverage limit as a conventional TV broadcasting station. In the case of group video conferencing using, for example, a digital camera phone, it would be more practical and ergonomically correct to have the received video data displayed on an external screen, while the phone camera captures and transmits the local user images.

Tee '758 at ¶ 20

Mobile terminal 110 is capable of communicating with one or more types of wireless wide-area networks (WANs), including conventional cellular networks and wireless local area networks (WLANs). By way of example, mobile terminal 110 may communicate with base station (BS) 120, which may be associated with a CDMA2000/1xEV-DO/1xEV-DV network, a GSM/GPRS/EDGE network, an IEEE-802.16x network, or the like. In other embodiments, base station 120 may communicate according to such wireless interface standards, or their evolutions, as 1xEV-DO, 1xEV-DV, GSM/GPRS/EDGE, 3GPP UTRAN, HSDPA/HSUPA, 3GPP EUTRAN, TD-CDMA, WiBro, WiMAX, IEEE-802.20, or IEEE-802.11x, among others. Base station 120 provides mobile terminal 110 with access to voice networks, such as the public switched telephone network (PSTN), and to data networks, including, for example, the Internet or proprietary Internet protocol (IP) networks. In the illustrated embodiment, BS 120 provides mobile terminal 110 with access to server 150 via IP network 140.

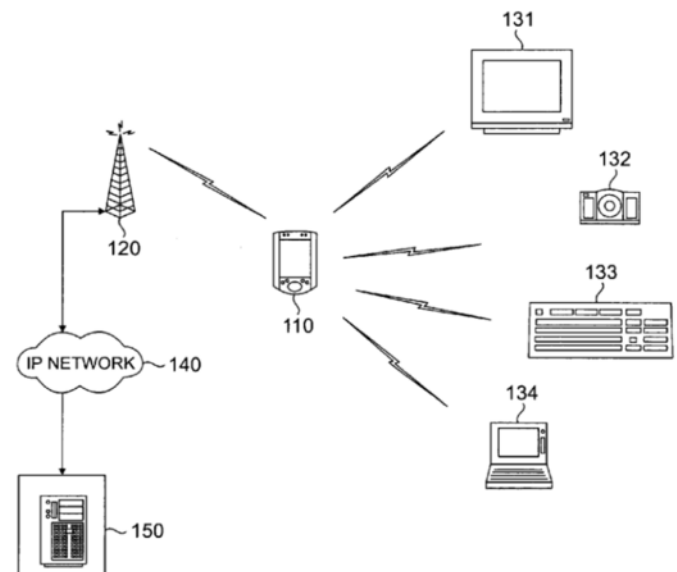
Tee '758 at ¶ 21

Mobile terminal 110 is also capable of communicating with one or more types of external (or remote) devices via a short-range wireless interface standard, such as IEEE-802.11x, ultra-wideband (UWB), IEEE-802.15.3x, MB-OFDM, Wireless USB, or a Bluetooth standard that supports high throughput applications, among others. It is assumed for the purposes of this disclosure that any such remote device

'590 Patent Claim Limitation	Tee '758 Exemplary Disclosure
	comprises a wireless transceiver that can communicate with mobile terminal 110 in order to establish a personal area network (PAN) connection. By way of example, mobile terminal 110 may communicate with television 131 (or computer monitor 131), projector 132, keyboard 133, and laptop (or handheld) personal computer (PC) 134. If the remote device is capable of displaying video (e.g., television 131), it is assumed that the wireless transceiver of the remote device supports a relatively high data rate that is suitable for video applications and/or multimedia applications. Tee '758 at ¶ 22 According to an advantageous embodiment, mobile terminal 110 may relay a video stream to a remote device in order to allow the operator of mobile terminal 110 to view the video on a better display. By way of example, mobile terminal 110 may be receiving streaming video data from server 150 via IP network 140 and base station 120. The streaming video is displayed on the display of mobile terminal 110. At some point, mobile terminal 110 may be located near to television 131 and establish a wireless communication link via the short-range wireless protocol (e.g., IEEE-802.11x/802.15.3x) with television 131. Mobile terminal 110 may then request information from television 131 regarding the capabilities of the display screen of television 131. Tee '758 at ¶ 24 Advantageously, mobile terminal 110 is also capable of establishing a communication link with keyboard 133 (or another input device such as an electronic notepad) via the short-range PAN connection in order to allow the operator of mobile terminal 110 to use keyboard 133 (or the other input device) in lieu of the keyboard or other control buttons on mobile terminal 110. By way of example, mobile terminal 110 may establish a Bluetooth connection to keyboard 133 in order to allow the operator to use keyboard 133 to control mobile terminal 110. In this scenario, the external keyboard, external display and the mobile terminal are connected in the form of a conventional computer, with air interface 1 connecting the computer (with the MT playing the role of the computing unit) to the Internet, and air interface 2 or 3 connecting the computer to the external keyboard and display. If air interface 2 can support both connections between the MT and keyboard or display simultaneously, it is not necessary to have air interface 3. Tee '758 at ¶ 25 FIG. 2 illustrates exemplary mobile terminal 110 in greater detail according to an exemplary embodiment of the disclosure. Mobile terminal 110 comprises wide-area network (WAN) transceiver (X-CVR) 201, wireless local area network (WLAN) transceiver (X-CVR) 202, and personal area network (PAN) transceiver (X-CVR) 203. In an embodiment, only one of WLAN transceiver 202 and PAN transceiver

'590 Patent Claim Limitation	Tee '758 Exemplary Disclosure
	203 may be employed. Mobile terminal 110 also comprises control processor 210, memory 215, speaker 225, microphone 230, input/output interface (I/O IF) 235, keypad 240 and display 245. Memory 215 stores basic operating system (OS) program 250, display select program 260, video conversion program 270, video/multimedia file 280, and one or more video application programs 290. Display select program 260 comprises local display parameters file 261 and remote display parameters file 262. Tee '758 at ¶ 26 Control processor 210 and memory 215 function as a controller that controls the overall operation of mobile terminal 110. Control processor 210 executes basic OS program 250 in order to control, among other things, transceivers 201, 202 and 203. Control processor 210 receives operator inputs from keypad 240 or another user input device (not shown) and displays data on display 245. If mobile terminal 110 is, for example, a cell phone, control processor 210 can receive a voice signal from microphone 230 and can send voice signals to speaker 225. I/O interface 235 allows control processor 210 to be coupled to, and communicate with, another device, including, for example, a docking station, a data cord, an operator input device, or the like. Tee '758 at ¶ 27 In the exemplary embodiment, control processor 210 uses WAN transceiver 201 to communicate over a wide area network. For example, WAN transceiver 201 may be a GSM/GPRS/EDGE transceiver, a CDMA2000/1xEV-DO transceiver, or an IEEE-802.16x transceiver that communicates with base station 120 of a wide-area network. Control processor 210 may use WLAN transceiver 202 to communicate in a wireless local area network (WLAN) environment, such as an office WLAN that may have a coverage area or range of several hundred feet. By way of example, WLAN transceiver 202 may be an IEEE-802.11x transceiver. Control processor 210 may use PAN transceiver 203 to communicate in a personal area network (PAN) environment, such as a Bluetooth or IEEE-802.15.3 communication link that may have a coverage area or range around 10-20 meters. Tee '758 at ¶ 28 In the illustrated embodiment in FIG. 2, three distinct transceivers are shown. However, this is by way of example only. Tee '758 at ¶ 28 In an alternate embodiment, mobile terminal 110 may communicate with BS 120 via a first air interface (or wireless interface) and with an external device that has a display screen via a second air interface (or wireless interface). Thus, mobile terminal 110 may comprise only two transceivers. Advantageously, one

'590 Patent Claim Limitation	Tee '758 Exemplary Disclosure
	or more of transceivers 201-203 may be based on software-defined radio (SDR) technology and therefore may be capable of communicating according to more than one wireless interface standard. Tee '758 at ¶ 36 Under control of display select program 260, control processor 210 compares the parameters in remote display parameters file 262 to the parameters in local display parameters file 261 and selects the display best suited to video/multimedia application program 290. If the display of the external device is selected, control processor 210 transfers the video/multimedia data to the appropriate one of transceivers 202 and 203. Control processor 210 may prompt the operator of mobile terminal 110 for permission to transmit video/multimedia data to the remote display device. Control processor 210 may also continue to send video/multimedia data to display 245 for simultaneous display. In an alternate embodiment, it may be assumed that the remote display is better than display 245. In such an embodiment, control processor 210 may select the remote display (with or without operator permission) without comparing parameters associated with display 245 and the remote display. Tee '758 at claim 1 1. A mobile terminal comprising: a local display capable of displaying multimedia data; a controller capable of transmitting the multimedia data to the local display; and a first transceiver capable of communicating with a remote display device, wherein the controller is capable of comparing display parameter information associated with the remote display device to display parameter information associated with the local display and, in response to the comparison, transmitting the multimedia data to the remote display device via the first transceiver. Tee '758 at claim 9 9. The mobile terminal as set forth in claim 1, further comprising a second transceiver capable of communicating with a wireless network. Tee '758 at claims 15–17 15. The mobile terminal as set forth in claim 9, wherein the first transceiver comprises a personal area network transceiver. 16. The mobile terminal as set forth in claim 15, wherein the personal area network transceiver comprises one of: an IEEE-802.15.3x transceiver, an MB-OFDM transceiver, a UWB transceiver, a wireless USB transceiver, an IEEE-802.11x transceiver, and a Bluetooth transceiver.

'590 Patent Claim Limitation	Tee '758 Exemplary Disclosure
	17. The mobile terminal as set forth in claim 9, wherein the second transceiver comprises one of an IS-2000 transceiver, a 1xEV-DO transceiver, a 1xEV-DV transceiver, a GSM/GPRS/EDGE transceiver, a 3GPP UTRAN transceiver, an HSDPA/HSUPA transceiver, a 3GPP EUTRAN transceiver, a TD-CDMA transceiver, a WiBro transceiver, a WiMAX transceiver, an IEEE-802.16x transceiver, an IEEE-802.20 transceiver, and an IEEE-802.11x transceiver. To the extent Maxell contends Tee '758 does not disclose this limitation, a person of ordinary skill in the art would have readily arrived at this limitation by combining or modifying it in view of their general knowledge and/or the prior art references disclosed in the corresponding section of Samsung's Invalidity Contentions.
[1c] a third radio communication circuit capable of transmitting information and using a third transmission frequency band;	Tee '758 discloses “a third radio communication circuit capable of transmitting information and using a third transmission frequency band.” For example: Tee '758 at Figure 1  FIG. 1

Tee '758 at Figure 2

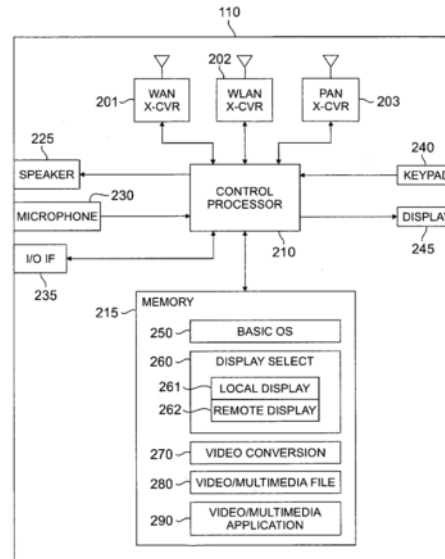


FIG. 2

Tee '758 at ¶ 17

Generally, the first wireless interface supports mobile wireless communications, including, but not limited to IS-2000, 1xEV-DO, 1xEV-DV, GSM/GPRS/EDGE, 3GPP UTRAN, HSDPA/HSUPA, 3GPP EUTRAN, TD-CDMA, WiBro, WiMAX, IEEE-802.16x, IEEE-802.20, and IEEE-802.11x (e.g., WiFi) in a hotspot environment. The second wireless interface typically supports shorter range wireless communications, including, but not limited to IEEE-802.15.3x, MB-OFDM, UWB, Wireless USB, IEEE-802.11x (or WiFi), and a Bluetooth standard that supports high throughput applications

Tee '758 at ¶ 20

Mobile terminal 110 is capable of communicating with one or more types of wireless wide-area networks (WANs), including conventional cellular networks and wireless local area networks (WLANs). By way of example, mobile terminal 110 may communicate with base station (BS) 120, which may be associated with a CDMA2000/1xEV-DO/1xEV-DV network, a GSM/GPRS/EDGE network, an IEEE-802.16x network, or the like. In other embodiments, base station 120 may communicate according to such wireless interface standards, or their evolutions, as 1xEV-DO, 1xEV-DV, GSM/GPRS/EDGE, 3GPP UTRAN, HSDPA/HSUPA, 3GPP EUTRAN, TD-CDMA, WiBro, WiMAX, IEEE-802.20, or IEEE-802.11x, among others. Base station 120 provides mobile terminal 110 with access to voice networks,

'590 Patent Claim Limitation	Tee '758 Exemplary Disclosure
	such as the public switched telephone network (PSTN), and to data networks, including, for example, the Internet or proprietary Internet protocol (IP) networks. In the illustrated embodiment, BS 120 provides mobile terminal 110 with access to server 150 via IP network 140. Tee '758 at ¶ 21 Mobile terminal 110 is also capable of communicating with one or more types of external (or remote) devices via a short-range wireless interface standard, such as IEEE-802.11x, ultra-wideband (UWB), IEEE-802.15.3x, MB-OFDM, Wireless USB, or a Bluetooth standard that supports high throughput applications, among others. It is assumed for the purposes of this disclosure that any such remote device comprises a wireless transceiver that can communicate with mobile terminal 110 in order to establish a personal area network (PAN) connection. By way of example, mobile terminal 110 may communicate with television 131 (or computer monitor 131), projector 132, keyboard 133, and laptop (or handheld) personal computer (PC) 134. If the remote device is capable of displaying video (e.g., television 131), it is assumed that the wireless transceiver of the remote device supports a relatively high data rate that is suitable for video applications and/or multimedia applications. Tee '758 at ¶ 24 Advantageously, mobile terminal 110 is also capable of establishing a communication link with keyboard 133 (or another input device such as an electronic notepad) via the short-range PAN connection in order to allow the operator of mobile terminal 110 to use keyboard 133 (or the other input device) in lieu of the keyboard or other control buttons on mobile terminal 110. By way of example, mobile terminal 110 may establish a Bluetooth connection to keyboard 133 in order to allow the operator to use keyboard 133 to control mobile terminal 110. In this scenario, the external keyboard, external display and the mobile terminal are connected in the form of a conventional computer, with air interface 1 connecting the computer (with the MT playing the role of the computing unit) to the Internet, and air interface 2 or 3 connecting the computer to the external keyboard and display. If air interface 2 can support both connections between the MT and keyboard or display simultaneously, it is not necessary to have air interface 3. Tee '758 at ¶ 25 FIG. 2 illustrates exemplary mobile terminal 110 in greater detail according to an exemplary embodiment of the disclosure. Mobile terminal 110 comprises wide-area network (WAN) transceiver (X-CVR) 201, wireless local area network (WLAN) transceiver (X-CVR) 202, and personal area network (PAN) transceiver (X-CVR) 203. In an embodiment, only one of WLAN transceiver 202 and PAN transceiver 203 may be employed. Mobile terminal 110 also comprises control processor 210, memory 215, speaker

'590 Patent Claim Limitation	Tee '758 Exemplary Disclosure
	225, microphone 230, input/output interface (I/O IF) 235, keypad 240 and display 245. Memory 215 stores basic operating system (OS) program 250, display select program 260, video conversion program 270, video/multimedia file 280, and one or more video application programs 290. Display select program 260 comprises local display parameters file 261 and remote display parameters file 262. Tee '758 at ¶ 26 Control processor 210 and memory 215 function as a controller that controls the overall operation of mobile terminal 110. Control processor 210 executes basic OS program 250 in order to control, among other things, transceivers 201, 202 and 203. Control processor 210 receives operator inputs from keypad 240 or another user input device (not shown) and displays data on display 245. If mobile terminal 110 is, for example, a cell phone, control processor 210 can receive a voice signal from microphone 230 and can send voice signals to speaker 225. I/O interface 235 allows control processor 210 to be coupled to, and communicate with, another device, including, for example, a docking station, a data cord, an operator input device, or the like. Tee '758 at ¶ 27 In the exemplary embodiment, control processor 210 uses WAN transceiver 201 to communicate over a wide area network. For example, WAN transceiver 201 may be a GSM/GPRS/EDGE transceiver, a CDMA2000/1xEV-DO transceiver, or an IEEE-802.16x transceiver that communicates with base station 120 of a wide-area network. Control processor 210 may use WLAN transceiver 202 to communicate in a wireless local area network (WLAN) environment, such as an office WLAN that may have a coverage area or range of several hundred feet. By way of example, WLAN transceiver 202 may be an IEEE-802.11x transceiver. Control processor 210 may use PAN transceiver 203 to communicate in a personal area network (PAN) environment, such as a Bluetooth or IEEE-802.15.3 communication link that may have a coverage area or range around 10-20 meters. Tee '758 at ¶ 28 In the illustrated embodiment in FIG. 2, three distinct transceivers are shown. However, this is by way of example only. Tee '758 at ¶ 28 In an alternate embodiment, mobile terminal 110 may communicate with BS 120 via a first air interface (or wireless interface) and with an external device that has a display screen via a second air interface (or wireless interface). Thus, mobile terminal 110 may comprise only two transceivers. Advantageously, one

'590 Patent Claim Limitation	Tee '758 Exemplary Disclosure
	or more of transceivers 201-203 may be based on software-defined radio (SDR) technology and therefore may be capable of communicating according to more than one wireless interface standard. Tee '758 at claims 15–17 15. The mobile terminal as set forth in claim 9, wherein the first transceiver comprises a personal area network transceiver. 16. The mobile terminal as set forth in claim 15, wherein the personal area network transceiver comprises one of: an IEEE-802.15.3x transceiver, an MB-OFDM transceiver, a UWB transceiver, a wireless USB transceiver, an IEEE-802.11x transceiver, and a Bluetooth transceiver. 17. The mobile terminal as set forth in claim 9, wherein the second transceiver comprises one of an IS-2000 transceiver, a 1xEV-DO transceiver, a 1xEV-DV transceiver, a GSM/GPRS/EDGE transceiver, a 3GPP UTRAN transceiver, an HSDPA/HSUPA transceiver, a 3GPP EUTRAN transceiver, a TD-CDMA transceiver, a WiBro transceiver, a WiMAX transceiver, an IEEE-802.16x transceiver, an IEEE-802.20 transceiver, and an IEEE-802.11x transceiver. To the extent Maxell contends Tee '758 does not disclose this limitation, a person of ordinary skill in the art would have readily arrived at this limitation by combining or modifying it in view of their general knowledge and/or the prior art references disclosed in the corresponding section of Samsung's Invalidity Contentions.
[1d] an imaging circuit capable of receiving video information and still picture information via an optical system;	Tee '758 discloses “an imaging circuit capable of receiving video information and still picture information via an optical system.” For example: Tee '758 at ¶ 18 An exemplary mobile terminal may be used for mobile communications and as a gateway for a short-range wireless network, also called a personal area network (PAN). The mobile terminal may support a variety of mobile applications, including voice, multimedia (i.e., video, graphics, text, and audio downloads), video conferencing, web browsing, file download, VPN and Internet gaming. Advantageously, when the mobile terminal is near a higher quality display (e.g., a TV screen), the mobile terminal relays its video data to the external display device as well as to its internal display. This enables the operator of the mobile terminal to view the information on the higher quality display device, and to share the displayed information with other people at the same location, e.g., in a video conference call, or watching the latest broadcasting and streaming of News or events of common interests. Note that in the latter example, the source of information could be a remote Internet web server instead of a conventional TV broadcasting station. A remote Internet web server does not have the same geographical coverage

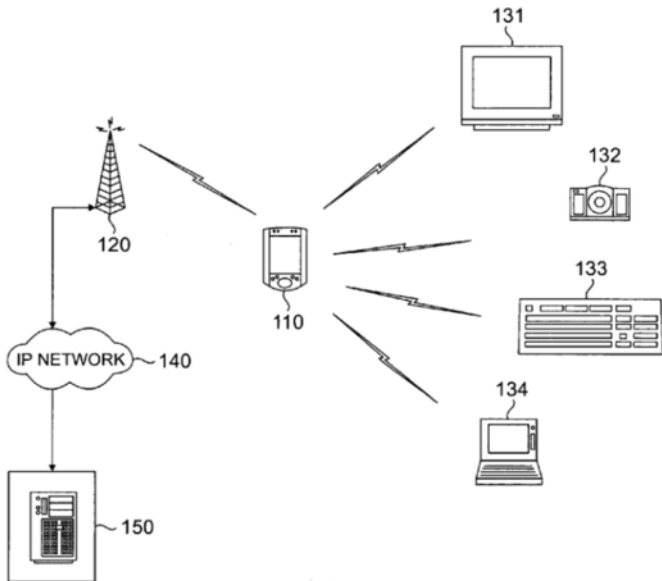
'590 Patent Claim Limitation	Tee '758 Exemplary Disclosure
	limit as a conventional TV broadcasting station. In the case of group video conferencing using, for example, a digital camera phone, it would be more practical and ergonomically correct to have the received video data displayed on an external screen, while the phone camera captures and transmits the local user images. Tee '758 at ¶ 35 Under control of display select program 260, control processor 210 is capable of querying the remote device (e.g., television 131) to determine the quality of the display associated with the remote device, for example, by requesting the remote device to transmit parameters or attributes describing the capabilities of the remote device. If the attributes of the external display device are available, the data can be formatted accordingly before transmission through the second interface to the display device. However, it is not always necessary for the remote device to have the capability to respond to such an inquiry. Any standard protocol that is supported by the air interface would be sufficient for the mobile terminal to transmit the video data, and the similar air interface of the display device to receive, demodulate and decode the data. Nevertheless, it is assumed that the external display device has the capability to decode the received data and convert it to a signal/pixel format that is supported by the display mechanism, e.g., a MPEG4 decoder, and/or a Digital-to-Analog converter. Control processor 210 receives the display parameters associated with the remote device and stores these parameters in remote display parameters file 262. The parameters associated with display 245 are stored in local display parameters file 261. The parameter data may include, for example, display size, display type (CRT, LED, etc.), pixel size, refresh rate, and the like. Tee '758 at ¶ 38 Mobile terminal 110 then requests the capabilities of the remote display device and compares the capabilities of the remote display device and local display 245 (process step 315). Mobile terminal 110 may prompt the operator to select the remote display device (process step 320). Assuming the remote display device is selected, mobile terminal 110 then forwards (or relays or re-transmits) the video stream from base station 120 (or video/multimedia file 280) to the remote display device (process step 325). Optionally, mobile terminal 110 may wirelessly communicate with a remote user input device, such as keyboard 133 process step 330). Optionally, if video/multimedia application program 290 is a video conferencing application, mobile terminal 110 receives via the short-range air interface video/multimedia data from a remote video camera and relays the camera video data to base station 120 (process step 335). To the extent Maxell contends Tee '758 does not disclose this limitation, a person of ordinary skill in the art would have readily arrived at this limitation by combining or modifying it in view of their general

'590 Patent Claim Limitation	Tee '758 Exemplary Disclosure
	knowledge and/or the prior art references disclosed in the corresponding section of Samsung's Invalidity Contentions.
[1e] a compression circuit compressing the still picture information using a first type of compression method and the video information using a second type of compression method;	Tee '758 discloses "a compression circuit compressing the still picture information using a first type of compression method and the video information using a second type of compression method." For example: Tee '758 at ¶ 18 An exemplary mobile terminal may be used for mobile communications and as a gateway for a short-range wireless network, also called a personal area network (PAN). The mobile terminal may support a variety of mobile applications, including voice, multimedia (i.e., video, graphics, text, and audio downloads), video conferencing, web browsing, file download, VPN and Internet gaming. Advantageously, when the mobile terminal is near a higher quality display (e.g., a TV screen), the mobile terminal relays its video data to the external display device as well as to its internal display. This enables the operator of the mobile terminal to view the information on the higher quality display device, and to share the displayed information with other people at the same location, e.g., in a video conference call, or watching the latest broadcasting and streaming of News or events of common interests. Note that in the latter example, the source of information could be a remote Internet web server instead of a conventional TV broadcasting station. A remote Internet web server does not have the same geographical coverage limit as a conventional TV broadcasting station. In the case of group video conferencing using, for example, a digital camera phone, it would be more practical and ergonomically correct to have the received video data displayed on an external screen, while the phone camera captures and transmits the local user images. Tee '758 at ¶ 35 Under control of display select program 260, control processor 210 is capable of querying the remote device (e.g., television 131) to determine the quality of the display associated with the remote device, for example, by requesting the remote device to transmit parameters or attributes describing the capabilities of the remote device. If the attributes of the external display device are available, the data can be formatted accordingly before transmission through the second interface to the display device. However, it is not always necessary for the remote device to have the capability to respond to such an inquiry. Any standard protocol that is supported by the air interface would be sufficient for the mobile terminal to transmit the video data, and the similar air interface of the display device to receive, demodulate and decode the data. Nevertheless, it is assumed that the external display device has the capability to decode the received data and convert it to a signal/pixel format that is supported by the display mechanism, e.g., a MPEG4 decoder, and/or a Digital-to-Analog converter. Control processor 210 receives the display

'590 Patent Claim Limitation	Tee '758 Exemplary Disclosure
	parameters associated with the remote device and stores these parameters in remote display parameters file 262. The parameters associated with display 245 are stored in local display parameters file 261. The parameter data may include, for example, display size, display type (CRT, LED, etc.), pixel size, refresh rate, and the like. Tee '758 at ¶ 38 Mobile terminal 110 then requests the capabilities of the remote display device and compares the capabilities of the remote display device and local display 245 (process step 315). Mobile terminal 110 may prompt the operator to select the remote display device (process step 320). Assuming the remote display device is selected, mobile terminal 110 then forwards (or relays or re-transmits) the video stream from base station 120 (or video/multimedia file 280) to the remote display device (process step 325). Optionally, mobile terminal 110 may wirelessly communicate with a remote user input device, such as keyboard 133 process step 330). Optionally, if video/multimedia application program 290 is a video conferencing application, mobile terminal 110 receives via the short-range air interface video/multimedia data from a remote video camera and relays the camera video data to base station 120 (process step 335). To the extent Maxell contends Tee '758 does not disclose this limitation, a person of ordinary skill in the art would have readily arrived at this limitation by combining or modifying it in view of their general knowledge and/or the prior art references disclosed in the corresponding section of Samsung's Invalidity Contentions.
[1f] an input device capable of receiving a user indication;	Tee '758 discloses “an input device capable of receiving a user indication.” For example: Tee '758 at Fig. 3 <pre> graph TD 320[MT 110 PROMPTS OPERATOR TO SELECT REMOTE DISPLAY DEVICE] --> 325[MT 110 TRANSMITS VIDEO STREAM TO REMOTE DISPLAY DEVICE] </pre> Tee '758 at ¶ 36 Under control of display select program 260, control processor 210 compares the parameters in remote display parameters file 262 to the parameters in local display parameters file 261 and selects the display best suited to video/multimedia application program 290. If the display of the external device is selected, control processor 210 transfers the video/multimedia data to the appropriate one of transceivers 202 and

'590 Patent Claim Limitation	Tee '758 Exemplary Disclosure
	203. Control processor 210 may prompt the operator of mobile terminal 110 for permission to transmit video/multimedia data to the remote display device. Control processor 210 may also continue to send video/multimedia data to display 245 for simultaneous display. In an alternate embodiment, it may be assumed that the remote display is better than display 245. In such an embodiment, control processor 210 may select the remote display (with or without operator permission) without comparing parameters associated with display 245 and the remote display. Tee '758 at ¶ 38 Mobile terminal 110 then requests the capabilities of the remote display device and compares the capabilities of the remote display device and local display 245 (process step 315). Mobile terminal 110 may prompt the operator to select the remote display device (process step 320). Assuming the remote display device is selected, mobile terminal 110 then forwards (or relays or re-transmits) the video stream from base station 120 (or video/multimedia file 280) to the remote display device (process step 325). Optionally, mobile terminal 110 may wirelessly communicate with a remote user input device, such as keyboard 133 process step 330). Optionally, if video/multimedia application program 290 is a video conferencing application, mobile terminal 110 receives via the short-range air interface video/multimedia data from a remote video camera and relays the camera video data to base station 120 (process step 335). Tee '758 at claim 6 6. The mobile terminal as set forth in claim 4, wherein the controller is capable of prompting an operator of the mobile terminal for permission to transmit the multimedia data to the remote display device via the first transceiver. To the extent Maxell contends Tee '758 does not disclose this limitation, a person of ordinary skill in the art would have readily arrived at this limitation by combining or modifying it in view of their general knowledge and/or the prior art references disclosed in the corresponding section of Samsung's Invalidity Contentions.
[1g] an accumulation circuit capable of accumulating video information received by the imaging circuit after the video information is compressed by the compression circuit; and	Tee '758 discloses “an accumulation circuit capable of accumulating video information received by the imaging circuit after the video information is compressed by the compression circuit.” For example: Tee '758 at ¶ 25 FIG. 2 illustrates exemplary mobile terminal 110 in greater detail according to an exemplary embodiment of the disclosure. Mobile terminal 110 comprises wide-area network (WAN) transceiver (X-CVR) 201, wireless local area network (WLAN) transceiver (X-CVR) 202, and personal area network (PAN)

'590 Patent Claim Limitation	Tee '758 Exemplary Disclosure
	transceiver (X-CVR) 203. In an embodiment, only one of WLAN transceiver 202 and PAN transceiver 203 may be employed. Mobile terminal 110 also comprises control processor 210, memory 215, speaker 225, microphone 230, input/output interface (I/O IF) 235, keypad 240 and display 245. Memory 215 stores basic operating system (OS) program 250, display select program 260, video conversion program 270, video/multimedia file 280, and one or more video application programs 290. Display select program 260 comprises local display parameters file 261 and remote display parameters file 262. Tee '758 at ¶ 35 Under control of display select program 260, control processor 210 is capable of querying the remote device (e.g., television 131) to determine the quality of the display associated with the remote device, for example, by requesting the remote device to transmit parameters or attributes describing the capabilities of the remote device. If the attributes of the external display device are available, the data can be formatted accordingly before transmission through the second interface to the display device. However, it is not always necessary for the remote device to have the capability to respond to such an inquiry. Any standard protocol that is supported by the air interface would be sufficient for the mobile terminal to transmit the video data, and the similar air interface of the display device to receive, demodulate and decode the data. Nevertheless, it is assumed that the external display device has the capability to decode the received data and convert it to a signal/pixel format that is supported by the display mechanism, e.g., a MPEG4 decoder, and/or a Digital-to-Analog converter. Control processor 210 receives the display parameters associated with the remote device and stores these parameters in remote display parameters file 262. The parameters associated with display 245 are stored in local display parameters file 261. The parameter data may include, for example, display size, display type (CRT, LED, etc.), pixel size, refresh rate, and the like. Tee '758 at ¶ 38 Mobile terminal 110 then requests the capabilities of the remote display device and compares the capabilities of the remote display device and local display 245 (process step 315). Mobile terminal 110 may prompt the operator to select the remote display device (process step 320). Assuming the remote display device is selected, mobile terminal 110 then forwards (or relays or re-transmits) the video stream from base station 120 (or video/multimedia file 280) to the remote display device (process step 325). Optionally, mobile terminal 110 may wirelessly communicate with a remote user input device, such as keyboard 133 process step 330). Optionally, if video/multimedia application program 290 is a video conferencing application, mobile terminal 110 receives via the short-range air interface video/multimedia data from a remote video camera and relays the camera video data to base station 120 (process step 335).

'590 Patent Claim Limitation	Tee '758 Exemplary Disclosure
	To the extent Maxell contends Tee '758 does not disclose this limitation, a person of ordinary skill in the art would have readily arrived at this limitation by combining or modifying it in view of their general knowledge and/or the prior art references disclosed in the corresponding section of Samsung's Invalidity Contentions.
[1h] a controller controlling assignment of connection of each of the first, second, and third radio communication circuits,	Tee '758 discloses “a controller controlling assignment of connection of each of the first, second, and third radio communication circuits.” For example: Tee '758 at Figure 1  FIG. 1

Tee '758 at Figure 2

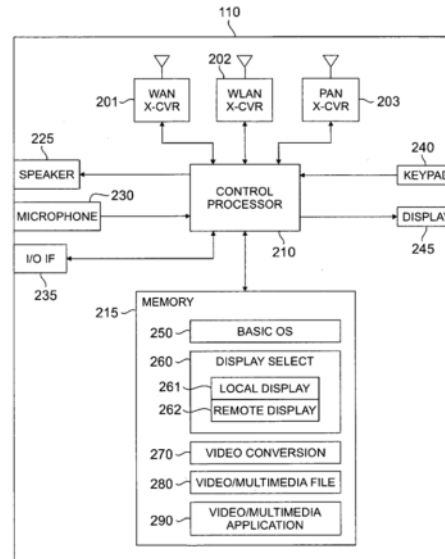


FIG. 2

Tee '758 at ¶ 6

A mobile terminal is provided. According to an advantageous embodiment, the mobile terminal comprises a local display capable of displaying multimedia data, a controller capable of transmitting the multimedia data to the local display, and a first transceiver capable of communicating with a remote display device. The controller is capable of comparing display parameter information associated with the external display device to display parameter information associated with the local display and, in response to the comparison, transmitting the multimedia data to the external display device via the first transceiver.

Tee '758 at ¶ 16

In some instances, the determination of whether the remote device has a better display may depend on the requirements of the video application executed by the mobile terminal. For many applications, it may be assumed that displays that are larger and have higher resolutions are better displays. The mobile terminal user may also make the decision as to which display to use.

Tee '758 at ¶ 17

'590 Patent Claim Limitation	Tee '758 Exemplary Disclosure
	Generally, the first wireless interface supports mobile wireless communications, including, but not limited to IS-2000, 1xEV-DO, 1xEV-DV, GSM/GPRS/EDGE, 3GPP UTRAN, HSDPA/HSUPA, 3GPP EUTRAN, TD-CDMA, WiBro, WiMAX, IEEE-802.16x, IEEE-802.20, and IEEE-802.11x (e.g., WiFi) in a hotspot environment. The second wireless interface typically supports shorter range wireless communications, including, but not limited to IEEE-802.15.3x, MB-OFDM, UWB, Wireless USB, IEEE-802.11x (or WiFi), and a Bluetooth standard that supports high throughput applications Tee '758 at ¶ 25 FIG. 2 illustrates exemplary mobile terminal 110 in greater detail according to an exemplary embodiment of the disclosure. Mobile terminal 110 comprises wide-area network (WAN) transceiver (X-CVR) 201, wireless local area network (WLAN) transceiver (X-CVR) 202, and personal area network (PAN) transceiver (X-CVR) 203. In an embodiment, only one of WLAN transceiver 202 and PAN transceiver 203 may be employed. Mobile terminal 110 also comprises control processor 210, memory 215, speaker 225, microphone 230, input/output interface (I/O IF) 235, keypad 240 and display 245. Memory 215 stores basic operating system (OS) program 250, display select program 260, video conversion program 270, video/multimedia file 280, and one or more video application programs 290. Display select program 260 comprises local display parameters file 261 and remote display parameters file 262. Tee '758 at ¶ 26 Control processor 210 and memory 215 function as a controller that controls the overall operation of mobile terminal 110. Control processor 210 executes basic OS program 250 in order to control, among other things, transceivers 201, 202 and 203. Control processor 210 receives operator inputs from keypad 240 or another user input device (not shown) and displays data on display 245. If mobile terminal 110 is, for example, a cell phone, control processor 210 can receive a voice signal from microphone 230 and can send voice signals to speaker 225. I/O interface 235 allows control processor 210 to be coupled to, and communicate with, another device, including, for example, a docking station, a data cord, an operator input device, or the like. Tee '758 at ¶ 27 In the exemplary embodiment, control processor 210 uses WAN transceiver 201 to communicate over a wide area network. For example, WAN transceiver 201 may be a GSM/GPRS/EDGE transceiver, a CDMA2000/1xEV-DO transceiver, or an IEEE-802.16x transceiver that communicates with base station 120 of a wide-area network. Control processor 210 may use WLAN transceiver 202 to communicate in a wireless local area network (WLAN) environment, such as an office WLAN that may have a coverage area or range of several hundred feet. By way of example, WLAN transceiver 202 may be an IEEE-

'590 Patent Claim Limitation	Tee '758 Exemplary Disclosure
	802.11x transceiver. Control processor 210 may use PAN transceiver 203 to communicate in a personal area network (PAN) environment, such as a Bluetooth or IEEE-802.15.3 communication link that may have a coverage area or range around 10-20 meters. Tee '758 at ¶ 28 In an alternate embodiment, mobile terminal 110 may communicate with BS 120 via a first air interface (or wireless interface) and with an external device that has a display screen via a second air interface (or wireless interface). Thus, mobile terminal 110 may comprise only two transceivers. Advantageously, one or more of transceivers 201-203 may be based on software-defined radio (SDR) technology and therefore may be capable of communicating according to more than one wireless interface standard. Tee '758 at ¶ 33 Control processor 210 executes video/multimedia application program 290 in order to display video data on display 245. Control processor 210 executes video conversion program 270 in order to re-format (if necessary) the video data downloaded from server 150 through the one wireless interface (e.g., WAN transceiver 201) to a suitable format for re-transmission via another wireless interface (e.g., WLAN transceiver 202 or PAN transceiver 203). Additionally, video/multimedia application program 290 may retrieve video/multimedia data from video/multimedia file 280 and transmit a video stream to a remote device via a wireless interface. Advantageously, the wireless interface may have more than one connection at the same time. For example, PAN transceiver 203 may transmit video to television 131 while simultaneously communicating with wireless keyboard 240. Tee '758 at ¶ 36 Under control of display select program 260, control processor 210 compares the parameters in remote display parameters file 262 to the parameters in local display parameters file 261 and selects the display best suited to video/multimedia application program 290. If the display of the external device is selected, control processor 210 transfers the video/multimedia data to the appropriate one of transceivers 202 and 203. Control processor 210 may prompt the operator of mobile terminal 110 for permission to transmit video/multimedia data to the remote display device. Control processor 210 may also continue to send video/multimedia data to display 245 for simultaneous display. In an alternate embodiment, it may be assumed that the remote display is better than display 245. In such an embodiment, control processor 210 may select the remote display (with or without operator permission) without comparing parameters associated with display 245 and the remote display.

Tee '758 at ¶ 37

FIG. 3 depicts flow diagram 300, which illustrates the operation of exemplary mobile terminal 110 and a remote display device according to one embodiment of the disclosure. Initially, mobile terminal 110 accesses base station 120 via an air interface (e.g., transceiver 201 or 202) and initiates a video/multimedia download from server 150 (process step 305). Alternatively, mobile terminal 110 may play back video/multimedia data stored in video/multimedia file 280. At some point, mobile terminal 110 detects the presence of a remote display device (e.g., television 131) via another air interface (e.g., transceiver 202 or 203) and establishes a wireless link with the remote display device (process step 310), with the authorization of the mobile terminal user.

Tee '758 at ¶ 38

Mobile terminal 110 then requests the capabilities of the remote display device and compares the capabilities of the remote display device and local display 245 (process step 315). Mobile terminal 110 may prompt the operator to select the remote display device (process step 320). Assuming the remote display device is selected, mobile terminal 110 then forwards (or relays or re-transmits) the video stream from base station 120 (or video/multimedia file 280) to the remote display device (process step 325). Optionally, mobile terminal 110 may wirelessly communicate with a remote user input device, such as keyboard 133 (process step 330). Optionally, if video/multimedia application program 290 is a video conferencing application, mobile terminal 110 receives via the short-range air interface video/multimedia data from a remote video camera and relays the camera video data to base station 120 (process step 335).

Tee '758 at claim 1

1. A mobile terminal comprising:
a local display capable of displaying multimedia data;
a controller capable of transmitting the multimedia data to the local display; and
a first transceiver capable of communicating with a remote display device,
wherein the controller is capable of comparing display parameter information associated with the remote display device to display parameter information associated with the local display and, in response to the comparison, transmitting the multimedia data to the remote display device via the first transceiver.

Tee '758 at claim 6

6. The mobile terminal as set forth in claim 4, wherein the controller is capable of prompting an operator of the mobile terminal for permission to transmit the multimedia data to the remote display device via the first transceiver.

Tee '758 at claims 12–14

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	12. The mobile terminal as set forth in claim 11, wherein the controller is capable of communicating with a remote user input device via the first transceiver. 13. The mobile terminal as set forth in claim 12, wherein the remote user input device comprises a wireless keyboard. 14. The mobile terminal as set forth in claim 12, wherein the controller is capable of prompting an operator of the mobile terminal for permission to transmit the multimedia data to the remote display device via the first transceiver. To the extent Maxell contends Tee '758 does not disclose this limitation, a person of ordinary skill in the art would have readily arrived at this limitation by combining or modifying it in view of their general knowledge and/or the prior art references disclosed in the corresponding section of Samsung's Invalidity Contentions.
[1i] wherein the first radio communication circuit can transmit video information accumulated in the accumulation circuit to an external device by radio,	Tee '758 discloses "wherein the first radio communication circuit can transmit video information accumulated in the accumulation circuit to an external device by radio." For example: Tee '758 at ¶ 6 A mobile terminal is provided. According to an advantageous embodiment, the mobile terminal comprises a local display capable of displaying multimedia data, a controller capable of transmitting the multimedia data to the local display, and a first transceiver capable of communicating with a remote display device. The controller is capable of comparing display parameter information associated with the external display device to display parameter information associated with the local display and, in response to the comparison, transmitting the multimedia data to the external display device via the first transceiver. Tee '758 at ¶ 17 Generally, the first wireless interface supports mobile wireless communications, including, but not limited to IS-2000, 1xEV-DO, 1xEV-DV, GSM/GPRS/EDGE, 3GPP UTRAN, HSDPA/HSUPA, 3GPP EUTRAN, TD-CDMA, WiBro, WiMAX, IEEE-802.16x, IEEE-802.20, and IEEE-802.11x (e.g., WiFi) in a hotspot environment. The second wireless interface typically supports shorter range wireless communications, including, but not limited to IEEE-802.15.3x, MB-OFDM, UWB, Wireless USB, IEEE-802.11x (or WiFi), and a Bluetooth standard that supports high throughput applications

Tee '758 at ¶ 21

Mobile terminal 110 is also capable of communicating with one or more types of external (or remote) devices via a short-range wireless interface standard, such as IEEE-802.11x, ultra-wideband (UWB), IEEE-802.15.3x, MB-OFDM, Wireless USB, or a Bluetooth standard that supports high throughput applications, among others. It is assumed for the purposes of this disclosure that any such remote device comprises a wireless transceiver that can communicate with mobile terminal 110 in order to establish a personal area network (PAN) connection. By way of example, mobile terminal 110 may communicate with television 131 (or computer monitor 131), projector 132, keyboard 133, and laptop (or handheld) personal computer (PC) 134. If the remote device is capable of displaying video (e.g., television 131), it is assumed that the wireless transceiver of the remote device supports a relatively high data rate that is suitable for video applications and/or multimedia applications.

Tee '758 at ¶ 22

According to an advantageous embodiment, mobile terminal 110 may relay a video stream to a remote device in order to allow the operator of mobile terminal 110 to view the video on a better display. By way of example, mobile terminal 110 may be receiving streaming video data from server 150 via IP network 140 and base station 120. The streaming video is displayed on the display of mobile terminal 110. At some point, mobile terminal 110 may be located near to television 131 and establish a wireless communication link via the short-range wireless protocol (e.g., IEEE-802.11x/802.15.3x) with television 131. Mobile terminal 110 may then request information from television 131 regarding the capabilities of the display screen of television 131.

Tee '758 at ¶ 24

Advantageously, mobile terminal 110 is also capable of establishing a communication link with keyboard 133 (or another input device such as an electronic notepad) via the short-range PAN connection in order to allow the operator of mobile terminal 110 to use keyboard 133 (or the other input device) in lieu of the keyboard or other control buttons on mobile terminal 110. By way of example, mobile terminal 110 may establish a Bluetooth connection to keyboard 133 in order to allow the operator to use keyboard 133 to control mobile terminal 110. In this scenario, the external keyboard, external display and the mobile terminal are connected in the form of a conventional computer, with air interface 1 connecting the computer (with the MT playing the role of the computing unit) to the Internet, and air interface 2 or 3 connecting the computer to the external keyboard and display. If air interface 2 can support both connections between the MT and keyboard or display simultaneously, it is not necessary to have air interface 3.

Tee '758 at ¶ 28

In an alternate embodiment, mobile terminal 110 may communicate with BS 120 via a first air interface (or wireless interface) and with an external device that has a display screen via a second air interface (or wireless interface). Thus, mobile terminal 110 may comprise only two transceivers. Advantageously, one or more of transceivers 201-203 may be based on software-defined radio (SDR) technology and therefore may be capable of communicating according to more than one wireless interface standard.

Tee '758 at ¶ 29

Additionally, depending on the distances involved, mobile terminal 110 may receive an incoming video and/or multimedia stream from any one of WAN transceiver 201, WLAN transceiver 202, and PAN transceiver 203 and may relay the video and/or multimedia stream to an external device using, for example, WLAN transceiver 202 or PAN transceiver 203. Essentially, this air interface functions similarly to I/O interface 235, but over the wireless link.

Tee '758 at ¶ 38

Mobile terminal 110 then requests the capabilities of the remote display device and compares the capabilities of the remote display device and local display 245 (process step 315). Mobile terminal 110 may prompt the operator to select the remote display device (process step 320). Assuming the remote display device is selected, mobile terminal 110 then forwards (or relays or re-transmits) the video stream from base station 120 (or video/multimedia file 280) to the remote display device (process step 325). Optionally, mobile terminal 110 may wirelessly communicate with a remote user input device, such as keyboard 133 (process step 330). Optionally, if video/multimedia application program 290 is a video conferencing application, mobile terminal 110 receives via the short-range air interface video/multimedia data from a remote video camera and relays the camera video data to base station 120 (process step 335).

Tee '758 at claim 1

1. A mobile terminal comprising:
a local display capable of displaying multimedia data;
a controller capable of transmitting the multimedia data to the local display; and
a first transceiver capable of communicating with a remote display device,
wherein the controller is capable of comparing display parameter information associated with the remote display device to display parameter information associated with the local display and, in response to the comparison, transmitting the multimedia data to the remote display device via the first transceiver.

To the extent Maxell contends Tee '758 does not disclose this limitation, a person of ordinary skill in the art would have readily arrived at this limitation by combining or modifying it in view of their general

'590 Patent Claim Limitation	Tee '758 Exemplary Disclosure
	knowledge and/or the prior art references disclosed in the corresponding section of Samsung's Invalidity Contentions.
[1j] wherein the controller controls assignment of connection for each of the first and second radio communication circuit in response to receiving an indication from a user such that when an indication from the user indicates to transmit video information using the first radio communication circuit, the controller assigns a connection to the first radio communication circuit for transmitting the video information,	Tee '758 discloses "wherein the controller controls assignment of connection for each of the first and second radio communication circuit in response to receiving an indication from a user such that when an indication from the user indicates to transmit video information using the first radio communication circuit, the controller assigns a connection to the first radio communication circuit for transmitting the video information." For example: Tee '758 at ¶ 16 In some instances, the determination of whether the remote device has a better display may depend on the requirements of the video application executed by the mobile terminal. For many applications, it may be assumed that displays that are larger and have higher resolutions are better displays. The mobile terminal user may also make the decision as to which display to use. Tee '758 at ¶ 25 FIG. 2 illustrates exemplary mobile terminal 110 in greater detail according to an exemplary embodiment of the disclosure. Mobile terminal 110 comprises wide-area network (WAN) transceiver (X-CVR) 201, wireless local area network (WLAN) transceiver (X-CVR) 202, and personal area network (PAN) transceiver (X-CVR) 203. In an embodiment, only one of WLAN transceiver 202 and PAN transceiver 203 may be employed. Mobile terminal 110 also comprises control processor 210, memory 215, speaker 225, microphone 230, input/output interface (I/O IF) 235, keypad 240 and display 245. Memory 215 stores basic operating system (OS) program 250, display select program 260, video conversion program 270, video/multimedia file 280, and one or more video application programs 290. Display select program 260 comprises local display parameters file 261 and remote display parameters file 262. Tee '758 at ¶ 26 Control processor 210 and memory 215 function as a controller that controls the overall operation of mobile terminal 110. Control processor 210 executes basic OS program 250 in order to control, among other things, transceivers 201, 202 and 203. Control processor 210 receives operator inputs from keypad 240 or another user input device (not shown) and displays data on display 245. If mobile terminal 110 is, for example, a cell phone, control processor 210 can receive a voice signal from microphone 230 and can send voice signals to speaker 225. I/O interface 235 allows control processor 210 to be coupled to, and communicate with, another device, including, for example, a docking station, a data cord, an operator input device, or the like.

Tee '758 at ¶ 27

In the exemplary embodiment, control processor 210 uses WAN transceiver 201 to communicate over a wide area network. For example, WAN transceiver 201 may be a GSM/GPRS/EDGE transceiver, a CDMA2000/1xEV-DO transceiver, or an IEEE-802.16x transceiver that communicates with base station 120 of a wide-area network. Control processor 210 may use WLAN transceiver 202 to communicate in a wireless local area network (WLAN) environment, such as an office WLAN that may have a coverage area or range of several hundred feet. By way of example, WLAN transceiver 202 may be an IEEE-802.11x transceiver. Control processor 210 may use PAN transceiver 203 to communicate in a personal area network (PAN) environment, such as a Bluetooth or IEEE-802.15.3 communication link that may have a coverage area or range around 10-20 meters.

Tee '758 at ¶ 28

In an alternate embodiment, mobile terminal 110 may communicate with BS 120 via a first air interface (or wireless interface) and with an external device that has a display screen via a second air interface (or wireless interface). Thus, mobile terminal 110 may comprise only two transceivers. Advantageously, one or more of transceivers 201-203 may be based on software-defined radio (SDR) technology and therefore may be capable of communicating according to more than one wireless interface standard.

Tee '758 at ¶ 29

Additionally, depending on the distances involved, mobile terminal 110 may receive an incoming video and/or multimedia stream from any one of WAN transceiver 201, WLAN transceiver 202, and PAN transceiver 203 and may relay the video and/or multimedia stream to an external device using, for example, WLAN transceiver 202 or PAN transceiver 203. Essentially, this air interface functions similarly to I/O interface 235, but over the wireless link.

Tee '758 at ¶ 30

In one example, mobile terminal 201 may receive a video stream from BS 120 via WAN transceiver 201 and may relay the video stream over a short distance to a remote display device via WLAN transceiver 202 or PAN transceiver 203. This may occur when mobile terminal 201 communicates with BS 120 in a cellular network and the remote display communicates with mobile terminal 110 using, for example, an IEEE-802.11x transceiver (i.e., communicates with WLAN transceiver 202) or a Bluetooth or IEEE-802.15.3x transceiver (i.e., communicates with PAN transceiver 203).

Tee '758 at ¶ 34

Control processor 210 executes display select program 260 in order to determine whether the quality of the display of the remote device (e.g., television 131) is superior to the quality of display 245 in mobile

'590 Patent Claim Limitation	Tee '758 Exemplary Disclosure
	terminal 110. Control processor 210 may execute display select program 260 automatically in response to detection of wireless signals transmitted by the remote device. For example, PAN transceiver 203 may detect a pilot (or similar beacon) signal transmitted by the wireless transceiver associated with television 131 and may send a notification signal to control processor 210. The pilot/beacon signal may be a signal broadcast by a device, such as television 131, for example, to provide notification of the presence and capabilities of the device and the services provided by the device. Upon receipt of the notification signal, control processor 210 may launch display select application program 260. In another embodiment, PAN transceiver 203 broadcasts a signal to discover and interrogate neighboring nodes that may have the ability to display the information. As an example, the wireless transceiver associated with television 131 may acquire the transmission from PAN transceiver 203 and may transmit a signal in response to the inquiry, using the protocol supported by the air interface standard. Alternatively, control processor 210 may execute display select program 260 in response to manual inputs entered by the operator of mobile terminal 110. Tee '758 at ¶ 36 Under control of display select program 260, control processor 210 compares the parameters in remote display parameters file 262 to the parameters in local display parameters file 261 and selects the display best suited to video/multimedia application program 290. If the display of the external device is selected, control processor 210 transfers the video/multimedia data to the appropriate one of transceivers 202 and 203. Control processor 210 may prompt the operator of mobile terminal 110 for permission to transmit video/multimedia data to the remote display device. Control processor 210 may also continue to send video/multimedia data to display 245 for simultaneous display. In an alternate embodiment, it may be assumed that the remote display is better than display 245. In such an embodiment, control processor 210 may select the remote display (with or without operator permission) without comparing parameters associated with display 245 and the remote display. Tee '758 at ¶ 37 FIG. 3 depicts flow diagram 300, which illustrates the operation of exemplary mobile terminal 110 and a remote display device according to one embodiment of the disclosure. Initially, mobile terminal 110 accesses base station 120 via an air interface (e.g., transceiver 201 or 202) and initiates a video/multimedia download from server 150 (process step 305). Alternatively, mobile terminal 110 may play back video/multimedia data stored in video/multimedia file 280. At some point, mobile terminal 110 detects the presence of a remote display device (e.g., television 131) via another air interface (e.g.,

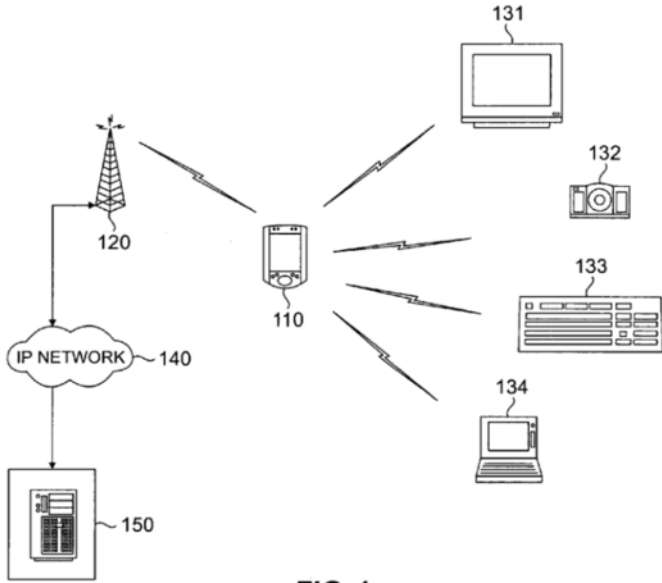
'590 Patent Claim Limitation	Tee '758 Exemplary Disclosure
	transceiver 202 or 203) and establishes a wireless link with the remote display device (process step 310), with the authorization of the mobile terminal user. Tee '758 at ¶ 38 Mobile terminal 110 then requests the capabilities of the remote display device and compares the capabilities of the remote display device and local display 245 (process step 315). Mobile terminal 110 may prompt the operator to select the remote display device (process step 320). Assuming the remote display device is selected, mobile terminal 110 then forwards (or relays or re-transmits) the video stream from base station 120 (or video/multimedia file 280) to the remote display device (process step 325). Optionally, mobile terminal 110 may wirelessly communicate with a remote user input device, such as keyboard 133 process step 330). Optionally, if video/multimedia application program 290 is a video conferencing application, mobile terminal 110 receives via the short-range air interface video/multimedia data from a remote video camera and relays the camera video data to base station 120 (process step 335). Tee '758 at claim 6 6. The mobile terminal as set forth in claim 4, wherein the controller is capable of prompting an operator of the mobile terminal for permission to transmit the multimedia data to the remote display device via the first transceiver. Tee '758 at claims 12–14 12. The mobile terminal as set forth in claim 11, wherein the controller is capable of communicating with a remote user input device via the first transceiver. 13. The mobile terminal as set forth in claim 12, wherein the remote user input device comprises a wireless keyboard. 14. The mobile terminal as set forth in claim 12, wherein the controller is capable of prompting an operator of the mobile terminal for permission to transmit the multimedia data to the remote display device via the first transceiver. To the extent Maxell contends Tee '758 does not disclose this limitation, a person of ordinary skill in the art would have readily arrived at this limitation by combining or modifying it in view of their general knowledge and/or the prior art references disclosed in the corresponding section of Samsung's Invalidity Contentions.

'590 Patent Claim Limitation	Tee '758 Exemplary Disclosure
[1k] wherein the controller controls each of the first and second radio communication circuit so that the first radio communication circuit transmits video information and the second radio communication circuit connects to the internet or the home network simultaneously, and	Tee '758 discloses “wherein the controller controls each of the first and second radio communication circuit so that the first radio communication circuit transmits video information and the second radio communication circuit connects to the internet or the home network simultaneously.” For example: Tee '758 at ¶ 18 An exemplary mobile terminal may be used for mobile communications and as a gateway for a short-range wireless network, also called a personal area network (PAN). The mobile terminal may support a variety of mobile applications, including voice, multimedia (i.e., video, graphics, text, and audio downloads), video conferencing, web browsing, file download, VPN and Internet gaming. Advantageously, when the mobile terminal is near a higher quality display (e.g., a TV screen), the mobile terminal relays its video data to the external display device as well as to its internal display. This enables the operator of the mobile terminal to view the information on the higher quality display device, and to share the displayed information with other people at the same location, e.g., in a video conference call, or watching the latest broadcasting and streaming of News or events of common interests. Note that in the latter example, the source of information could be a remote Internet web server instead of a conventional TV broadcasting station. A remote Internet web server does not have the same geographical coverage limit as a conventional TV broadcasting station. In the case of group video conferencing using, for example, a digital camera phone, it would be more practical and ergonomically correct to have the received video data displayed on an external screen, while the phone camera captures and transmits the local user images. Tee '758 at ¶ 25 FIG. 2 illustrates exemplary mobile terminal 110 in greater detail according to an exemplary embodiment of the disclosure. Mobile terminal 110 comprises wide-area network (WAN) transceiver (X-CVR) 201, wireless local area network (WLAN) transceiver (X-CVR) 202, and personal area network (PAN) transceiver (X-CVR) 203. In an embodiment, only one of WLAN transceiver 202 and PAN transceiver 203 may be employed. Mobile terminal 110 also comprises control processor 210, memory 215, speaker 225, microphone 230, input/output interface (I/O IF) 235, keypad 240 and display 245. Memory 215 stores basic operating system (OS) program 250, display select program 260, video conversion program 270, video/multimedia file 280, and one or more video application programs 290. Display select program 260 comprises local display parameters file 261 and remote display parameters file 262. Tee '758 at ¶ 26 Control processor 210 and memory 215 function as a controller that controls the overall operation of mobile terminal 110. Control processor 210 executes basic OS program 250 in order to control, among

'590 Patent Claim Limitation	Tee '758 Exemplary Disclosure
	other things, transceivers 201, 202 and 203. Control processor 210 receives operator inputs from keypad 240 or another user input device (not shown) and displays data on display 245. If mobile terminal 110 is, for example, a cell phone, control processor 210 can receive a voice signal from microphone 230 and can send voice signals to speaker 225. I/O interface 235 allows control processor 210 to be coupled to, and communicate with, another device, including, for example, a docking station, a data cord, an operator input device, or the like. Tee '758 at ¶ 27 In the exemplary embodiment, control processor 210 uses WAN transceiver 201 to communicate over a wide area network. For example, WAN transceiver 201 may be a GSM/GPRS/EDGE transceiver, a CDMA2000/1xEV-DO transceiver, or an IEEE-802.16x transceiver that communicates with base station 120 of a wide-area network. Control processor 210 may use WLAN transceiver 202 to communicate in a wireless local area network (WLAN) environment, such as an office WLAN that may have a coverage area or range of several hundred feet. By way of example, WLAN transceiver 202 may be an IEEE-802.11x transceiver. Control processor 210 may use PAN transceiver 203 to communicate in a personal area network (PAN) environment, such as a Bluetooth or IEEE-802.15.3 communication link that may have a coverage area or range around 10-20 meters. Tee '758 at ¶ 28 In an alternate embodiment, mobile terminal 110 may communicate with BS 120 via a first air interface (or wireless interface) and with an external device that has a display screen via a second air interface (or wireless interface). Thus, mobile terminal 110 may comprise only two transceivers. Advantageously, one or more of transceivers 201-203 may be based on software-defined radio (SDR) technology and therefore may be capable of communicating according to more than one wireless interface standard. Tee '758 at ¶ 29 Additionally, depending on the distances involved, mobile terminal 110 may receive an incoming video and/or multimedia stream from any one of WAN transceiver 201, WLAN transceiver 202, and PAN transceiver 203 and may relay the video and/or multimedia stream to an external device using, for example, WLAN transceiver 202 or PAN transceiver 203. Essentially, this air interface functions similarly to I/O interface 235, but over the wireless link. Tee '758 at ¶ 30 In one example, mobile terminal 201 may receive a video stream from BS 120 via WAN transceiver 201 and may relay the video stream over a short distance to a remote display device via WLAN transceiver

'590 Patent Claim Limitation	Tee '758 Exemplary Disclosure
	202 or PAN transceiver 203. This may occur when mobile terminal 201 communicates with BS 120 in a cellular network and the remote display communicates with mobile terminal 110 using, for example, an IEEE-802.11x transceiver (i.e., communicates with WLAN transceiver 202) or a Bluetooth or IEEE-802.15.3x transceiver (i.e., communicates with PAN transceiver 203). Tee '758 at ¶ 33 Control processor 210 executes video/multimedia application program 290 in order to display video data on display 245. Control processor 210 executes video conversion program 270 in order to re-format (if necessary) the video data downloaded from server 150 through the one wireless interface (e.g., WAN transceiver 201) to a suitable format for re-transmission via another wireless interface (e.g., WLAN transceiver 202 or PAN transceiver 203). Additionally, video/multimedia application program 290 may retrieve video/multimedia data from video/multimedia file 280 and transmit a video stream to a remote device via a wireless interface. Advantageously, the wireless interface may have more than one connection at the same time. For example, PAN transceiver 203 may transmit video to television 131 while simultaneously communicating with wireless keyboard 240. Tee '758 at ¶ 36 Under control of display select program 260, control processor 210 compares the parameters in remote display parameters file 262 to the parameters in local display parameters file 261 and selects the display best suited to video/multimedia application program 290. If the display of the external device is selected, control processor 210 transfers the video/multimedia data to the appropriate one of transceivers 202 and 203. Control processor 210 may prompt the operator of mobile terminal 110 for permission to transmit video/multimedia data to the remote display device. Control processor 210 may also continue to send video/multimedia data to display 245 for simultaneous display. In an alternate embodiment, it may be assumed that the remote display is better than display 245. In such an embodiment, control processor 210 may select the remote display (with or without operator permission) without comparing parameters associated with display 245 and the remote display. Tee '758 at ¶ 37 FIG. 3 depicts flow diagram 300, which illustrates the operation of exemplary mobile terminal 110 and a remote display device according to one embodiment of the disclosure. Initially, mobile terminal 110 accesses base station 120 via an air interface (e.g., transceiver 201 or 202) and initiates a video/multimedia download from server 150 (process step 305). Alternatively, mobile terminal 110 may play back video/multimedia data stored in video/multimedia file 280. At some point, mobile terminal 110 detects the presence of a remote display device (e.g., television 131) via another air interface (e.g.,

'590 Patent Claim Limitation	Tee '758 Exemplary Disclosure
	transceiver 202 or 203) and establishes a wireless link with the remote display device (process step 310), with the authorization of the mobile terminal user. Tee '758 at ¶ 38 Mobile terminal 110 then requests the capabilities of the remote display device and compares the capabilities of the remote display device and local display 245 (process step 315). Mobile terminal 110 may prompt the operator to select the remote display device (process step 320). Assuming the remote display device is selected, mobile terminal 110 then forwards (or relays or re-transmits) the video stream from base station 120 (or video/multimedia file 280) to the remote display device (process step 325). Optionally, mobile terminal 110 may wirelessly communicate with a remote user input device, such as keyboard 133 process step 330). Optionally, if video/multimedia application program 290 is a video conferencing application, mobile terminal 110 receives via the short-range air interface video/multimedia data from a remote video camera and relays the camera video data to base station 120 (process step 335). To the extent Maxell contends Tee '758 does not disclose this limitation, a person of ordinary skill in the art would have readily arrived at this limitation by combining or modifying it in view of their general knowledge and/or the prior art references disclosed in the corresponding section of Samsung's Invalidity Contentions.
[11] wherein the second or third radio communication circuits receive a signal from the internet indicating that an update for an operating system of the video processing apparatus is available, and the video processing apparatus executes an update process such that an updated operating system of the video processing apparatus is stored in the video processing apparatus after execution of the update process.	Tee '758 discloses “wherein the second or third radio communication circuits receive a signal from the internet indicating that an update for an operating system of the video processing apparatus is available, and the video processing apparatus executes an update process such that an updated operating system of the video processing apparatus is stored in the video processing apparatus after execution of the update process.” For example: Tee '758 at ¶ 25 FIG. 2 illustrates exemplary mobile terminal 110 in greater detail according to an exemplary embodiment of the disclosure. Mobile terminal 110 comprises wide-area network (WAN) transceiver (X-CVR) 201, wireless local area network (WLAN) transceiver (X-CVR) 202, and personal area network (PAN) transceiver (X-CVR) 203. In an embodiment, only one of WLAN transceiver 202 and PAN transceiver 203 may be employed. Mobile terminal 110 also comprises control processor 210, memory 215, speaker 225, microphone 230, input/output interface (I/O IF) 235, keypad 240 and display 245. Memory 215 stores basic operating system (OS) program 250, display select program 260, video conversion program 270, video/multimedia file 280, and one or more video application programs 290. Display select program 260 comprises local display parameters file 261 and remote display parameters file 262.

'590 Patent Claim Limitation	Tee '758 Exemplary Disclosure
	To the extent Maxell contends Tee '758 does not disclose this limitation, a person of ordinary skill in the art would have readily arrived at this limitation by combining or modifying it in view of their general knowledge and/or the prior art references disclosed in the corresponding section of Samsung's Invalidity Contentions.
[5pre] 5. A display apparatus, comprising:	To the extent the preamble is limiting, Tee '758 discloses "[a] display apparatus." For example: Tee '758 at Figure 1  FIG. 1 Tee '758 at ¶ 6 A mobile terminal is provided. According to an advantageous embodiment, the mobile terminal comprises a local display capable of displaying multimedia data, a controller capable of transmitting the multimedia data to the local display, and a first transceiver capable of communicating with a remote display device. The controller is capable of comparing display parameter information associated with the external display device to display parameter information associated with the local display and, in response to the comparison, transmitting the multimedia data to the external display device via the first transceiver.

Tee '758 at ¶ 15

The mobile terminal disclosed herein overcomes the limitations of a small display screen by receiving video data (i.e., display data) over a first wireless interface and transmitting (or relaying) the video data over a second wireless interface to an external (or remote) device having a better (bigger) display, such as a television, a computer monitor, a laptop computer, the dashboard display of a car, a video projection device, and the like. For the purposes of this disclosure and the claims herein, the video data, which may also be referred to as multimedia data, is defined to include not only the video data itself, but may also include the audio data, text data, and control data that may accompany the video data.

Tee '758 at ¶ 22

According to an advantageous embodiment, mobile terminal 110 may relay a video stream to a remote device in order to allow the operator of mobile terminal 110 to view the video on a better display. By way of example, mobile terminal 110 may be receiving streaming video data from server 150 via IP network 140 and base station 120. The streaming video is displayed on the display of mobile terminal 110. At some point, mobile terminal 110 may be located near to television 131 and establish a wireless communication link via the short-range wireless protocol (e.g., IEEE-802.11x/802.15.3x) with television 131. Mobile terminal 110 may then request information from television 131 regarding the capabilities of the display screen of television 131.

Tee '758 at ¶ 23

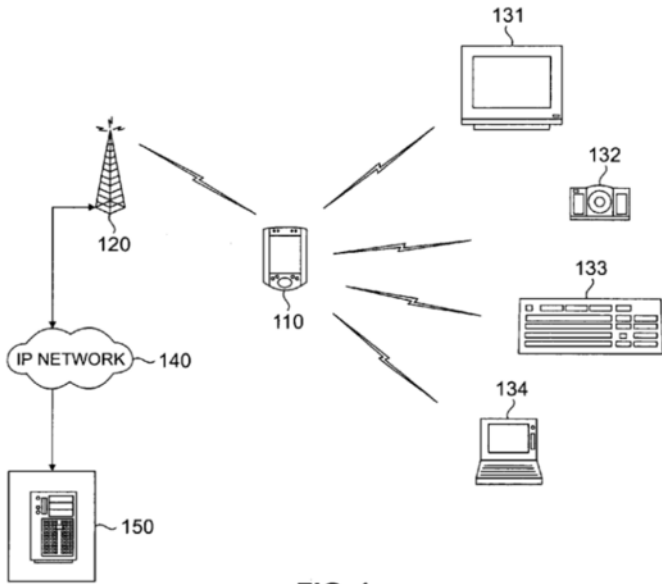
Assuming television 131 is a more desirable display than mobile terminal 110, mobile terminal 110 may relay the streaming video signal to television 131 via the short-range (or PAN) wireless communication link. This may be done automatically, or mobile terminal 110 may prompt the operator of mobile terminal 110 to select television 131 before relaying the video signal. Similarly, mobile terminal 110 may transmit a video signal over the short-range PAN connection to computer 134, projector 132, or any other remote device that has a display screen.

Tee '758 at ¶ 24

It is not required that mobile terminal 110 receive an incoming video stream from base station 120. In an alternate scenario, mobile terminal 110 may execute a video application and/or a multimedia application that plays back a video file and/or multimedia file stored in memory in mobile terminal 110. Mobile terminal 110 then transmits the video (or multimedia) stream from the stored file to television 131 (or another device) for viewing.

Tee '758 at ¶ 29

'590 Patent Claim Limitation	Tee '758 Exemplary Disclosure
	Additionally, depending on the distances involved, mobile terminal 110 may receive an incoming video and/or multimedia stream from any one of WAN transceiver 201, WLAN transceiver 202, and PAN transceiver 203 and may relay the video and/or multimedia stream to an external device using, for example, WLAN transceiver 202 or PAN transceiver 203. Essentially, this air interface functions similarly to I/O interface 235, but over the wireless link. Tee '758 at ¶ 30 In one example, mobile terminal 201 may receive a video stream from BS 120 via WAN transceiver 201 and may relay the video stream over a short distance to a remote display device via WLAN transceiver 202 or PAN transceiver 203. This may occur when mobile terminal 201 communicates with BS 120 in a cellular network and the remote display communicates with mobile terminal 110 using, for example, an IEEE-802.11x transceiver (i.e., communicates with WLAN transceiver 202) or a Bluetooth or IEEE-802.15.3x transceiver (i.e., communicates with PAN transceiver 203). Tee '758 at ¶ 31 In another example, mobile terminal 201 may receive a video stream from a base station or access point of a home or office WLAN via WLAN transceiver 202 and may relay the video stream over a short distance to a remote display device via PAN transceiver 203. This may occur when the base station or access point in the office WLAN communicates with mobile terminal 110 using, for example, an IEEE-802.11x transceiver and the remote display communicates with mobile terminal 110 using, for example, a high data rate Bluetooth transceiver that is capable of supporting the required video data throughput. Tee '758 at ¶ 32 In a third example, mobile terminal 201 may receive a video stream from a base station, an access point, or a video source device via PAN transceiver 203 and may relay the video stream over a short distance to a remote display device via WLAN transceiver 202. This may occur if the video source with wireless capability transmits a video stream to mobile terminal 110 using, for example, a high data rate Bluetooth transceiver and the remote display communicates with mobile terminal 110 using, for example, an IEEE-802.11x transceiver. Tee '758 at ¶ 33 Control processor 210 executes video/multimedia application program 290 in order to display video data on display 245. Control processor 210 executes video conversion program 270 in order to re-format (if necessary) the video data downloaded from server 150 through the one wireless interface (e.g., WAN transceiver 201) to a suitable format for re-transmission via another wireless interface (e.g., WLAN

'590 Patent Claim Limitation	Tee '758 Exemplary Disclosure
	transceiver 202 or PAN transceiver 203). Additionally, video/multimedia application program 290 may retrieve video/multimedia data from video/multimedia file 280 and transmit a video stream to a remote device via a wireless interface. Advantageously, the wireless interface may have more than one connection at the same time. For example, PAN transceiver 203 may transmit video to television 131 while simultaneously communicating with wireless keyboard 240. To the extent Maxell contends Tee '758 does not disclose this limitation, a person of ordinary skill in the art would have readily arrived at this limitation by combining or modifying it in view of their general knowledge and/or the prior art references disclosed in the corresponding section of Samsung's Invalidity Contentions.
[5a] a first radio communication circuit implementing a first transmission scheme having a first modulation scheme and a first transmission frequency band, the first radio communication circuit capable of receiving video information by radio or transmitting information by radio using the first transmission frequency band;	Tee '758 discloses “a first radio communication circuit implementing a first transmission scheme having a first modulation scheme and a first transmission frequency band, the first radio communication circuit capable of receiving video information by radio or transmitting information by radio using the first transmission frequency band.” For example: Tee '758 at Figure 1  FIG. 1

Tee '758 at Figure 2

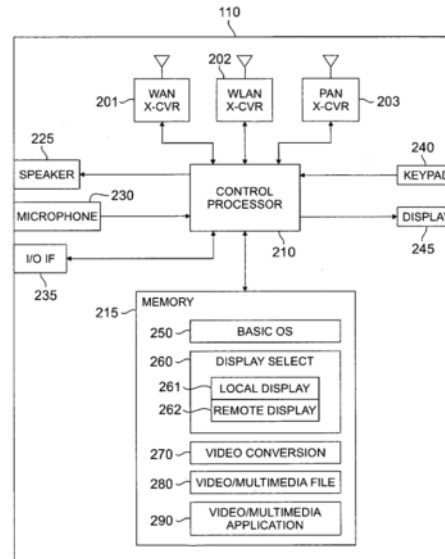


FIG. 2

Tee '758 at ¶ 6

A mobile terminal is provided. According to an advantageous embodiment, the mobile terminal comprises a local display capable of displaying multimedia data, a controller capable of transmitting the multimedia data to the local display, and a first transceiver capable of communicating with a remote display device. The controller is capable of comparing display parameter information associated with the external display device to display parameter information associated with the local display and, in response to the comparison, transmitting the multimedia data to the external display device via the first transceiver.

Tee '758 at ¶ 17

Generally, the first wireless interface supports mobile wireless communications, including, but not limited to IS-2000, 1xEV-DO, 1xEV-DV, GSM/GPRS/EDGE, 3GPP UTRAN, HSDPA/HSUPA, 3GPP EUTRAN, TD-CDMA, WiBro, WiMAX, IEEE-802.16x, IEEE-802.20, and IEEE-802.11x (e.g., WiFi) in a hotspot environment. The second wireless interface typically supports shorter range wireless communications, including, but not limited to IEEE-802.15.3x, MB-OFDM, UWB, Wireless USB, IEEE-802.11x (or WiFi), and a Bluetooth standard that supports high throughput applications

Tee '758 at ¶ 18

An exemplary mobile terminal may be used for mobile communications and as a gateway for a short-range wireless network, also called a personal area network (PAN). The mobile terminal may support a variety of mobile applications, including voice, multimedia (i.e., video, graphics, text, and audio downloads), video conferencing, web browsing, file download, VPN and Internet gaming. Advantageously, when the mobile terminal is near a higher quality display (e.g., a TV screen), the mobile terminal relays its video data to the external display device as well as to its internal display. This enables the operator of the mobile terminal to view the information on the higher quality display device, and to share the displayed information with other people at the same location, e.g., in a video conference call, or watching the latest broadcasting and streaming of News or events of common interests. Note that in the latter example, the source of information could be a remote Internet web server instead of a conventional TV broadcasting station. A remote Internet web server does not have the same geographical coverage limit as a conventional TV broadcasting station. In the case of group video conferencing using, for example, a digital camera phone, it would be more practical and ergonomically correct to have the received video data displayed on an external screen, while the phone camera captures and transmits the local user images.

Tee '758 at ¶ 20

Mobile terminal 110 is capable of communicating with one or more types of wireless wide-area networks (WANs), including conventional cellular networks and wireless local area networks (WLANs). By way of example, mobile terminal 110 may communicate with base station (BS) 120, which may be associated with a CDMA2000/1xEV-DO/1xEV-DV network, a GSM/GPRS/EDGE network, an IEEE-802.16x network, or the like. In other embodiments, base station 120 may communicate according to such wireless interface standards, or their evolutions, as 1xEV-DO, 1xEV-DV, GSM/GPRS/EDGE, 3GPP UTRAN, HSDPA/HSUPA, 3GPP EUTRAN, TD-CDMA, WiBro, WiMAX, IEEE-802.20, or IEEE-802.11x, among others. Base station 120 provides mobile terminal 110 with access to voice networks, such as the public switched telephone network (PSTN), and to data networks, including, for example, the Internet or proprietary Internet protocol (IP) networks. In the illustrated embodiment, BS 120 provides mobile terminal 110 with access to server 150 via IP network 140.

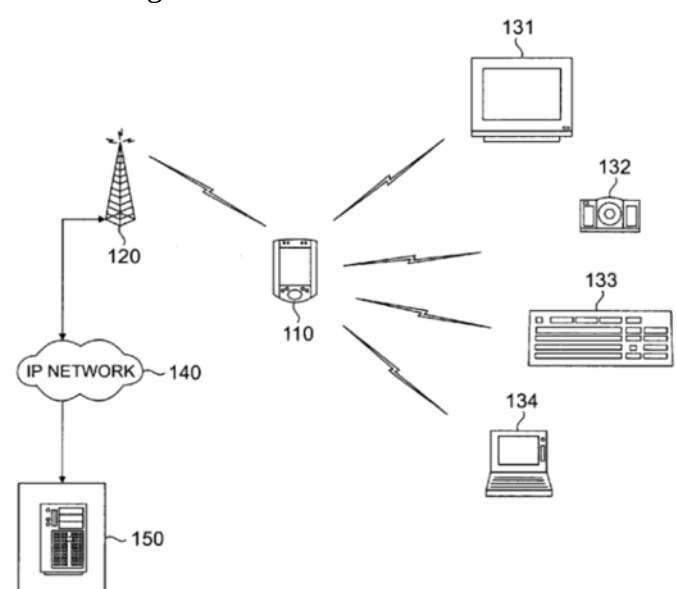
Tee '758 at ¶ 21

Mobile terminal 110 is also capable of communicating with one or more types of external (or remote) devices via a short-range wireless interface standard, such as IEEE-802.11x, ultra-wideband (UWB), IEEE-802.15.3x, MB-OFDM, Wireless USB, or a Bluetooth standard that supports high throughput applications, among others. It is assumed for the purposes of this disclosure that any such remote device

'590 Patent Claim Limitation	Tee '758 Exemplary Disclosure
	comprises a wireless transceiver that can communicate with mobile terminal 110 in order to establish a personal area network (PAN) connection. By way of example, mobile terminal 110 may communicate with television 131 (or computer monitor 131), projector 132, keyboard 133, and laptop (or handheld) personal computer (PC) 134. If the remote device is capable of displaying video (e.g., television 131), it is assumed that the wireless transceiver of the remote device supports a relatively high data rate that is suitable for video applications and/or multimedia applications. Tee '758 at ¶ 22 According to an advantageous embodiment, mobile terminal 110 may relay a video stream to a remote device in order to allow the operator of mobile terminal 110 to view the video on a better display. By way of example, mobile terminal 110 may be receiving streaming video data from server 150 via IP network 140 and base station 120. The streaming video is displayed on the display of mobile terminal 110. At some point, mobile terminal 110 may be located near to television 131 and establish a wireless communication link via the short-range wireless protocol (e.g., IEEE-802.11x/802.15.3x) with television 131. Mobile terminal 110 may then request information from television 131 regarding the capabilities of the display screen of television 131. Tee '758 at ¶ 24 Advantageously, mobile terminal 110 is also capable of establishing a communication link with keyboard 133 (or another input device such as an electronic notepad) via the short-range PAN connection in order to allow the operator of mobile terminal 110 to use keyboard 133 (or the other input device) in lieu of the keyboard or other control buttons on mobile terminal 110. By way of example, mobile terminal 110 may establish a Bluetooth connection to keyboard 133 in order to allow the operator to use keyboard 133 to control mobile terminal 110. In this scenario, the external keyboard, external display and the mobile terminal are connected in the form of a conventional computer, with air interface 1 connecting the computer (with the MT playing the role of the computing unit) to the Internet, and air interface 2 or 3 connecting the computer to the external keyboard and display. If air interface 2 can support both connections between the MT and keyboard or display simultaneously, it is not necessary to have air interface 3. Tee '758 at ¶ 25 FIG. 2 illustrates exemplary mobile terminal 110 in greater detail according to an exemplary embodiment of the disclosure. Mobile terminal 110 comprises wide-area network (WAN) transceiver (X-CVR) 201, wireless local area network (WLAN) transceiver (X-CVR) 202, and personal area network (PAN) transceiver (X-CVR) 203. In an embodiment, only one of WLAN transceiver 202 and PAN transceiver

'590 Patent Claim Limitation	Tee '758 Exemplary Disclosure
	203 may be employed. Mobile terminal 110 also comprises control processor 210, memory 215, speaker 225, microphone 230, input/output interface (I/O IF) 235, keypad 240 and display 245. Memory 215 stores basic operating system (OS) program 250, display select program 260, video conversion program 270, video/multimedia file 280, and one or more video application programs 290. Display select program 260 comprises local display parameters file 261 and remote display parameters file 262. Tee '758 at ¶ 26 Control processor 210 and memory 215 function as a controller that controls the overall operation of mobile terminal 110. Control processor 210 executes basic OS program 250 in order to control, among other things, transceivers 201, 202 and 203. Control processor 210 receives operator inputs from keypad 240 or another user input device (not shown) and displays data on display 245. If mobile terminal 110 is, for example, a cell phone, control processor 210 can receive a voice signal from microphone 230 and can send voice signals to speaker 225. I/O interface 235 allows control processor 210 to be coupled to, and communicate with, another device, including, for example, a docking station, a data cord, an operator input device, or the like. Tee '758 at ¶ 27 In the exemplary embodiment, control processor 210 uses WAN transceiver 201 to communicate over a wide area network. For example, WAN transceiver 201 may be a GSM/GPRS/EDGE transceiver, a CDMA2000/1xEV-DO transceiver, or an IEEE-802.16x transceiver that communicates with base station 120 of a wide-area network. Control processor 210 may use WLAN transceiver 202 to communicate in a wireless local area network (WLAN) environment, such as an office WLAN that may have a coverage area or range of several hundred feet. By way of example, WLAN transceiver 202 may be an IEEE-802.11x transceiver. Control processor 210 may use PAN transceiver 203 to communicate in a personal area network (PAN) environment, such as a Bluetooth or IEEE-802.15.3 communication link that may have a coverage area or range around 10-20 meters. Tee '758 at ¶ 28 In the illustrated embodiment in FIG. 2, three distinct transceivers are shown. However, this is by way of example only. Tee '758 at ¶ 28 In an alternate embodiment, mobile terminal 110 may communicate with BS 120 via a first air interface (or wireless interface) and with an external device that has a display screen via a second air interface (or wireless interface). Thus, mobile terminal 110 may comprise only two transceivers. Advantageously, one

'590 Patent Claim Limitation	Tee '758 Exemplary Disclosure
	or more of transceivers 201-203 may be based on software-defined radio (SDR) technology and therefore may be capable of communicating according to more than one wireless interface standard. Tee '758 at ¶ 36 Under control of display select program 260, control processor 210 compares the parameters in remote display parameters file 262 to the parameters in local display parameters file 261 and selects the display best suited to video/multimedia application program 290. If the display of the external device is selected, control processor 210 transfers the video/multimedia data to the appropriate one of transceivers 202 and 203. Control processor 210 may prompt the operator of mobile terminal 110 for permission to transmit video/multimedia data to the remote display device. Control processor 210 may also continue to send video/multimedia data to display 245 for simultaneous display. In an alternate embodiment, it may be assumed that the remote display is better than display 245. In such an embodiment, control processor 210 may select the remote display (with or without operator permission) without comparing parameters associated with display 245 and the remote display. Tee '758 at claim 1 1. A mobile terminal comprising: a local display capable of displaying multimedia data; a controller capable of transmitting the multimedia data to the local display; and a first transceiver capable of communicating with a remote display device, wherein the controller is capable of comparing display parameter information associated with the remote display device to display parameter information associated with the local display and, in response to the comparison, transmitting the multimedia data to the remote display device via the first transceiver. Tee '758 at claims 15–17 15. The mobile terminal as set forth in claim 9, wherein the first transceiver comprises a personal area network transceiver. 16. The mobile terminal as set forth in claim 15, wherein the personal area network transceiver comprises one of: an IEEE-802.15.3x transceiver, an MB-OFDM transceiver, a UWB transceiver, a wireless USB transceiver, an IEEE-802.11x transceiver, and a Bluetooth transceiver. 17. The mobile terminal as set forth in claim 9, wherein the second transceiver comprises one of an IS-2000 transceiver, a 1xEV-DO transceiver, a 1xEV-DV transceiver, a GSM/GPRS/EDGE transceiver, a 3GPP UTRAN transceiver, an HSDPA/HSUPA transceiver, a 3GPP EUTRAN transceiver, a TD-CDMA transceiver, a WiBro transceiver, a WiMAX transceiver, an IEEE-802.16x transceiver, an IEEE-802.20 transceiver, and an IEEE-802.11x transceiver.

'590 Patent Claim Limitation	Tee '758 Exemplary Disclosure
	To the extent Maxell contends Tee '758 does not disclose this limitation, a person of ordinary skill in the art would have readily arrived at this limitation by combining or modifying it in view of their general knowledge and/or the prior art references disclosed in the corresponding section of Samsung's Invalidity Contentions.
[5b] a second radio communication circuit implementing a second transmission scheme having a second modulation scheme different from the first modulation scheme and a second transmission frequency band different from the first transmission frequency band, the second radio communication circuit capable of connecting by radio to an internet or a home network to transmit and receive information using the second transmission frequency band;	Tee '758 discloses “a second radio communication circuit implementing a second transmission scheme having a second modulation scheme different from the first modulation scheme and a second transmission frequency band different from the first transmission frequency band, the second radio communication circuit capable of connecting by radio to an internet or a home network to transmit and receive information using the second transmission frequency band.” For example: Tee '758 at Figure 1  FIG. 1

Tee '758 at Figure 2

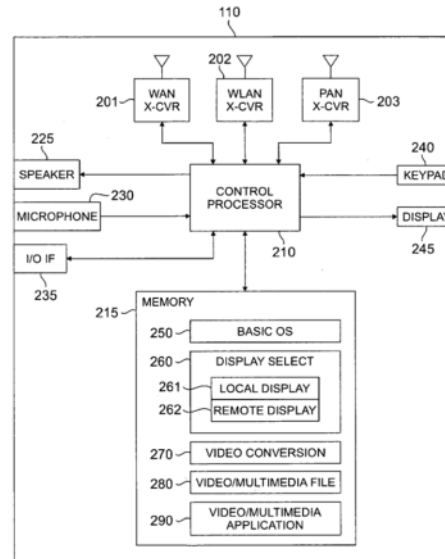


FIG. 2

Tee '758 at ¶ 17

Generally, the first wireless interface supports mobile wireless communications, including, but not limited to IS-2000, 1xEV-DO, 1xEV-DV, GSM/GPRS/EDGE, 3GPP UTRAN, HSDPA/HSUPA, 3GPP EUTRAN, TD-CDMA, WiBro, WiMAX, IEEE-802.16x, IEEE-802.20, and IEEE-802.11x (e.g., WiFi) in a hotspot environment. The second wireless interface typically supports shorter range wireless communications, including, but not limited to IEEE-802.15.3x, MB-OFDM, UWB, Wireless USB, IEEE-802.11x (or WiFi), and a Bluetooth standard that supports high throughput applications

Tee '758 at ¶ 18

An exemplary mobile terminal may be used for mobile communications and as a gateway for a short-range wireless network, also called a personal area network (PAN). The mobile terminal may support a variety of mobile applications, including voice, multimedia (i.e., video, graphics, text, and audio downloads), video conferencing, web browsing, file download, VPN and Internet gaming. Advantageously, when the mobile terminal is near a higher quality display (e.g., a TV screen), the mobile terminal relays its video data to the external display device as well as to its internal display. This enables the operator of the mobile terminal to view the information on the higher quality display device, and to share the displayed information with other people at the same location, e.g., in a video conference call, or

'590 Patent Claim Limitation	Tee '758 Exemplary Disclosure
	watching the latest broadcasting and streaming of News or events of common interests. Note that in the latter example, the source of information could be a remote Internet web server instead of a conventional TV broadcasting station. A remote Internet web server does not have the same geographical coverage limit as a conventional TV broadcasting station. In the case of group video conferencing using, for example, a digital camera phone, it would be more practical and ergonomically correct to have the received video data displayed on an external screen, while the phone camera captures and transmits the local user images. Tee '758 at ¶ 20 Mobile terminal 110 is capable of communicating with one or more types of wireless wide-area networks (WANs), including conventional cellular networks and wireless local area networks (WLANs). By way of example, mobile terminal 110 may communicate with base station (BS) 120, which may be associated with a CDMA2000/1xEV-DO/1xEV-DV network, a GSM/GPRS/EDGE network, an IEEE-802.16x network, or the like. In other embodiments, base station 120 may communicate according to such wireless interface standards, or their evolutions, as 1xEV-DO, 1xEV-DV, GSM/GPRS/EDGE, 3GPP UTRAN, HSDPA/HSUPA, 3GPP EUTRAN, TD-CDMA, WiBro, WiMAX, IEEE-802.20, or IEEE-802.11x, among others. Base station 120 provides mobile terminal 110 with access to voice networks, such as the public switched telephone network (PSTN), and to data networks, including, for example, the Internet or proprietary Internet protocol (IP) networks. In the illustrated embodiment, BS 120 provides mobile terminal 110 with access to server 150 via IP network 140. Tee '758 at ¶ 21 Mobile terminal 110 is also capable of communicating with one or more types of external (or remote) devices via a short-range wireless interface standard, such as IEEE-802.11x, ultra-wideband (UWB), IEEE-802.15.3x, MB-OFDM, Wireless USB, or a Bluetooth standard that supports high throughput applications, among others. It is assumed for the purposes of this disclosure that any such remote device comprises a wireless transceiver that can communicate with mobile terminal 110 in order to establish a personal area network (PAN) connection. By way of example, mobile terminal 110 may communicate with television 131 (or computer monitor 131), projector 132, keyboard 133, and laptop (or handheld) personal computer (PC) 134. If the remote device is capable of displaying video (e.g., television 131), it is assumed that the wireless transceiver of the remote device supports a relatively high data rate that is suitable for video applications and/or multimedia applications.

Tee '758 at ¶ 24

Advantageously, mobile terminal 110 is also capable of establishing a communication link with keyboard 133 (or another input device such as an electronic notepad) via the short-range PAN connection in order to allow the operator of mobile terminal 110 to use keyboard 133 (or the other input device) in lieu of the keyboard or other control buttons on mobile terminal 110. By way of example, mobile terminal 110 may establish a Bluetooth connection to keyboard 133 in order to allow the operator to use keyboard 133 to control mobile terminal 110. In this scenario, the external keyboard, external display and the mobile terminal are connected in the form of a conventional computer, with air interface 1 connecting the computer (with the MT playing the role of the computing unit) to the Internet, and air interface 2 or 3 connecting the computer to the external keyboard and display. If air interface 2 can support both connections between the MT and keyboard or display simultaneously, it is not necessary to have air interface 3.

Tee '758 at ¶ 25

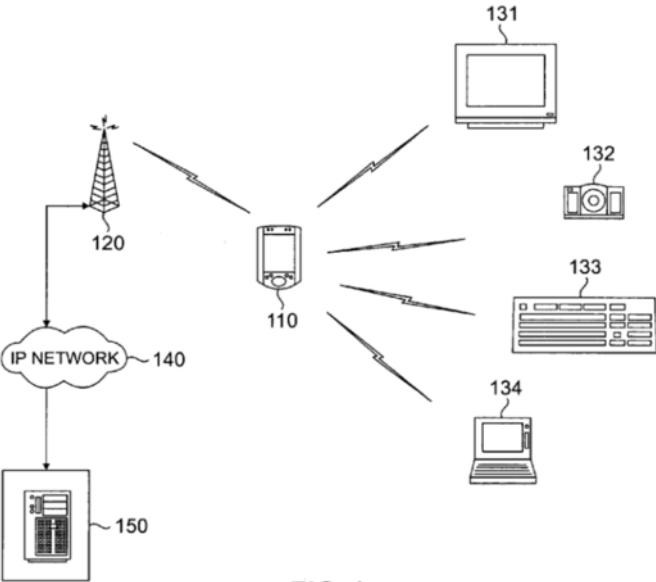
FIG. 2 illustrates exemplary mobile terminal 110 in greater detail according to an exemplary embodiment of the disclosure. Mobile terminal 110 comprises wide-area network (WAN) transceiver (X-CVR) 201, wireless local area network (WLAN) transceiver (X-CVR) 202, and personal area network (PAN) transceiver (X-CVR) 203. In an embodiment, only one of WLAN transceiver 202 and PAN transceiver 203 may be employed. Mobile terminal 110 also comprises control processor 210, memory 215, speaker 225, microphone 230, input/output interface (I/O IF) 235, keypad 240 and display 245. Memory 215 stores basic operating system (OS) program 250, display select program 260, video conversion program 270, video/multimedia file 280, and one or more video application programs 290. Display select program 260 comprises local display parameters file 261 and remote display parameters file 262.

Tee '758 at ¶ 26

Control processor 210 and memory 215 function as a controller that controls the overall operation of mobile terminal 110. Control processor 210 executes basic OS program 250 in order to control, among other things, transceivers 201, 202 and 203. Control processor 210 receives operator inputs from keypad 240 or another user input device (not shown) and displays data on display 245. If mobile terminal 110 is, for example, a cell phone, control processor 210 can receive a voice signal from microphone 230 and can send voice signals to speaker 225. I/O interface 235 allows control processor 210 to be coupled to, and communicate with, another device, including, for example, a docking station, a data cord, an operator input device, or the like.

Tee '758 at ¶ 27

'590 Patent Claim Limitation	Tee '758 Exemplary Disclosure
	In the exemplary embodiment, control processor 210 uses WAN transceiver 201 to communicate over a wide area network. For example, WAN transceiver 201 may be a GSM/GPRS/EDGE transceiver, a CDMA2000/1xEV-DO transceiver, or an IEEE-802.16x transceiver that communicates with base station 120 of a wide-area network. Control processor 210 may use WLAN transceiver 202 to communicate in a wireless local area network (WLAN) environment, such as an office WLAN that may have a coverage area or range of several hundred feet. By way of example, WLAN transceiver 202 may be an IEEE-802.11x transceiver. Control processor 210 may use PAN transceiver 203 to communicate in a personal area network (PAN) environment, such as a Bluetooth or IEEE-802.15.3 communication link that may have a coverage area or range around 10-20 meters. Tee '758 at ¶ 28 In the illustrated embodiment in FIG. 2, three distinct transceivers are shown. However, this is by way of example only. Tee '758 at ¶ 28 In an alternate embodiment, mobile terminal 110 may communicate with BS 120 via a first air interface (or wireless interface) and with an external device that has a display screen via a second air interface (or wireless interface). Thus, mobile terminal 110 may comprise only two transceivers. Advantageously, one or more of transceivers 201-203 may be based on software-defined radio (SDR) technology and therefore may be capable of communicating according to more than one wireless interface standard. Tee '758 at claim 9 9. The mobile terminal as set forth in claim 1, further comprising a second transceiver capable of communicating with a wireless network. Tee '758 at claims 15–17 15. The mobile terminal as set forth in claim 9, wherein the first transceiver comprises a personal area network transceiver. 16. The mobile terminal as set forth in claim 15, wherein the personal area network transceiver comprises one of: an IEEE-802.15.3x transceiver, an MB-OFDM transceiver, a UWB transceiver, a wireless USB transceiver, an IEEE-802.11x transceiver, and a Bluetooth transceiver. 17. The mobile terminal as set forth in claim 9, wherein the second transceiver comprises one of an IS-2000 transceiver, a 1xEV-DO transceiver, a 1xEV-DV transceiver, a GSM/GPRS/EDGE transceiver, a 3GPP UTRAN transceiver, an HSDPA/HSUPA transceiver, a 3GPP EUTRAN transceiver, a TD-CDMA

'590 Patent Claim Limitation	Tee '758 Exemplary Disclosure
	transceiver, a WiBro transceiver, a WiMAX transceiver, an IEEE-802.16x transceiver, an IEEE-802.20 transceiver, and an IEEE-802.11x transceiver. To the extent Maxell contends Tee '758 does not disclose this limitation, a person of ordinary skill in the art would have readily arrived at this limitation by combining or modifying it in view of their general knowledge and/or the prior art references disclosed in the corresponding section of Samsung's Invalidity Contentions.
[5c] a third radio communication circuit capable of transmitting information and using a third transmission frequency band;	Tee '758 discloses “a third radio communication circuit capable of transmitting information and using a third transmission frequency band.” For example: Tee '758 at Figure 1  FIG. 1

Tee '758 at Figure 2

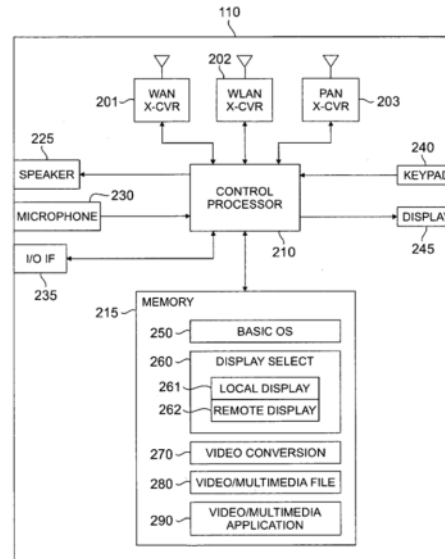


FIG. 2

Tee '758 at ¶ 17

Generally, the first wireless interface supports mobile wireless communications, including, but not limited to IS-2000, 1xEV-DO, 1xEV-DV, GSM/GPRS/EDGE, 3GPP UTRAN, HSDPA/HSUPA, 3GPP EUTRAN, TD-CDMA, WiBro, WiMAX, IEEE-802.16x, IEEE-802.20, and IEEE-802.11x (e.g., WiFi) in a hotspot environment. The second wireless interface typically supports shorter range wireless communications, including, but not limited to IEEE-802.15.3x, MB-OFDM, UWB, Wireless USB, IEEE-802.11x (or WiFi), and a Bluetooth standard that supports high throughput applications

Tee '758 at ¶ 20

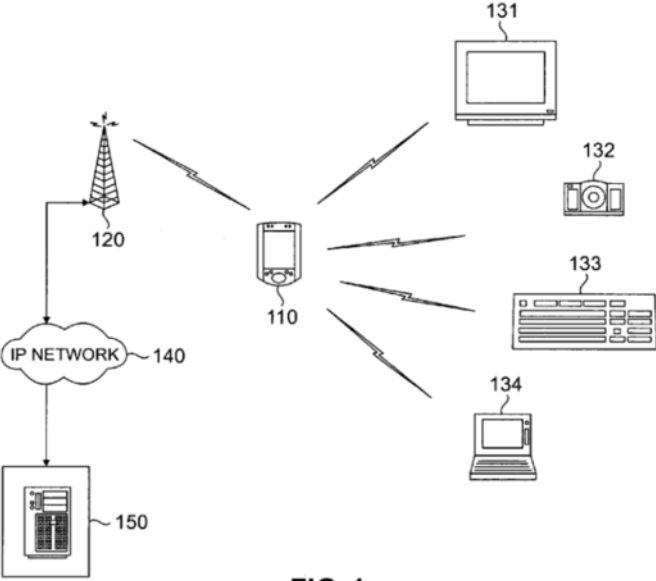
Mobile terminal 110 is capable of communicating with one or more types of wireless wide-area networks (WANs), including conventional cellular networks and wireless local area networks (WLANs). By way of example, mobile terminal 110 may communicate with base station (BS) 120, which may be associated with a CDMA2000/1xEV-DO/1xEV-DV network, a GSM/GPRS/EDGE network, an IEEE-802.16x network, or the like. In other embodiments, base station 120 may communicate according to such wireless interface standards, or their evolutions, as 1xEV-DO, 1xEV-DV, GSM/GPRS/EDGE, 3GPP UTRAN, HSDPA/HSUPA, 3GPP EUTRAN, TD-CDMA, WiBro, WiMAX, IEEE-802.20, or IEEE-802.11x, among others. Base station 120 provides mobile terminal 110 with access to voice networks,

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	such as the public switched telephone network (PSTN), and to data networks, including, for example, the Internet or proprietary Internet protocol (IP) networks. In the illustrated embodiment, BS 120 provides mobile terminal 110 with access to server 150 via IP network 140. Tee '758 at ¶ 21 Mobile terminal 110 is also capable of communicating with one or more types of external (or remote) devices via a short-range wireless interface standard, such as IEEE-802.11x, ultra-wideband (UWB), IEEE-802.15.3x, MB-OFDM, Wireless USB, or a Bluetooth standard that supports high throughput applications, among others. It is assumed for the purposes of this disclosure that any such remote device comprises a wireless transceiver that can communicate with mobile terminal 110 in order to establish a personal area network (PAN) connection. By way of example, mobile terminal 110 may communicate with television 131 (or computer monitor 131), projector 132, keyboard 133, and laptop (or handheld) personal computer (PC) 134. If the remote device is capable of displaying video (e.g., television 131), it is assumed that the wireless transceiver of the remote device supports a relatively high data rate that is suitable for video applications and/or multimedia applications. Tee '758 at ¶ 24 Advantageously, mobile terminal 110 is also capable of establishing a communication link with keyboard 133 (or another input device such as an electronic notepad) via the short-range PAN connection in order to allow the operator of mobile terminal 110 to use keyboard 133 (or the other input device) in lieu of the keyboard or other control buttons on mobile terminal 110. By way of example, mobile terminal 110 may establish a Bluetooth connection to keyboard 133 in order to allow the operator to use keyboard 133 to control mobile terminal 110. In this scenario, the external keyboard, external display and the mobile terminal are connected in the form of a conventional computer, with air interface 1 connecting the computer (with the MT playing the role of the computing unit) to the Internet, and air interface 2 or 3 connecting the computer to the external keyboard and display. If air interface 2 can support both connections between the MT and keyboard or display simultaneously, it is not necessary to have air interface 3. Tee '758 at ¶ 25 FIG. 2 illustrates exemplary mobile terminal 110 in greater detail according to an exemplary embodiment of the disclosure. Mobile terminal 110 comprises wide-area network (WAN) transceiver (X-CVR) 201, wireless local area network (WLAN) transceiver (X-CVR) 202, and personal area network (PAN) transceiver (X-CVR) 203. In an embodiment, only one of WLAN transceiver 202 and PAN transceiver 203 may be employed. Mobile terminal 110 also comprises control processor 210, memory 215, speaker

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	225, microphone 230, input/output interface (I/O IF) 235, keypad 240 and display 245. Memory 215 stores basic operating system (OS) program 250, display select program 260, video conversion program 270, video/multimedia file 280, and one or more video application programs 290. Display select program 260 comprises local display parameters file 261 and remote display parameters file 262. Tee '758 at ¶ 26 Control processor 210 and memory 215 function as a controller that controls the overall operation of mobile terminal 110. Control processor 210 executes basic OS program 250 in order to control, among other things, transceivers 201, 202 and 203. Control processor 210 receives operator inputs from keypad 240 or another user input device (not shown) and displays data on display 245. If mobile terminal 110 is, for example, a cell phone, control processor 210 can receive a voice signal from microphone 230 and can send voice signals to speaker 225. I/O interface 235 allows control processor 210 to be coupled to, and communicate with, another device, including, for example, a docking station, a data cord, an operator input device, or the like. Tee '758 at ¶ 27 In the exemplary embodiment, control processor 210 uses WAN transceiver 201 to communicate over a wide area network. For example, WAN transceiver 201 may be a GSM/GPRS/EDGE transceiver, a CDMA2000/1xEV-DO transceiver, or an IEEE-802.16x transceiver that communicates with base station 120 of a wide-area network. Control processor 210 may use WLAN transceiver 202 to communicate in a wireless local area network (WLAN) environment, such as an office WLAN that may have a coverage area or range of several hundred feet. By way of example, WLAN transceiver 202 may be an IEEE-802.11x transceiver. Control processor 210 may use PAN transceiver 203 to communicate in a personal area network (PAN) environment, such as a Bluetooth or IEEE-802.15.3 communication link that may have a coverage area or range around 10-20 meters. Tee '758 at ¶ 28 In the illustrated embodiment in FIG. 2, three distinct transceivers are shown. However, this is by way of example only. Tee '758 at ¶ 28 In an alternate embodiment, mobile terminal 110 may communicate with BS 120 via a first air interface (or wireless interface) and with an external device that has a display screen via a second air interface (or wireless interface). Thus, mobile terminal 110 may comprise only two transceivers. Advantageously, one

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	or more of transceivers 201-203 may be based on software-defined radio (SDR) technology and therefore may be capable of communicating according to more than one wireless interface standard. Tee '758 at claims 15–17 15. The mobile terminal as set forth in claim 9, wherein the first transceiver comprises a personal area network transceiver. 16. The mobile terminal as set forth in claim 15, wherein the personal area network transceiver comprises one of: an IEEE-802.15.3x transceiver, an MB-OFDM transceiver, a UWB transceiver, a wireless USB transceiver, an IEEE-802.11x transceiver, and a Bluetooth transceiver. 17. The mobile terminal as set forth in claim 9, wherein the second transceiver comprises one of an IS-2000 transceiver, a 1xEV-DO transceiver, a 1xEV-DV transceiver, a GSM/GPRS/EDGE transceiver, a 3GPP UTRAN transceiver, an HSDPA/HSUPA transceiver, a 3GPP EUTRAN transceiver, a TD-CDMA transceiver, a WiBro transceiver, a WiMAX transceiver, an IEEE-802.16x transceiver, an IEEE-802.20 transceiver, and an IEEE-802.11x transceiver. To the extent Maxell contends Tee '758 does not disclose this limitation, a person of ordinary skill in the art would have readily arrived at this limitation by combining or modifying it in view of their general knowledge and/or the prior art references disclosed in the corresponding section of Samsung's Invalidity Contentions.
[5d] a compression circuit capable of implementing a plurality of compression schemes including a first compression scheme, the compression circuit compressing the video information received by the first radio communication circuit using the first compression scheme;	Tee '758 discloses “a compression circuit capable of implementing a plurality of compression schemes including a first compression scheme, the compression circuit compressing the video information received by the first radio communication circuit using the first compression scheme.” For example: Tee '758 at ¶ 18 An exemplary mobile terminal may be used for mobile communications and as a gateway for a short-range wireless network, also called a personal area network (PAN). The mobile terminal may support a variety of mobile applications, including voice, multimedia (i.e., video, graphics, text, and audio downloads), video conferencing, web browsing, file download, VPN and Internet gaming. Advantageously, when the mobile terminal is near a higher quality display (e.g., a TV screen), the mobile terminal relays its video data to the external display device as well as to its internal display. This enables the operator of the mobile terminal to view the information on the higher quality display device, and to share the displayed information with other people at the same location, e.g., in a video conference call, or watching the latest broadcasting and streaming of News or events of common interests. Note that in the latter example, the source of information could be a remote Internet web server instead of a conventional

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	TV broadcasting station. A remote Internet web server does not have the same geographical coverage limit as a conventional TV broadcasting station. In the case of group video conferencing using, for example, a digital camera phone, it would be more practical and ergonomically correct to have the received video data displayed on an external screen, while the phone camera captures and transmits the local user images. Tee '758 at ¶ 35 Under control of display select program 260, control processor 210 is capable of querying the remote device (e.g., television 131) to determine the quality of the display associated with the remote device, for example, by requesting the remote device to transmit parameters or attributes describing the capabilities of the remote device. If the attributes of the external display device are available, the data can be formatted accordingly before transmission through the second interface to the display device. However, it is not always necessary for the remote device to have the capability to respond to such an inquiry. Any standard protocol that is supported by the air interface would be sufficient for the mobile terminal to transmit the video data, and the similar air interface of the display device to receive, demodulate and decode the data. Nevertheless, it is assumed that the external display device has the capability to decode the received data and convert it to a signal/pixel format that is supported by the display mechanism, e.g., a MPEG4 decoder, and/or a Digital-to-Analog converter. Control processor 210 receives the display parameters associated with the remote device and stores these parameters in remote display parameters file 262. The parameters associated with display 245 are stored in local display parameters file 261. The parameter data may include, for example, display size, display type (CRT, LED, etc.), pixel size, refresh rate, and the like. Tee '758 at ¶ 38 Mobile terminal 110 then requests the capabilities of the remote display device and compares the capabilities of the remote display device and local display 245 (process step 315). Mobile terminal 110 may prompt the operator to select the remote display device (process step 320). Assuming the remote display device is selected, mobile terminal 110 then forwards (or relays or re-transmits) the video stream from base station 120 (or video/multimedia file 280) to the remote display device (process step 325). Optionally, mobile terminal 110 may wirelessly communicate with a remote user input device, such as keyboard 133 process step 330). Optionally, if video/multimedia application program 290 is a video conferencing application, mobile terminal 110 receives via the short-range air interface video/multimedia data from a remote video camera and relays the camera video data to base station 120 (process step 335).

'590 Patent Claim Limitation	Tee '758 Exemplary Disclosure
	To the extent Maxell contends Tee '758 does not disclose this limitation, a person of ordinary skill in the art would have readily arrived at this limitation by combining or modifying it in view of their general knowledge and/or the prior art references disclosed in the corresponding section of Samsung's Invalidity Contentions.
[5e] a display capable of displaying the information received by the first radio communication circuit or the second radio communication circuit; and	Tee '758 discloses “a display capable of displaying the information received by the first radio communication circuit or the second radio communication circuit.” For example: Tee '758 at Figure 1  FIG. 1

Tee '758 at Figure 2

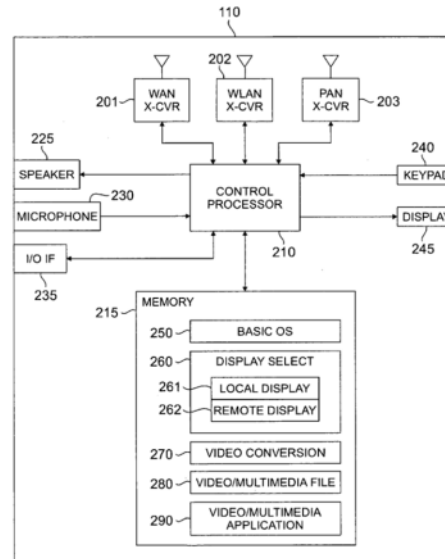


FIG. 2

Tee '758 at ¶ 6

A mobile terminal is provided. According to an advantageous embodiment, the mobile terminal comprises a local display capable of displaying multimedia data, a controller capable of transmitting the multimedia data to the local display, and a first transceiver capable of communicating with a remote display device. The controller is capable of comparing display parameter information associated with the external display device to display parameter information associated with the local display and, in response to the comparison, transmitting the multimedia data to the external display device via the first transceiver.

Tee '758 at ¶ 25

FIG. 2 illustrates exemplary mobile terminal 110 in greater detail according to an exemplary embodiment of the disclosure. Mobile terminal 110 comprises wide-area network (WAN) transceiver (X-CVR) 201, wireless local area network (WLAN) transceiver (X-CVR) 202, and personal area network (PAN) transceiver (X-CVR) 203. In an embodiment, only one of WLAN transceiver 202 and PAN transceiver 203 may be employed. Mobile terminal 110 also comprises control processor 210, memory 215, speaker 225, microphone 230, input/output interface (I/O IF) 235, keypad 240 and display 245. Memory 215 stores basic operating system (OS) program 250, display select program 260, video conversion program

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	270, video/multimedia file 280, and one or more video application programs 290. Display select program 260 comprises local display parameters file 261 and remote display parameters file 262. Tee '758 at ¶ 26 Control processor 210 and memory 215 function as a controller that controls the overall operation of mobile terminal 110. Control processor 210 executes basic OS program 250 in order to control, among other things, transceivers 201, 202 and 203. Control processor 210 receives operator inputs from keypad 240 or another user input device (not shown) and displays data on display 245. If mobile terminal 110 is, for example, a cell phone, control processor 210 can receive a voice signal from microphone 230 and can send voice signals to speaker 225. I/O interface 235 allows control processor 210 to be coupled to, and communicate with, another device, including, for example, a docking station, a data cord, an operator input device, or the like. Tee '758 at claim 1 1. A mobile terminal comprising: a local display capable of displaying multimedia data; a controller capable of transmitting the multimedia data to the local display; and a first transceiver capable of communicating with a remote display device, wherein the controller is capable of comparing display parameter information associated with the remote display device to display parameter information associated with the local display and, in response to the comparison, transmitting the multimedia data to the remote display device via the first transceiver. To the extent Maxell contends Tee '758 does not disclose this limitation, a person of ordinary skill in the art would have readily arrived at this limitation by combining or modifying it in view of their general knowledge and/or the prior art references disclosed in the corresponding section of Samsung's Invalidity Contentions.
[5f] a controller controlling assignment of connection of each of the first, second, and third radio communication circuits,	Tee '758 discloses "a controller controlling assignment of connection of each of the first, second, and third radio communication circuits." For example:

Tee '758 at Figure 1

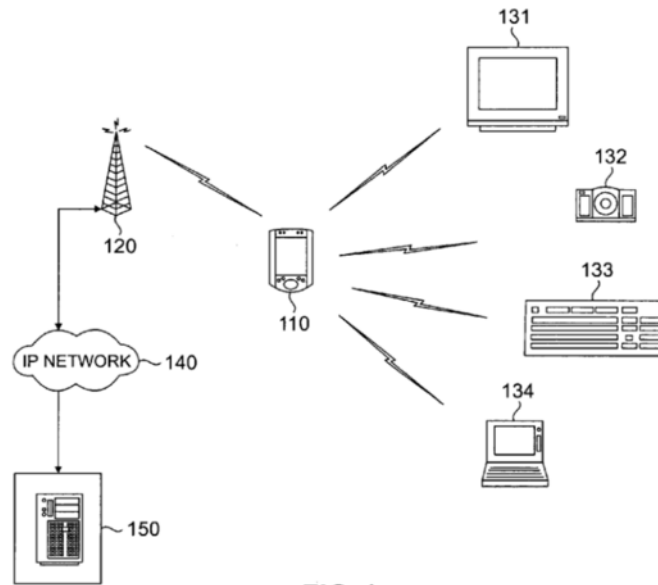


FIG. 1

Tee '758 at Figure 2

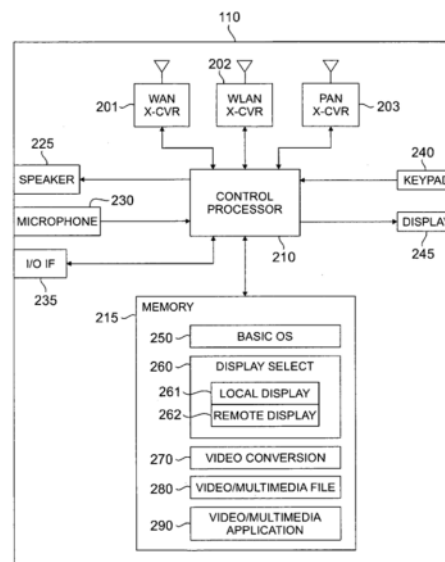


FIG. 2

Tee '758 at ¶ 6

A mobile terminal is provided. According to an advantageous embodiment, the mobile terminal comprises a local display capable of displaying multimedia data, a controller capable of transmitting the multimedia data to the local display, and a first transceiver capable of communicating with a remote display device. The controller is capable of comparing display parameter information associated with the external display device to display parameter information associated with the local display and, in response to the comparison, transmitting the multimedia data to the external display device via the first transceiver.

Tee '758 at ¶ 16

In some instances, the determination of whether the remote device has a better display may depend on the requirements of the video application executed by the mobile terminal. For many applications, it may be assumed that displays that are larger and have higher resolutions are better displays. The mobile terminal user may also make the decision as to which display to use.

Tee '758 at ¶ 17

Generally, the first wireless interface supports mobile wireless communications, including, but not limited to IS-2000, 1xEV-DO, 1xEV-DV, GSM/GPRS/EDGE, 3GPP UTRAN, HSDPA/HSUPA, 3GPP EUTRAN, TD-CDMA, WiBro, WiMAX, IEEE-802.16x, IEEE-802.20, and IEEE-802.11x (e.g., WiFi) in a hotspot environment. The second wireless interface typically supports shorter range wireless communications, including, but not limited to IEEE-802.15.3x, MB-OFDM, UWB, Wireless USB, IEEE-802.11x (or WiFi), and a Bluetooth standard that supports high throughput applications

Tee '758 at ¶ 25

FIG. 2 illustrates exemplary mobile terminal 110 in greater detail according to an exemplary embodiment of the disclosure. Mobile terminal 110 comprises wide-area network (WAN) transceiver (X-CVR) 201, wireless local area network (WLAN) transceiver (X-CVR) 202, and personal area network (PAN) transceiver (X-CVR) 203. In an embodiment, only one of WLAN transceiver 202 and PAN transceiver 203 may be employed. Mobile terminal 110 also comprises control processor 210, memory 215, speaker 225, microphone 230, input/output interface (I/O IF) 235, keypad 240 and display 245. Memory 215 stores basic operating system (OS) program 250, display select program 260, video conversion program 270, video/multimedia file 280, and one or more video application programs 290. Display select program 260 comprises local display parameters file 261 and remote display parameters file 262.

Tee '758 at ¶ 26

'590 Patent Claim Limitation	Tee '758 Exemplary Disclosure
	Control processor 210 and memory 215 function as a controller that controls the overall operation of mobile terminal 110. Control processor 210 executes basic OS program 250 in order to control, among other things, transceivers 201, 202 and 203. Control processor 210 receives operator inputs from keypad 240 or another user input device (not shown) and displays data on display 245. If mobile terminal 110 is, for example, a cell phone, control processor 210 can receive a voice signal from microphone 230 and can send voice signals to speaker 225. I/O interface 235 allows control processor 210 to be coupled to, and communicate with, another device, including, for example, a docking station, a data cord, an operator input device, or the like. Tee '758 at ¶ 27 In the exemplary embodiment, control processor 210 uses WAN transceiver 201 to communicate over a wide area network. For example, WAN transceiver 201 may be a GSM/GPRS/EDGE transceiver, a CDMA2000/1xEV-DO transceiver, or an IEEE-802.16x transceiver that communicates with base station 120 of a wide-area network. Control processor 210 may use WLAN transceiver 202 to communicate in a wireless local area network (WLAN) environment, such as an office WLAN that may have a coverage area or range of several hundred feet. By way of example, WLAN transceiver 202 may be an IEEE-802.11x transceiver. Control processor 210 may use PAN transceiver 203 to communicate in a personal area network (PAN) environment, such as a Bluetooth or IEEE-802.15.3 communication link that may have a coverage area or range around 10-20 meters. Tee '758 at ¶ 28 In an alternate embodiment, mobile terminal 110 may communicate with BS 120 via a first air interface (or wireless interface) and with an external device that has a display screen via a second air interface (or wireless interface). Thus, mobile terminal 110 may comprise only two transceivers. Advantageously, one or more of transceivers 201-203 may be based on software-defined radio (SDR) technology and therefore may be capable of communicating according to more than one wireless interface standard. Tee '758 at ¶ 33 Control processor 210 executes video/multimedia application program 290 in order to display video data on display 245. Control processor 210 executes video conversion program 270 in order to re-format (if necessary) the video data downloaded from server 150 through the one wireless interface (e.g., WAN transceiver 201) to a suitable format for re-transmission via another wireless interface (e.g., WLAN transceiver 202 or PAN transceiver 203). Additionally, video/multimedia application program 290 may retrieve video/multimedia data from video/multimedia file 280 and transmit a video stream to a remote device via a wireless interface. Advantageously, the wireless interface may have more than one

'590 Patent Claim Limitation	Tee '758 Exemplary Disclosure
	connection at the same time. For example, PAN transceiver 203 may transmit video to television 131 while simultaneously communicating with wireless keyboard 240. Tee '758 at ¶ 36 Under control of display select program 260, control processor 210 compares the parameters in remote display parameters file 262 to the parameters in local display parameters file 261 and selects the display best suited to video/multimedia application program 290. If the display of the external device is selected, control processor 210 transfers the video/multimedia data to the appropriate one of transceivers 202 and 203. Control processor 210 may prompt the operator of mobile terminal 110 for permission to transmit video/multimedia data to the remote display device. Control processor 210 may also continue to send video/multimedia data to display 245 for simultaneous display. In an alternate embodiment, it may be assumed that the remote display is better than display 245. In such an embodiment, control processor 210 may select the remote display (with or without operator permission) without comparing parameters associated with display 245 and the remote display. Tee '758 at ¶ 37 FIG. 3 depicts flow diagram 300, which illustrates the operation of exemplary mobile terminal 110 and a remote display device according to one embodiment of the disclosure. Initially, mobile terminal 110 accesses base station 120 via an air interface (e.g., transceiver 201 or 202) and initiates a video/multimedia download from server 150 (process step 305). Alternatively, mobile terminal 110 may play back video/multimedia data stored in video/multimedia file 280. At some point, mobile terminal 110 detects the presence of a remote display device (e.g., television 131) via another air interface (e.g., transceiver 202 or 203) and establishes a wireless link with the remote display device (process step 310), with the authorization of the mobile terminal user. Tee '758 at ¶ 38 Mobile terminal 110 then requests the capabilities of the remote display device and compares the capabilities of the remote display device and local display 245 (process step 315). Mobile terminal 110 may prompt the operator to select the remote display device (process step 320). Assuming the remote display device is selected, mobile terminal 110 then forwards (or relays or re-transmits) the video stream from base station 120 (or video/multimedia file 280) to the remote display device (process step 325). Optionally, mobile terminal 110 may wirelessly communicate with a remote user input device, such as keyboard 133 process step 330). Optionally, if video/multimedia application program 290 is a video conferencing application, mobile terminal 110 receives via the short-range air interface video/multimedia data from a remote video camera and relays the camera video data to base station 120 (process step 335).

'590 Patent Claim Limitation	Tee '758 Exemplary Disclosure
	Tee '758 at claim 1 1. A mobile terminal comprising: a local display capable of displaying multimedia data; a controller capable of transmitting the multimedia data to the local display; and a first transceiver capable of communicating with a remote display device, wherein the controller is capable of comparing display parameter information associated with the remote display device to display parameter information associated with the local display and, in response to the comparison, transmitting the multimedia data to the remote display device via the first transceiver. Tee '758 at claim 6 6. The mobile terminal as set forth in claim 4, wherein the controller is capable of prompting an operator of the mobile terminal for permission to transmit the multimedia data to the remote display device via the first transceiver. Tee '758 at claims 12–14 12. The mobile terminal as set forth in claim 11, wherein the controller is capable of communicating with a remote user input device via the first transceiver. 13. The mobile terminal as set forth in claim 12, wherein the remote user input device comprises a wireless keyboard. 14. The mobile terminal as set forth in claim 12, wherein the controller is capable of prompting an operator of the mobile terminal for permission to transmit the multimedia data to the remote display device via the first transceiver. To the extent Maxell contends Tee '758 does not disclose this limitation, a person of ordinary skill in the art would have readily arrived at this limitation by combining or modifying it in view of their general knowledge and/or the prior art references disclosed in the corresponding section of Samsung's Invalidity Contentions.
[5g] wherein the controller controls assignment of connection for each of the first and second radio communication circuits in response to receiving an indication from a user such that when an	Tee '758 discloses “wherein the controller controls assignment of connection for each of the first and second radio communication circuits in response to receiving an indication from a user such that when an indication from the user indicates to use the first radio communication circuit, the controller assigns a connection to the first radio communication circuit for receiving the video information or transmitting the information by radio.” For example:

'590 Patent Claim Limitation	Tee '758 Exemplary Disclosure
indication from the user indicates to use the first radio communication circuit, the controller assigns a connection to the first radio communication circuit for receiving the video information or transmitting the information by radio,	Tee '758 at ¶ 16 In some instances, the determination of whether the remote device has a better display may depend on the requirements of the video application executed by the mobile terminal. For many applications, it may be assumed that displays that are larger and have higher resolutions are better displays. The mobile terminal user may also make the decision as to which display to use. Tee '758 at ¶ 25 FIG. 2 illustrates exemplary mobile terminal 110 in greater detail according to an exemplary embodiment of the disclosure. Mobile terminal 110 comprises wide-area network (WAN) transceiver (X-CVR) 201, wireless local area network (WLAN) transceiver (X-CVR) 202, and personal area network (PAN) transceiver (X-CVR) 203. In an embodiment, only one of WLAN transceiver 202 and PAN transceiver 203 may be employed. Mobile terminal 110 also comprises control processor 210, memory 215, speaker 225, microphone 230, input/output interface (I/O IF) 235, keypad 240 and display 245. Memory 215 stores basic operating system (OS) program 250, display select program 260, video conversion program 270, video/multimedia file 280, and one or more video application programs 290. Display select program 260 comprises local display parameters file 261 and remote display parameters file 262. Tee '758 at ¶ 26 Control processor 210 and memory 215 function as a controller that controls the overall operation of mobile terminal 110. Control processor 210 executes basic OS program 250 in order to control, among other things, transceivers 201, 202 and 203. Control processor 210 receives operator inputs from keypad 240 or another user input device (not shown) and displays data on display 245. If mobile terminal 110 is, for example, a cell phone, control processor 210 can receive a voice signal from microphone 230 and can send voice signals to speaker 225. I/O interface 235 allows control processor 210 to be coupled to, and communicate with, another device, including, for example, a docking station, a data cord, an operator input device, or the like. Tee '758 at ¶ 27 In the exemplary embodiment, control processor 210 uses WAN transceiver 201 to communicate over a wide area network. For example, WAN transceiver 201 may be a GSM/GPRS/EDGE transceiver, a CDMA2000/1xEV-DO transceiver, or an IEEE-802.16x transceiver that communicates with base station 120 of a wide-area network. Control processor 210 may use WLAN transceiver 202 to communicate in a wireless local area network (WLAN) environment, such as an office WLAN that may have a coverage area or range of several hundred feet. By way of example, WLAN transceiver 202 may be an IEEE-

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	802.11x transceiver. Control processor 210 may use PAN transceiver 203 to communicate in a personal area network (PAN) environment, such as a Bluetooth or IEEE-802.15.3 communication link that may have a coverage area or range around 10-20 meters. Tee '758 at ¶ 28 In an alternate embodiment, mobile terminal 110 may communicate with BS 120 via a first air interface (or wireless interface) and with an external device that has a display screen via a second air interface (or wireless interface). Thus, mobile terminal 110 may comprise only two transceivers. Advantageously, one or more of transceivers 201-203 may be based on software-defined radio (SDR) technology and therefore may be capable of communicating according to more than one wireless interface standard. Tee '758 at ¶ 29 Additionally, depending on the distances involved, mobile terminal 110 may receive an incoming video and/or multimedia stream from any one of WAN transceiver 201, WLAN transceiver 202, and PAN transceiver 203 and may relay the video and/or multimedia stream to an external device using, for example, WLAN transceiver 202 or PAN transceiver 203. Essentially, this air interface functions similarly to I/O interface 235, but over the wireless link. Tee '758 at ¶ 30 In one example, mobile terminal 201 may receive a video stream from BS 120 via WAN transceiver 201 and may relay the video stream over a short distance to a remote display device via WLAN transceiver 202 or PAN transceiver 203. This may occur when mobile terminal 201 communicates with BS 120 in a cellular network and the remote display communicates with mobile terminal 110 using, for example, an IEEE-802.11x transceiver (i.e., communicates with WLAN transceiver 202) or a Bluetooth or IEEE-802.15.3x transceiver (i.e., communicates with PAN transceiver 203). Tee '758 at ¶ 34 Control processor 210 executes display select program 260 in order to determine whether the quality of the display of the remote device (e.g., television 131) is superior to the quality of display 245 in mobile terminal 110. Control processor 210 may execute display select program 260 automatically in response to detection of wireless signals transmitted by the remote device. For example, PAN transceiver 203 may detect a pilot (or similar beacon) signal transmitted by the wireless transceiver associated with television 131 and may send a notification signal to control processor 210. The pilot/beacon signal may be a signal broadcast by a device, such as television 131, for example, to provide notification of the presence and capabilities of the device and the services provided by the device. Upon receipt of the notification signal,

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	control processor 210 may launch display select application program 260. In another embodiment, PAN transceiver 203 broadcasts a signal to discover and interrogate neighboring nodes that may have the ability to display the information. As an example, the wireless transceiver associated with television 131 may acquire the transmission from PAN transceiver 203 and may transmit a signal in response to the inquiry, using the protocol supported by the air interface standard. Alternatively, control processor 210 may execute display select program 260 in response to manual inputs entered by the operator of mobile terminal 110. Tee '758 at ¶ 36 Under control of display select program 260, control processor 210 compares the parameters in remote display parameters file 262 to the parameters in local display parameters file 261 and selects the display best suited to video/multimedia application program 290. If the display of the external device is selected, control processor 210 transfers the video/multimedia data to the appropriate one of transceivers 202 and 203. Control processor 210 may prompt the operator of mobile terminal 110 for permission to transmit video/multimedia data to the remote display device. Control processor 210 may also continue to send video/multimedia data to display 245 for simultaneous display. In an alternate embodiment, it may be assumed that the remote display is better than display 245. In such an embodiment, control processor 210 may select the remote display (with or without operator permission) without comparing parameters associated with display 245 and the remote display. Tee '758 at ¶ 37 FIG. 3 depicts flow diagram 300, which illustrates the operation of exemplary mobile terminal 110 and a remote display device according to one embodiment of the disclosure. Initially, mobile terminal 110 accesses base station 120 via an air interface (e.g., transceiver 201 or 202) and initiates a video/multimedia download from server 150 (process step 305). Alternatively, mobile terminal 110 may play back video/multimedia data stored in video/multimedia file 280. At some point, mobile terminal 110 detects the presence of a remote display device (e.g., television 131) via another air interface (e.g., transceiver 202 or 203) and establishes a wireless link with the remote display device (process step 310), with the authorization of the mobile terminal user. Tee '758 at ¶ 38 Mobile terminal 110 then requests the capabilities of the remote display device and compares the capabilities of the remote display device and local display 245 (process step 315). Mobile terminal 110 may prompt the operator to select the remote display device (process step 320). Assuming the remote display device is selected, mobile terminal 110 then forwards (or relays or re-transmits) the video stream

'590 Patent Claim Limitation	Tee '758 Exemplary Disclosure
	from base station 120 (or video/multimedia file 280) to the remote display device (process step 325). Optionally, mobile terminal 110 may wirelessly communicate with a remote user input device, such as keyboard 133 process step 330). Optionally, if video/multimedia application program 290 is a video conferencing application, mobile terminal 110 receives via the short-range air interface video/multimedia data from a remote video camera and relays the camera video data to base station 120 (process step 335). Tee '758 at claim 6 6. The mobile terminal as set forth in claim 4, wherein the controller is capable of prompting an operator of the mobile terminal for permission to transmit the multimedia data to the remote display device via the first transceiver. Tee '758 at claims 12–14 12. The mobile terminal as set forth in claim 11, wherein the controller is capable of communicating with a remote user input device via the first transceiver. 13. The mobile terminal as set forth in claim 12, wherein the remote user input device comprises a wireless keyboard. 14. The mobile terminal as set forth in claim 12, wherein the controller is capable of prompting an operator of the mobile terminal for permission to transmit the multimedia data to the remote display device via the first transceiver. To the extent Maxell contends Tee '758 does not disclose this limitation, a person of ordinary skill in the art would have readily arrived at this limitation by combining or modifying it in view of their general knowledge and/or the prior art references disclosed in the corresponding section of Samsung's Invalidity Contentions.
[5h] wherein the controller controls each of the first and second radio communication circuits so that the first radio communication circuit receives video information and the second radio communication circuit connects to the internet or the home network simultaneously, and	Tee '758 discloses “wherein the controller controls each of the first and second radio communication circuits so that the first radio communication circuit receives video information and the second radio communication circuit connects to the internet or the home network simultaneously.” For example: Tee '758 at ¶ 18 An exemplary mobile terminal may be used for mobile communications and as a gateway for a short-range wireless network, also called a personal area network (PAN). The mobile terminal may support a variety of mobile applications, including voice, multimedia (i.e., video, graphics, text, and audio downloads), video conferencing, web browsing, file download, VPN and Internet gaming. Advantageously, when the mobile terminal is near a higher quality display (e.g., a TV screen), the mobile

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	terminal relays its video data to the external display device as well as to its internal display. This enables the operator of the mobile terminal to view the information on the higher quality display device, and to share the displayed information with other people at the same location, e.g., in a video conference call, or watching the latest broadcasting and streaming of News or events of common interests. Note that in the latter example, the source of information could be a remote Internet web server instead of a conventional TV broadcasting station. A remote Internet web server does not have the same geographical coverage limit as a conventional TV broadcasting station. In the case of group video conferencing using, for example, a digital camera phone, it would be more practical and ergonomically correct to have the received video data displayed on an external screen, while the phone camera captures and transmits the local user images. Tee '758 at ¶ 25 FIG. 2 illustrates exemplary mobile terminal 110 in greater detail according to an exemplary embodiment of the disclosure. Mobile terminal 110 comprises wide-area network (WAN) transceiver (X-CVR) 201, wireless local area network (WLAN) transceiver (X-CVR) 202, and personal area network (PAN) transceiver (X-CVR) 203. In an embodiment, only one of WLAN transceiver 202 and PAN transceiver 203 may be employed. Mobile terminal 110 also comprises control processor 210, memory 215, speaker 225, microphone 230, input/output interface (I/O IF) 235, keypad 240 and display 245. Memory 215 stores basic operating system (OS) program 250, display select program 260, video conversion program 270, video/multimedia file 280, and one or more video application programs 290. Display select program 260 comprises local display parameters file 261 and remote display parameters file 262. Tee '758 at ¶ 26 Control processor 210 and memory 215 function as a controller that controls the overall operation of mobile terminal 110. Control processor 210 executes basic OS program 250 in order to control, among other things, transceivers 201, 202 and 203. Control processor 210 receives operator inputs from keypad 240 or another user input device (not shown) and displays data on display 245. If mobile terminal 110 is, for example, a cell phone, control processor 210 can receive a voice signal from microphone 230 and can send voice signals to speaker 225. I/O interface 235 allows control processor 210 to be coupled to, and communicate with, another device, including, for example, a docking station, a data cord, an operator input device, or the like. Tee '758 at ¶ 27 In the exemplary embodiment, control processor 210 uses WAN transceiver 201 to communicate over a wide area network. For example, WAN transceiver 201 may be a GSM/GPRS/EDGE transceiver, a

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	CDMA2000/1xEV-DO transceiver, or an IEEE-802.16x transceiver that communicates with base station 120 of a wide-area network. Control processor 210 may use WLAN transceiver 202 to communicate in a wireless local area network (WLAN) environment, such as an office WLAN that may have a coverage area or range of several hundred feet. By way of example, WLAN transceiver 202 may be an IEEE-802.11x transceiver. Control processor 210 may use PAN transceiver 203 to communicate in a personal area network (PAN) environment, such as a Bluetooth or IEEE-802.15.3 communication link that may have a coverage area or range around 10-20 meters. Tee '758 at ¶ 28 In an alternate embodiment, mobile terminal 110 may communicate with BS 120 via a first air interface (or wireless interface) and with an external device that has a display screen via a second air interface (or wireless interface). Thus, mobile terminal 110 may comprise only two transceivers. Advantageously, one or more of transceivers 201-203 may be based on software-defined radio (SDR) technology and therefore may be capable of communicating according to more than one wireless interface standard. Tee '758 at ¶ 29 Additionally, depending on the distances involved, mobile terminal 110 may receive an incoming video and/or multimedia stream from any one of WAN transceiver 201, WLAN transceiver 202, and PAN transceiver 203 and may relay the video and/or multimedia stream to an external device using, for example, WLAN transceiver 202 or PAN transceiver 203. Essentially, this air interface functions similarly to I/O interface 235, but over the wireless link. Tee '758 at ¶ 30 In one example, mobile terminal 201 may receive a video stream from BS 120 via WAN transceiver 201 and may relay the video stream over a short distance to a remote display device via WLAN transceiver 202 or PAN transceiver 203. This may occur when mobile terminal 201 communicates with BS 120 in a cellular network and the remote display communicates with mobile terminal 110 using, for example, an IEEE-802.11x transceiver (i.e., communicates with WLAN transceiver 202) or a Bluetooth or IEEE-802.15.3x transceiver (i.e., communicates with PAN transceiver 203). Tee '758 at ¶ 33 Control processor 210 executes video/multimedia application program 290 in order to display video data on display 245. Control processor 210 executes video conversion program 270 in order to re-format (if necessary) the video data downloaded from server 150 through the one wireless interface (e.g., WAN transceiver 201) to a suitable format for re-transmission via another wireless interface (e.g., WLAN

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	transceiver 202 or PAN transceiver 203). Additionally, video/multimedia application program 290 may retrieve video/multimedia data from video/multimedia file 280 and transmit a video stream to a remote device via a wireless interface. Advantageously, the wireless interface may have more than one connection at the same time. For example, PAN transceiver 203 may transmit video to television 131 while simultaneously communicating with wireless keyboard 240. Tee '758 at ¶ 36 Under control of display select program 260, control processor 210 compares the parameters in remote display parameters file 262 to the parameters in local display parameters file 261 and selects the display best suited to video/multimedia application program 290. If the display of the external device is selected, control processor 210 transfers the video/multimedia data to the appropriate one of transceivers 202 and 203. Control processor 210 may prompt the operator of mobile terminal 110 for permission to transmit video/multimedia data to the remote display device. Control processor 210 may also continue to send video/multimedia data to display 245 for simultaneous display. In an alternate embodiment, it may be assumed that the remote display is better than display 245. In such an embodiment, control processor 210 may select the remote display (with or without operator permission) without comparing parameters associated with display 245 and the remote display. Tee '758 at ¶ 37 FIG. 3 depicts flow diagram 300, which illustrates the operation of exemplary mobile terminal 110 and a remote display device according to one embodiment of the disclosure. Initially, mobile terminal 110 accesses base station 120 via an air interface (e.g., transceiver 201 or 202) and initiates a video/multimedia download from server 150 (process step 305). Alternatively, mobile terminal 110 may play back video/multimedia data stored in video/multimedia file 280. At some point, mobile terminal 110 detects the presence of a remote display device (e.g., television 131) via another air interface (e.g., transceiver 202 or 203) and establishes a wireless link with the remote display device (process step 310), with the authorization of the mobile terminal user. Tee '758 at ¶ 38 Mobile terminal 110 then requests the capabilities of the remote display device and compares the capabilities of the remote display device and local display 245 (process step 315). Mobile terminal 110 may prompt the operator to select the remote display device (process step 320). Assuming the remote display device is selected, mobile terminal 110 then forwards (or relays or re-transmits) the video stream from base station 120 (or video/multimedia file 280) to the remote display device (process step 325). Optionally, mobile terminal 110 may wirelessly communicate with a remote user input device, such as

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	keyboard 133 process step 330). Optionally, if video/multimedia application program 290 is a video conferencing application, mobile terminal 110 receives via the short-range air interface video/multimedia data from a remote video camera and relays the camera video data to base station 120 (process step 335). To the extent Maxell contends Tee '758 does not disclose this limitation, a person of ordinary skill in the art would have readily arrived at this limitation by combining or modifying it in view of their general knowledge and/or the prior art references disclosed in the corresponding section of Samsung's Invalidity Contentions.
[5i] wherein the second or third radio communication circuits receive a signal from the internet indicating that an update for an operating system of the display apparatus is available, and the display apparatus executes an update process such that an updated operating system of the display apparatus is stored in the display apparatus after execution of the update process.	Tee '758 discloses "wherein the second or third radio communication circuits receive a signal from the internet indicating that an update for an operating system of the display apparatus is available, and the display apparatus executes an update process such that an updated operating system of the display apparatus is stored in the display apparatus after execution of the update process." For example: Tee '758 at ¶ 25 FIG. 2 illustrates exemplary mobile terminal 110 in greater detail according to an exemplary embodiment of the disclosure. Mobile terminal 110 comprises wide-area network (WAN) transceiver (X-CVR) 201, wireless local area network (WLAN) transceiver (X-CVR) 202, and personal area network (PAN) transceiver (X-CVR) 203. In an embodiment, only one of WLAN transceiver 202 and PAN transceiver 203 may be employed. Mobile terminal 110 also comprises control processor 210, memory 215, speaker 225, microphone 230, input/output interface (I/O IF) 235, keypad 240 and display 245. Memory 215 stores basic operating system (OS) program 250, display select program 260, video conversion program 270, video/multimedia file 280, and one or more video application programs 290. Display select program 260 comprises local display parameters file 261 and remote display parameters file 262. To the extent Maxell contends Tee '758 does not disclose this limitation, a person of ordinary skill in the art would have readily arrived at this limitation by combining or modifying it in view of their general knowledge and/or the prior art references disclosed in the corresponding section of Samsung's Invalidity Contentions.
[9pre] 9. A method for video processing, comprising:	To the extent the preamble is limiting, Tee '758 discloses "[a] method for video processing." For example:

Tee '758 at Figure 1

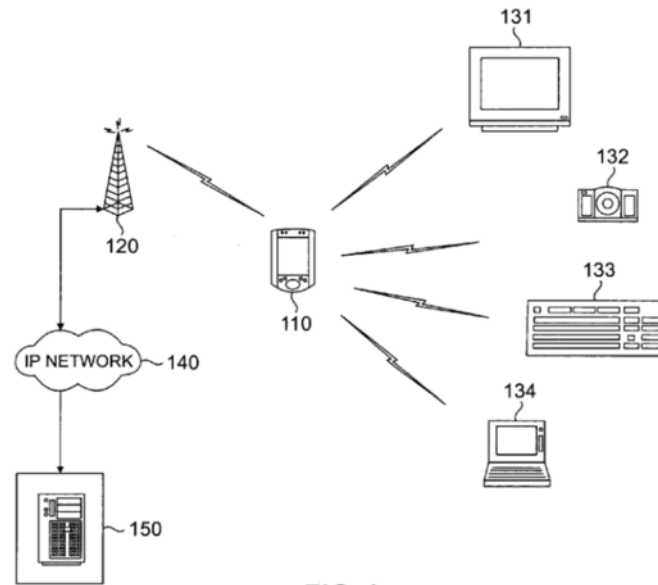


FIG. 1

Tee '758 at ¶ 6

A mobile terminal is provided. According to an advantageous embodiment, the mobile terminal comprises a local display capable of displaying multimedia data, a controller capable of transmitting the multimedia data to the local display, and a first transceiver capable of communicating with a remote display device. The controller is capable of comparing display parameter information associated with the external display device to display parameter information associated with the local display and, in response to the comparison, transmitting the multimedia data to the external display device via the first transceiver.

Tee '758 at ¶ 15

The mobile terminal disclosed herein overcomes the limitations of a small display screen by receiving video data (i.e., display data) over a first wireless interface and transmitting (or relaying) the video data over a second wireless interface to an external (or remote) device having a better (bigger) display, such as a television, a computer monitor, a laptop computer, the dashboard display of a car, a video projection device, and the like. For the purposes of this disclosure and the claims herein, the video data, which may also be referred to as multimedia data, is defined to include not only the video data itself, but may also include the audio data, text data, and control data that may accompany the video data.

Tee '758 at ¶ 22

According to an advantageous embodiment, mobile terminal 110 may relay a video stream to a remote device in order to allow the operator of mobile terminal 110 to view the video on a better display. By way of example, mobile terminal 110 may be receiving streaming video data from server 150 via IP network 140 and base station 120. The streaming video is displayed on the display of mobile terminal 110. At some point, mobile terminal 110 may be located near to television 131 and establish a wireless communication link via the short-range wireless protocol (e.g., IEEE-802.11x/802.15.3x) with television 131. Mobile terminal 110 may then request information from television 131 regarding the capabilities of the display screen of television 131.

Tee '758 at ¶ 23

Assuming television 131 is a more desirable display than mobile terminal 110, mobile terminal 110 may relay the streaming video signal to television 131 via the short-range (or PAN) wireless communication link. This may be done automatically, or mobile terminal 110 may prompt the operator of mobile terminal 110 to select television 131 before relaying the video signal. Similarly, mobile terminal 110 may transmit a video signal over the short-range PAN connection to computer 134, projector 132, or any other remote device that has a display screen.

Tee '758 at ¶ 24

It is not required that mobile terminal 110 receive an incoming video stream from base station 120. In an alternate scenario, mobile terminal 110 may execute a video application and/or a multimedia application that plays back a video file and/or multimedia file stored in memory in mobile terminal 110. Mobile terminal 110 then transmits the video (or multimedia) stream from the stored file to television 131 (or another device) for viewing.

Tee '758 at ¶ 29

Additionally, depending on the distances involved, mobile terminal 110 may receive an incoming video and/or multimedia stream from any one of WAN transceiver 201, WLAN transceiver 202, and PAN transceiver 203 and may relay the video and/or multimedia stream to an external device using, for example, WLAN transceiver 202 or PAN transceiver 203. Essentially, this air interface functions similarly to I/O interface 235, but over the wireless link.

Tee '758 at ¶ 30

In one example, mobile terminal 201 may receive a video stream from BS 120 via WAN transceiver 201 and may relay the video stream over a short distance to a remote display device via WLAN transceiver 202 or PAN transceiver 203. This may occur when mobile terminal 201 communicates with BS 120 in a

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	cellular network and the remote display communicates with mobile terminal 110 using, for example, an IEEE-802.11x transceiver (i.e., communicates with WLAN transceiver 202) or a Bluetooth or IEEE-802.15.3x transceiver (i.e., communicates with PAN transceiver 203). Tee '758 at ¶ 31 In another example, mobile terminal 201 may receive a video stream from a base station or access point of a home or office WLAN via WLAN transceiver 202 and may relay the video stream over a short distance to a remote display device via PAN transceiver 203. This may occur when the base station or access point in the office WLAN communicates with mobile terminal 110 using, for example, an IEEE-802.11x transceiver and the remote display communicates with mobile terminal 110 using, for example, a high data rate Bluetooth transceiver that is capable of supporting the required video data throughput. Tee '758 at ¶ 32 In a third example, mobile terminal 201 may receive a video stream from a base station, an access point, or a video source device via PAN transceiver 203 and may relay the video stream over a short distance to a remote display device via WLAN transceiver 202. This may occur if the video source with wireless capability transmits a video stream to mobile terminal 110 using, for example, a high data rate Bluetooth transceiver and the remote display communicates with mobile terminal 110 using, for example, an IEEE-802.11x transceiver. Tee '758 at ¶ 33 Control processor 210 executes video/multimedia application program 290 in order to display video data on display 245. Control processor 210 executes video conversion program 270 in order to re-format (if necessary) the video data downloaded from server 150 through the one wireless interface (e.g., WAN transceiver 201) to a suitable format for re-transmission via another wireless interface (e.g., WLAN transceiver 202 or PAN transceiver 203). Additionally, video/multimedia application program 290 may retrieve video/multimedia data from video/multimedia file 280 and transmit a video stream to a remote device via a wireless interface. Advantageously, the wireless interface may have more than one connection at the same time. For example, PAN transceiver 203 may transmit video to television 131 while simultaneously communicating with wireless keyboard 240. To the extent Maxell contends Tee '758 does not disclose this limitation, a person of ordinary skill in the art would have readily arrived at this limitation by combining or modifying it in view of their general knowledge and/or the prior art references disclosed in the corresponding section of Samsung's Invalidity Contentions.

'590 Patent Claim Limitation	Tee '758 Exemplary Disclosure
[9a] receiving video information and still picture information via an optical system by an imaging circuit of a video processing apparatus;	Tee '758 discloses “receiving video information and still picture information via an optical system by an imaging circuit of a video processing apparatus.” For example: Tee '758 at ¶ 18 An exemplary mobile terminal may be used for mobile communications and as a gateway for a short-range wireless network, also called a personal area network (PAN). The mobile terminal may support a variety of mobile applications, including voice, multimedia (i.e., video, graphics, text, and audio downloads), video conferencing, web browsing, file download, VPN and Internet gaming. Advantageously, when the mobile terminal is near a higher quality display (e.g., a TV screen), the mobile terminal relays its video data to the external display device as well as to its internal display. This enables the operator of the mobile terminal to view the information on the higher quality display device, and to share the displayed information with other people at the same location, e.g., in a video conference call, or watching the latest broadcasting and streaming of News or events of common interests. Note that in the latter example, the source of information could be a remote Internet web server instead of a conventional TV broadcasting station. A remote Internet web server does not have the same geographical coverage limit as a conventional TV broadcasting station. In the case of group video conferencing using, for example, a digital camera phone, it would be more practical and ergonomically correct to have the received video data displayed on an external screen, while the phone camera captures and transmits the local user images. Tee '758 at ¶ 35 Under control of display select program 260, control processor 210 is capable of querying the remote device (e.g., television 131) to determine the quality of the display associated with the remote device, for example, by requesting the remote device to transmit parameters or attributes describing the capabilities of the remote device. If the attributes of the external display device are available, the data can be formatted accordingly before transmission through the second interface to the display device. However, it is not always necessary for the remote device to have the capability to respond to such an inquiry. Any standard protocol that is supported by the air interface would be sufficient for the mobile terminal to transmit the video data, and the similar air interface of the display device to receive, demodulate and decode the data. Nevertheless, it is assumed that the external display device has the capability to decode the received data and convert it to a signal/pixel format that is supported by the display mechanism, e.g., a MPEG4 decoder, and/or a Digital-to-Analog converter. Control processor 210 receives the display parameters associated with the remote device and stores these parameters in remote display parameters file 262. The parameters associated with display 245 are stored in local display parameters file 261. The

'590 Patent Claim Limitation	Tee '758 Exemplary Disclosure
	parameter data may include, for example, display size, display type (CRT, LED, etc.), pixel size, refresh rate, and the like. Tee '758 at ¶ 38 Mobile terminal 110 then requests the capabilities of the remote display device and compares the capabilities of the remote display device and local display 245 (process step 315). Mobile terminal 110 may prompt the operator to select the remote display device (process step 320). Assuming the remote display device is selected, mobile terminal 110 then forwards (or relays or re-transmits) the video stream from base station 120 (or video/multimedia file 280) to the remote display device (process step 325). Optionally, mobile terminal 110 may wirelessly communicate with a remote user input device, such as keyboard 133 process step 330). Optionally, if video/multimedia application program 290 is a video conferencing application, mobile terminal 110 receives via the short-range air interface video/multimedia data from a remote video camera and relays the camera video data to base station 120 (process step 335). To the extent Maxell contends Tee '758 does not disclose this limitation, a person of ordinary skill in the art would have readily arrived at this limitation by combining or modifying it in view of their general knowledge and/or the prior art references disclosed in the corresponding section of Samsung's Invalidity Contentions.
[9b] compressing the still picture information using a first type of compression method and the video information using a second type of compression method;	Tee '758 discloses “compressing the still picture information using a first type of compression method and the video information using a second type of compression method.” For example: Tee '758 at ¶ 18 An exemplary mobile terminal may be used for mobile communications and as a gateway for a short-range wireless network, also called a personal area network (PAN). The mobile terminal may support a variety of mobile applications, including voice, multimedia (i.e., video, graphics, text, and audio downloads), video conferencing, web browsing, file download, VPN and Internet gaming. Advantageously, when the mobile terminal is near a higher quality display (e.g., a TV screen), the mobile terminal relays its video data to the external display device as well as to its internal display. This enables the operator of the mobile terminal to view the information on the higher quality display device, and to share the displayed information with other people at the same location, e.g., in a video conference call, or watching the latest broadcasting and streaming of News or events of common interests. Note that in the latter example, the source of information could be a remote Internet web server instead of a conventional TV broadcasting station. A remote Internet web server does not have the same geographical coverage limit as a conventional TV broadcasting station. In the case of group video conferencing using, for

'590 Patent Claim Limitation	Tee '758 Exemplary Disclosure
	example, a digital camera phone, it would be more practical and ergonomically correct to have the received video data displayed on an external screen, while the phone camera captures and transmits the local user images. Tee '758 at ¶ 35 Under control of display select program 260, control processor 210 is capable of querying the remote device (e.g., television 131) to determine the quality of the display associated with the remote device, for example, by requesting the remote device to transmit parameters or attributes describing the capabilities of the remote device. If the attributes of the external display device are available, the data can be formatted accordingly before transmission through the second interface to the display device. However, it is not always necessary for the remote device to have the capability to respond to such an inquiry. Any standard protocol that is supported by the air interface would be sufficient for the mobile terminal to transmit the video data, and the similar air interface of the display device to receive, demodulate and decode the data. Nevertheless, it is assumed that the external display device has the capability to decode the received data and convert it to a signal/pixel format that is supported by the display mechanism, e.g., a MPEG4 decoder, and/or a Digital-to-Analog converter. Control processor 210 receives the display parameters associated with the remote device and stores these parameters in remote display parameters file 262. The parameters associated with display 245 are stored in local display parameters file 261. The parameter data may include, for example, display size, display type (CRT, LED, etc.), pixel size, refresh rate, and the like. Tee '758 at ¶ 38 Mobile terminal 110 then requests the capabilities of the remote display device and compares the capabilities of the remote display device and local display 245 (process step 315). Mobile terminal 110 may prompt the operator to select the remote display device (process step 320). Assuming the remote display device is selected, mobile terminal 110 then forwards (or relays or re-transmits) the video stream from base station 120 (or video/multimedia file 280) to the remote display device (process step 325). Optionally, mobile terminal 110 may wirelessly communicate with a remote user input device, such as keyboard 133 process step 330). Optionally, if video/multimedia application program 290 is a video conferencing application, mobile terminal 110 receives via the short-range air interface video/multimedia data from a remote video camera and relays the camera video data to base station 120 (process step 335). To the extent Maxell contends Tee '758 does not disclose this limitation, a person of ordinary skill in the art would have readily arrived at this limitation by combining or modifying it in view of their general

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	knowledge and/or the prior art references disclosed in the corresponding section of Samsung's Invalidity Contentions.
[9c] accumulating video information received by the imaging circuit after the video information is compressed by the compression circuit;	Tee '758 discloses "accumulating video information received by the imaging circuit after the video information is compressed by the compression circuit." For example: Tee '758 at ¶ 25 FIG. 2 illustrates exemplary mobile terminal 110 in greater detail according to an exemplary embodiment of the disclosure. Mobile terminal 110 comprises wide-area network (WAN) transceiver (X-CVR) 201, wireless local area network (WLAN) transceiver (X-CVR) 202, and personal area network (PAN) transceiver (X-CVR) 203. In an embodiment, only one of WLAN transceiver 202 and PAN transceiver 203 may be employed. Mobile terminal 110 also comprises control processor 210, memory 215, speaker 225, microphone 230, input/output interface (I/O IF) 235, keypad 240 and display 245. Memory 215 stores basic operating system (OS) program 250, display select program 260, video conversion program 270, video/multimedia file 280, and one or more video application programs 290. Display select program 260 comprises local display parameters file 261 and remote display parameters file 262. Tee '758 at ¶ 35 Under control of display select program 260, control processor 210 is capable of querying the remote device (e.g., television 131) to determine the quality of the display associated with the remote device, for example, by requesting the remote device to transmit parameters or attributes describing the capabilities of the remote device. If the attributes of the external display device are available, the data can be formatted accordingly before transmission through the second interface to the display device. However, it is not always necessary for the remote device to have the capability to respond to such an inquiry. Any standard protocol that is supported by the air interface would be sufficient for the mobile terminal to transmit the video data, and the similar air interface of the display device to receive, demodulate and decode the data. Nevertheless, it is assumed that the external display device has the capability to decode the received data and convert it to a signal/pixel format that is supported by the display mechanism, e.g., a MPEG4 decoder, and/or a Digital-to-Analog converter. Control processor 210 receives the display parameters associated with the remote device and stores these parameters in remote display parameters file 262. The parameters associated with display 245 are stored in local display parameters file 261. The parameter data may include, for example, display size, display type (CRT, LED, etc.), pixel size, refresh rate, and the like.

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	Tee '758 at ¶ 38 Mobile terminal 110 then requests the capabilities of the remote display device and compares the capabilities of the remote display device and local display 245 (process step 315). Mobile terminal 110 may prompt the operator to select the remote display device (process step 320). Assuming the remote display device is selected, mobile terminal 110 then forwards (or relays or re-transmits) the video stream from base station 120 (or video/multimedia file 280) to the remote display device (process step 325). Optionally, mobile terminal 110 may wirelessly communicate with a remote user input device, such as keyboard 133 process step 330). Optionally, if video/multimedia application program 290 is a video conferencing application, mobile terminal 110 receives via the short-range air interface video/multimedia data from a remote video camera and relays the camera video data to base station 120 (process step 335). To the extent Maxell contends Tee '758 does not disclose this limitation, a person of ordinary skill in the art would have readily arrived at this limitation by combining or modifying it in view of their general knowledge and/or the prior art references disclosed in the corresponding section of Samsung's Invalidity Contentions.
[9d] implementing a first transmission scheme having a first modulation scheme and a first transmission frequency band;	Tee '758 discloses "implementing a first transmission scheme having a first modulation scheme and a first transmission frequency band." For example:

Tee '758 at Figure 1

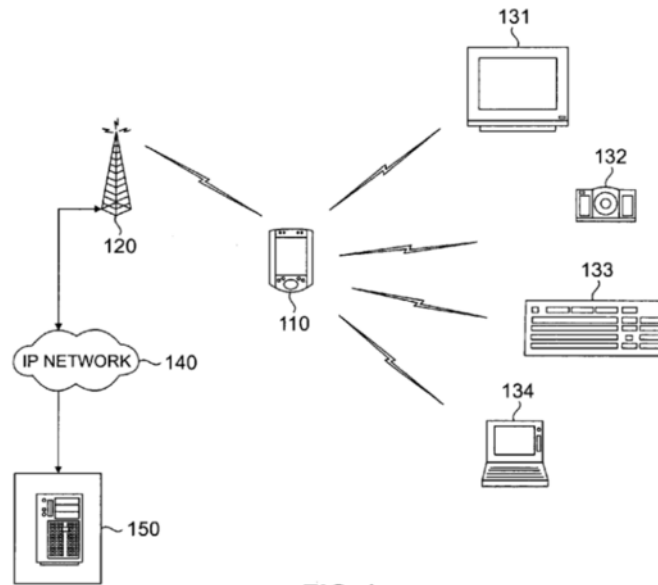


FIG. 1

Tee '758 at Figure 2

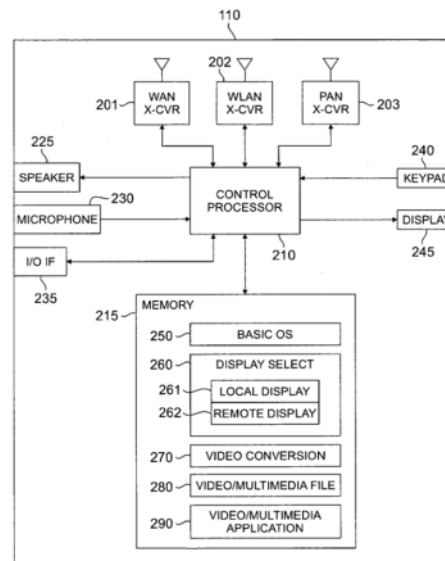


FIG. 2

Tee '758 at ¶ 6

A mobile terminal is provided. According to an advantageous embodiment, the mobile terminal comprises a local display capable of displaying multimedia data, a controller capable of transmitting the multimedia data to the local display, and a first transceiver capable of communicating with a remote display device. The controller is capable of comparing display parameter information associated with the external display device to display parameter information associated with the local display and, in response to the comparison, transmitting the multimedia data to the external display device via the first transceiver.

Tee '758 at ¶ 17

Generally, the first wireless interface supports mobile wireless communications, including, but not limited to IS-2000, 1xEV-DO, 1xEV-DV, GSM/GPRS/EDGE, 3GPP UTRAN, HSDPA/HSUPA, 3GPP EUTRAN, TD-CDMA, WiBro, WiMAX, IEEE-802.16x, IEEE-802.20, and IEEE-802.11x (e.g., WiFi) in a hotspot environment. The second wireless interface typically supports shorter range wireless communications, including, but not limited to IEEE-802.15.3x, MB-OFDM, UWB, Wireless USB, IEEE-802.11x (or WiFi), and a Bluetooth standard that supports high throughput applications

Tee '758 at ¶ 18

An exemplary mobile terminal may be used for mobile communications and as a gateway for a short-range wireless network, also called a personal area network (PAN). The mobile terminal may support a variety of mobile applications, including voice, multimedia (i.e., video, graphics, text, and audio downloads), video conferencing, web browsing, file download, VPN and Internet gaming. Advantageously, when the mobile terminal is near a higher quality display (e.g., a TV screen), the mobile terminal relays its video data to the external display device as well as to its internal display. This enables the operator of the mobile terminal to view the information on the higher quality display device, and to share the displayed information with other people at the same location, e.g., in a video conference call, or watching the latest broadcasting and streaming of News or events of common interests. Note that in the latter example, the source of information could be a remote Internet web server instead of a conventional TV broadcasting station. A remote Internet web server does not have the same geographical coverage limit as a conventional TV broadcasting station. In the case of group video conferencing using, for example, a digital camera phone, it would be more practical and ergonomically correct to have the received video data displayed on an external screen, while the phone camera captures and transmits the local user images.

Tee '758 at ¶ 20

'590 Patent Claim Limitation	Tee '758 Exemplary Disclosure
	Mobile terminal 110 is capable of communicating with one or more types of wireless wide-area networks (WANs), including conventional cellular networks and wireless local area networks (WLANs). By way of example, mobile terminal 110 may communicate with base station (BS) 120, which may be associated with a CDMA2000/1xEV-DO/1xEV-DV network, a GSM/GPRS/EDGE network, an IEEE-802.16x network, or the like. In other embodiments, base station 120 may communicate according to such wireless interface standards, or their evolutions, as 1xEV-DO, 1xEV-DV, GSM/GPRS/EDGE, 3GPP UTRAN, HSDPA/HSUPA, 3GPP EUTRAN, TD-CDMA, WiBro, WiMAX, IEEE-802.20, or IEEE-802.11x, among others. Base station 120 provides mobile terminal 110 with access to voice networks, such as the public switched telephone network (PSTN), and to data networks, including, for example, the Internet or proprietary Internet protocol (IP) networks. In the illustrated embodiment, BS 120 provides mobile terminal 110 with access to server 150 via IP network 140. Tee '758 at ¶ 21 Mobile terminal 110 is also capable of communicating with one or more types of external (or remote) devices via a short-range wireless interface standard, such as IEEE-802.11x, ultra-wideband (UWB), IEEE-802.15.3x, MB-OFDM, Wireless USB, or a Bluetooth standard that supports high throughput applications, among others. It is assumed for the purposes of this disclosure that any such remote device comprises a wireless transceiver that can communicate with mobile terminal 110 in order to establish a personal area network (PAN) connection. By way of example, mobile terminal 110 may communicate with television 131 (or computer monitor 131), projector 132, keyboard 133, and laptop (or handheld) personal computer (PC) 134. If the remote device is capable of displaying video (e.g., television 131), it is assumed that the wireless transceiver of the remote device supports a relatively high data rate that is suitable for video applications and/or multimedia applications. Tee '758 at ¶ 22 According to an advantageous embodiment, mobile terminal 110 may relay a video stream to a remote device in order to allow the operator of mobile terminal 110 to view the video on a better display. By way of example, mobile terminal 110 may be receiving streaming video data from server 150 via IP network 140 and base station 120. The streaming video is displayed on the display of mobile terminal 110. At some point, mobile terminal 110 may be located near to television 131 and establish a wireless communication link via the short-range wireless protocol (e.g., IEEE-802.11x/802.15.3x) with television 131. Mobile terminal 110 may then request information from television 131 regarding the capabilities of the display screen of television 131.

Tee '758 at ¶ 24

Advantageously, mobile terminal 110 is also capable of establishing a communication link with keyboard 133 (or another input device such as an electronic notepad) via the short-range PAN connection in order to allow the operator of mobile terminal 110 to use keyboard 133 (or the other input device) in lieu of the keyboard or other control buttons on mobile terminal 110. By way of example, mobile terminal 110 may establish a Bluetooth connection to keyboard 133 in order to allow the operator to use keyboard 133 to control mobile terminal 110. In this scenario, the external keyboard, external display and the mobile terminal are connected in the form of a conventional computer, with air interface 1 connecting the computer (with the MT playing the role of the computing unit) to the Internet, and air interface 2 or 3 connecting the computer to the external keyboard and display. If air interface 2 can support both connections between the MT and keyboard or display simultaneously, it is not necessary to have air interface 3.

Tee '758 at ¶ 25

FIG. 2 illustrates exemplary mobile terminal 110 in greater detail according to an exemplary embodiment of the disclosure. Mobile terminal 110 comprises wide-area network (WAN) transceiver (X-CVR) 201, wireless local area network (WLAN) transceiver (X-CVR) 202, and personal area network (PAN) transceiver (X-CVR) 203. In an embodiment, only one of WLAN transceiver 202 and PAN transceiver 203 may be employed. Mobile terminal 110 also comprises control processor 210, memory 215, speaker 225, microphone 230, input/output interface (I/O IF) 235, keypad 240 and display 245. Memory 215 stores basic operating system (OS) program 250, display select program 260, video conversion program 270, video/multimedia file 280, and one or more video application programs 290. Display select program 260 comprises local display parameters file 261 and remote display parameters file 262.

Tee '758 at ¶ 26

Control processor 210 and memory 215 function as a controller that controls the overall operation of mobile terminal 110. Control processor 210 executes basic OS program 250 in order to control, among other things, transceivers 201, 202 and 203. Control processor 210 receives operator inputs from keypad 240 or another user input device (not shown) and displays data on display 245. If mobile terminal 110 is, for example, a cell phone, control processor 210 can receive a voice signal from microphone 230 and can send voice signals to speaker 225. I/O interface 235 allows control processor 210 to be coupled to, and communicate with, another device, including, for example, a docking station, a data cord, an operator input device, or the like.

Tee '758 at ¶ 27

'590 Patent Claim Limitation	Tee '758 Exemplary Disclosure
	In the exemplary embodiment, control processor 210 uses WAN transceiver 201 to communicate over a wide area network. For example, WAN transceiver 201 may be a GSM/GPRS/EDGE transceiver, a CDMA2000/1xEV-DO transceiver, or an IEEE-802.16x transceiver that communicates with base station 120 of a wide-area network. Control processor 210 may use WLAN transceiver 202 to communicate in a wireless local area network (WLAN) environment, such as an office WLAN that may have a coverage area or range of several hundred feet. By way of example, WLAN transceiver 202 may be an IEEE-802.11x transceiver. Control processor 210 may use PAN transceiver 203 to communicate in a personal area network (PAN) environment, such as a Bluetooth or IEEE-802.15.3 communication link that may have a coverage area or range around 10-20 meters. Tee '758 at ¶ 28 In the illustrated embodiment in FIG. 2, three distinct transceivers are shown. However, this is by way of example only. Tee '758 at ¶ 28 In an alternate embodiment, mobile terminal 110 may communicate with BS 120 via a first air interface (or wireless interface) and with an external device that has a display screen via a second air interface (or wireless interface). Thus, mobile terminal 110 may comprise only two transceivers. Advantageously, one or more of transceivers 201-203 may be based on software-defined radio (SDR) technology and therefore may be capable of communicating according to more than one wireless interface standard. Tee '758 at ¶ 36 Under control of display select program 260, control processor 210 compares the parameters in remote display parameters file 262 to the parameters in local display parameters file 261 and selects the display best suited to video/multimedia application program 290. If the display of the external device is selected, control processor 210 transfers the video/multimedia data to the appropriate one of transceivers 202 and 203. Control processor 210 may prompt the operator of mobile terminal 110 for permission to transmit video/multimedia data to the remote display device. Control processor 210 may also continue to send video/multimedia data to display 245 for simultaneous display. In an alternate embodiment, it may be assumed that the remote display is better than display 245. In such an embodiment, control processor 210 may select the remote display (with or without operator permission) without comparing parameters associated with display 245 and the remote display. Tee '758 at claim 1 1. A mobile terminal comprising:

'590 Patent Claim Limitation	Tee '758 Exemplary Disclosure
	a local display capable of displaying multimedia data; a controller capable of transmitting the multimedia data to the local display; and a first transceiver capable of communicating with a remote display device, wherein the controller is capable of comparing display parameter information associated with the remote display device to display parameter information associated with the local display and, in response to the comparison, transmitting the multimedia data to the remote display device via the first transceiver. Tee '758 at claims 15–17 15. The mobile terminal as set forth in claim 9, wherein the first transceiver comprises a personal area network transceiver. 16. The mobile terminal as set forth in claim 15, wherein the personal area network transceiver comprises one of: an IEEE-802.15.3x transceiver, an MB-OFDM transceiver, a UWB transceiver, a wireless USB transceiver, an IEEE-802.11x transceiver, and a Bluetooth transceiver. 17. The mobile terminal as set forth in claim 9, wherein the second transceiver comprises one of an IS-2000 transceiver, a 1xEV-DO transceiver, a 1xEV-DV transceiver, a GSM/GPRS/EDGE transceiver, a 3GPP UTRAN transceiver, an HSDPA/HSUPA transceiver, a 3GPP EUTRAN transceiver, a TD-CDMA transceiver, a WiBro transceiver, a WiMAX transceiver, an IEEE-802.16x transceiver, an IEEE-802.20 transceiver, and an IEEE-802.11x transceiver. To the extent Maxell contends Tee '758 does not disclose this limitation, a person of ordinary skill in the art would have readily arrived at this limitation by combining or modifying it in view of their general knowledge and/or the prior art references disclosed in the corresponding section of Samsung's Invalidity Contentions.
[9e] transmitting, using the first transmission frequency band, the video information to an external device by radio, via a first radio communication circuit;	Tee '758 discloses “transmitting, using the first transmission frequency band, the video information to an external device by radio, via a first radio communication circuit.” For example:

Tee '758 at Figure 1

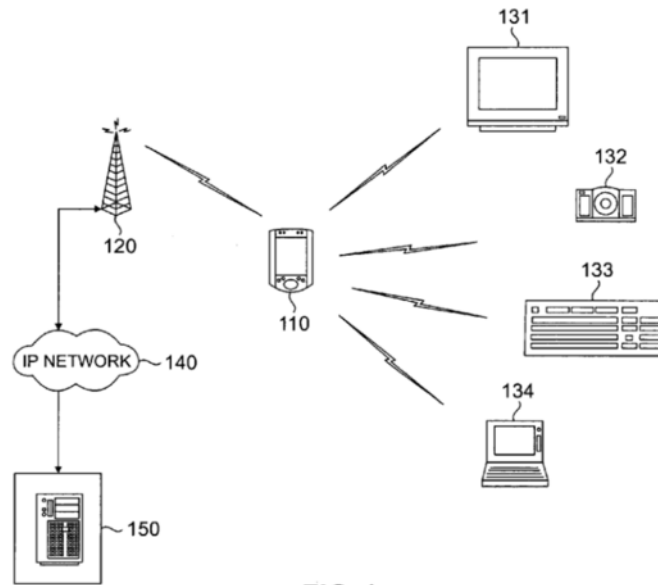


FIG. 1

Tee '758 at Figure 2

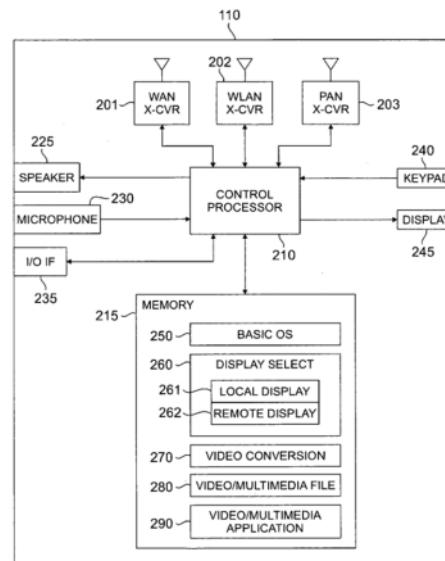


FIG. 2

Tee '758 at ¶ 6

A mobile terminal is provided. According to an advantageous embodiment, the mobile terminal comprises a local display capable of displaying multimedia data, a controller capable of transmitting the multimedia data to the local display, and a first transceiver capable of communicating with a remote display device. The controller is capable of comparing display parameter information associated with the external display device to display parameter information associated with the local display and, in response to the comparison, transmitting the multimedia data to the external display device via the first transceiver.

Tee '758 at ¶ 17

Generally, the first wireless interface supports mobile wireless communications, including, but not limited to IS-2000, 1xEV-DO, 1xEV-DV, GSM/GPRS/EDGE, 3GPP UTRAN, HSDPA/HSUPA, 3GPP EUTRAN, TD-CDMA, WiBro, WiMAX, IEEE-802.16x, IEEE-802.20, and IEEE-802.11x (e.g., WiFi) in a hotspot environment. The second wireless interface typically supports shorter range wireless communications, including, but not limited to IEEE-802.15.3x, MB-OFDM, UWB, Wireless USB, IEEE-802.11x (or WiFi), and a Bluetooth standard that supports high throughput applications

Tee '758 at ¶ 18

An exemplary mobile terminal may be used for mobile communications and as a gateway for a short-range wireless network, also called a personal area network (PAN). The mobile terminal may support a variety of mobile applications, including voice, multimedia (i.e., video, graphics, text, and audio downloads), video conferencing, web browsing, file download, VPN and Internet gaming. Advantageously, when the mobile terminal is near a higher quality display (e.g., a TV screen), the mobile terminal relays its video data to the external display device as well as to its internal display. This enables the operator of the mobile terminal to view the information on the higher quality display device, and to share the displayed information with other people at the same location, e.g., in a video conference call, or watching the latest broadcasting and streaming of News or events of common interests. Note that in the latter example, the source of information could be a remote Internet web server instead of a conventional TV broadcasting station. A remote Internet web server does not have the same geographical coverage limit as a conventional TV broadcasting station. In the case of group video conferencing using, for example, a digital camera phone, it would be more practical and ergonomically correct to have the received video data displayed on an external screen, while the phone camera captures and transmits the local user images.

Tee '758 at ¶ 20

'590 Patent Claim Limitation	Tee '758 Exemplary Disclosure
	Mobile terminal 110 is capable of communicating with one or more types of wireless wide-area networks (WANs), including conventional cellular networks and wireless local area networks (WLANs). By way of example, mobile terminal 110 may communicate with base station (BS) 120, which may be associated with a CDMA2000/1xEV-DO/1xEV-DV network, a GSM/GPRS/EDGE network, an IEEE-802.16x network, or the like. In other embodiments, base station 120 may communicate according to such wireless interface standards, or their evolutions, as 1xEV-DO, 1xEV-DV, GSM/GPRS/EDGE, 3GPP UTRAN, HSDPA/HSUPA, 3GPP EUTRAN, TD-CDMA, WiBro, WiMAX, IEEE-802.20, or IEEE-802.11x, among others. Base station 120 provides mobile terminal 110 with access to voice networks, such as the public switched telephone network (PSTN), and to data networks, including, for example, the Internet or proprietary Internet protocol (IP) networks. In the illustrated embodiment, BS 120 provides mobile terminal 110 with access to server 150 via IP network 140. Tee '758 at ¶ 21 Mobile terminal 110 is also capable of communicating with one or more types of external (or remote) devices via a short-range wireless interface standard, such as IEEE-802.11x, ultra-wideband (UWB), IEEE-802.15.3x, MB-OFDM, Wireless USB, or a Bluetooth standard that supports high throughput applications, among others. It is assumed for the purposes of this disclosure that any such remote device comprises a wireless transceiver that can communicate with mobile terminal 110 in order to establish a personal area network (PAN) connection. By way of example, mobile terminal 110 may communicate with television 131 (or computer monitor 131), projector 132, keyboard 133, and laptop (or handheld) personal computer (PC) 134. If the remote device is capable of displaying video (e.g., television 131), it is assumed that the wireless transceiver of the remote device supports a relatively high data rate that is suitable for video applications and/or multimedia applications. Tee '758 at ¶ 22 According to an advantageous embodiment, mobile terminal 110 may relay a video stream to a remote device in order to allow the operator of mobile terminal 110 to view the video on a better display. By way of example, mobile terminal 110 may be receiving streaming video data from server 150 via IP network 140 and base station 120. The streaming video is displayed on the display of mobile terminal 110. At some point, mobile terminal 110 may be located near to television 131 and establish a wireless communication link via the short-range wireless protocol (e.g., IEEE-802.11x/802.15.3x) with television 131. Mobile terminal 110 may then request information from television 131 regarding the capabilities of the display screen of television 131.

Tee '758 at ¶ 24

Advantageously, mobile terminal 110 is also capable of establishing a communication link with keyboard 133 (or another input device such as an electronic notepad) via the short-range PAN connection in order to allow the operator of mobile terminal 110 to use keyboard 133 (or the other input device) in lieu of the keyboard or other control buttons on mobile terminal 110. By way of example, mobile terminal 110 may establish a Bluetooth connection to keyboard 133 in order to allow the operator to use keyboard 133 to control mobile terminal 110. In this scenario, the external keyboard, external display and the mobile terminal are connected in the form of a conventional computer, with air interface 1 connecting the computer (with the MT playing the role of the computing unit) to the Internet, and air interface 2 or 3 connecting the computer to the external keyboard and display. If air interface 2 can support both connections between the MT and keyboard or display simultaneously, it is not necessary to have air interface 3.

Tee '758 at ¶ 25

FIG. 2 illustrates exemplary mobile terminal 110 in greater detail according to an exemplary embodiment of the disclosure. Mobile terminal 110 comprises wide-area network (WAN) transceiver (X-CVR) 201, wireless local area network (WLAN) transceiver (X-CVR) 202, and personal area network (PAN) transceiver (X-CVR) 203. In an embodiment, only one of WLAN transceiver 202 and PAN transceiver 203 may be employed. Mobile terminal 110 also comprises control processor 210, memory 215, speaker 225, microphone 230, input/output interface (I/O IF) 235, keypad 240 and display 245. Memory 215 stores basic operating system (OS) program 250, display select program 260, video conversion program 270, video/multimedia file 280, and one or more video application programs 290. Display select program 260 comprises local display parameters file 261 and remote display parameters file 262.

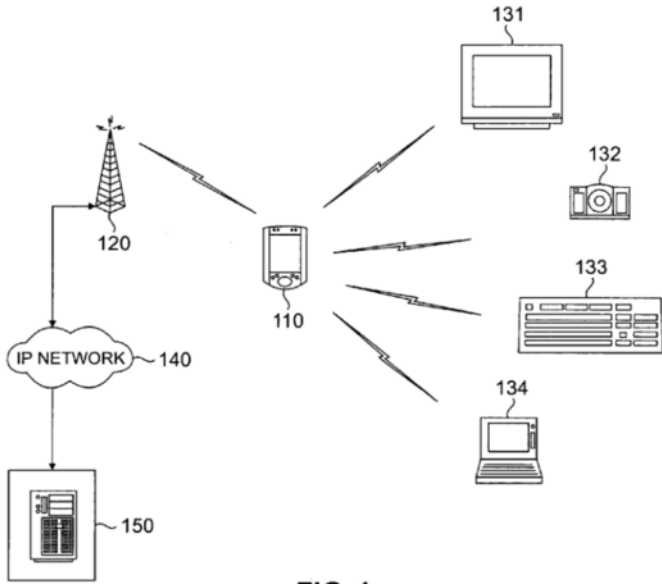
Tee '758 at ¶ 26

Control processor 210 and memory 215 function as a controller that controls the overall operation of mobile terminal 110. Control processor 210 executes basic OS program 250 in order to control, among other things, transceivers 201, 202 and 203. Control processor 210 receives operator inputs from keypad 240 or another user input device (not shown) and displays data on display 245. If mobile terminal 110 is, for example, a cell phone, control processor 210 can receive a voice signal from microphone 230 and can send voice signals to speaker 225. I/O interface 235 allows control processor 210 to be coupled to, and communicate with, another device, including, for example, a docking station, a data cord, an operator input device, or the like.

Tee '758 at ¶ 27

'590 Patent Claim Limitation	Tee '758 Exemplary Disclosure
	In the exemplary embodiment, control processor 210 uses WAN transceiver 201 to communicate over a wide area network. For example, WAN transceiver 201 may be a GSM/GPRS/EDGE transceiver, a CDMA2000/1xEV-DO transceiver, or an IEEE-802.16x transceiver that communicates with base station 120 of a wide-area network. Control processor 210 may use WLAN transceiver 202 to communicate in a wireless local area network (WLAN) environment, such as an office WLAN that may have a coverage area or range of several hundred feet. By way of example, WLAN transceiver 202 may be an IEEE-802.11x transceiver. Control processor 210 may use PAN transceiver 203 to communicate in a personal area network (PAN) environment, such as a Bluetooth or IEEE-802.15.3 communication link that may have a coverage area or range around 10-20 meters. Tee '758 at ¶ 28 In the illustrated embodiment in FIG. 2, three distinct transceivers are shown. However, this is by way of example only. Tee '758 at ¶ 28 In an alternate embodiment, mobile terminal 110 may communicate with BS 120 via a first air interface (or wireless interface) and with an external device that has a display screen via a second air interface (or wireless interface). Thus, mobile terminal 110 may comprise only two transceivers. Advantageously, one or more of transceivers 201-203 may be based on software-defined radio (SDR) technology and therefore may be capable of communicating according to more than one wireless interface standard. Tee '758 at ¶ 29 Additionally, depending on the distances involved, mobile terminal 110 may receive an incoming video and/or multimedia stream from any one of WAN transceiver 201, WLAN transceiver 202, and PAN transceiver 203 and may relay the video and/or multimedia stream to an external device using, for example, WLAN transceiver 202 or PAN transceiver 203. Essentially, this air interface functions similarly to I/O interface 235, but over the wireless link. Tee '758 at ¶ 36 Under control of display select program 260, control processor 210 compares the parameters in remote display parameters file 262 to the parameters in local display parameters file 261 and selects the display best suited to video/multimedia application program 290. If the display of the external device is selected, control processor 210 transfers the video/multimedia data to the appropriate one of transceivers 202 and 203. Control processor 210 may prompt the operator of mobile terminal 110 for permission to transmit video/multimedia data to the remote display device. Control processor 210 may also continue to send

'590 Patent Claim Limitation	Tee '758 Exemplary Disclosure
	video/multimedia data to display 245 for simultaneous display. In an alternate embodiment, it may be assumed that the remote display is better than display 245. In such an embodiment, control processor 210 may select the remote display (with or without operator permission) without comparing parameters associated with display 245 and the remote display. Tee '758 at ¶ 38 Mobile terminal 110 then requests the capabilities of the remote display device and compares the capabilities of the remote display device and local display 245 (process step 315). Mobile terminal 110 may prompt the operator to select the remote display device (process step 320). Assuming the remote display device is selected, mobile terminal 110 then forwards (or relays or re-transmits) the video stream from base station 120 (or video/multimedia file 280) to the remote display device (process step 325). Optionally, mobile terminal 110 may wirelessly communicate with a remote user input device, such as keyboard 133 process step 330). Optionally, if video/multimedia application program 290 is a video conferencing application, mobile terminal 110 receives via the short-range air interface video/multimedia data from a remote video camera and relays the camera video data to base station 120 (process step 335). Tee '758 at claim 1 1. A mobile terminal comprising: a local display capable of displaying multimedia data; a controller capable of transmitting the multimedia data to the local display; and a first transceiver capable of communicating with a remote display device, wherein the controller is capable of comparing display parameter information associated with the remote display device to display parameter information associated with the local display and, in response to the comparison, transmitting the multimedia data to the remote display device via the first transceiver. Tee '758 at claims 15–17 15. The mobile terminal as set forth in claim 9, wherein the first transceiver comprises a personal area network transceiver. 16. The mobile terminal as set forth in claim 15, wherein the personal area network transceiver comprises one of: an IEEE-802.15.3x transceiver, an MB-OFDM transceiver, a UWB transceiver, a wireless USB transceiver, an IEEE-802.11x transceiver, and a Bluetooth transceiver. 17. The mobile terminal as set forth in claim 9, wherein the second transceiver comprises one of an IS-2000 transceiver, a 1xEV-DO transceiver, a 1xEV-DV transceiver, a GSM/GPRS/EDGE transceiver, a 3GPP UTRAN transceiver, an HSDPA/HSUPA transceiver, a 3GPP EUTRAN transceiver, a TD-CDMA

'590 Patent Claim Limitation	Tee '758 Exemplary Disclosure
	transceiver, a WiBro transceiver, a WiMAX transceiver, an IEEE-802.16x transceiver, an IEEE-802.20 transceiver, and an IEEE-802.11x transceiver. To the extent Maxell contends Tee '758 does not disclose this limitation, a person of ordinary skill in the art would have readily arrived at this limitation by combining or modifying it in view of their general knowledge and/or the prior art references disclosed in the corresponding section of Samsung's Invalidity Contentions.
[9f] implementing a second transmission scheme having a second modulation scheme different from the first modulation scheme and a second transmission frequency band different from the first transmission frequency band;	Tee '758 discloses “implementing a second transmission scheme having a second modulation scheme different from the first modulation scheme and a second transmission frequency band different from the first transmission frequency band.” For example: Tee '758 at Figure 1  FIG. 1

Tee '758 at Figure 2

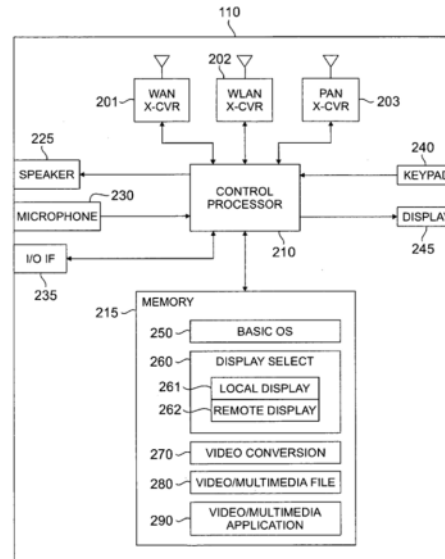


FIG. 2

Tee '758 at ¶ 17

Generally, the first wireless interface supports mobile wireless communications, including, but not limited to IS-2000, 1xEV-DO, 1xEV-DV, GSM/GPRS/EDGE, 3GPP UTRAN, HSDPA/HSUPA, 3GPP EUTRAN, TD-CDMA, WiBro, WiMAX, IEEE-802.16x, IEEE-802.20, and IEEE-802.11x (e.g., WiFi) in a hotspot environment. The second wireless interface typically supports shorter range wireless communications, including, but not limited to IEEE-802.15.3x, MB-OFDM, UWB, Wireless USB, IEEE-802.11x (or WiFi), and a Bluetooth standard that supports high throughput applications

Tee '758 at ¶ 18

An exemplary mobile terminal may be used for mobile communications and as a gateway for a short-range wireless network, also called a personal area network (PAN). The mobile terminal may support a variety of mobile applications, including voice, multimedia (i.e., video, graphics, text, and audio downloads), video conferencing, web browsing, file download, VPN and Internet gaming. Advantageously, when the mobile terminal is near a higher quality display (e.g., a TV screen), the mobile terminal relays its video data to the external display device as well as to its internal display. This enables the operator of the mobile terminal to view the information on the higher quality display device, and to share the displayed information with other people at the same location, e.g., in a video conference call, or

'590 Patent Claim Limitation	Tee '758 Exemplary Disclosure
	watching the latest broadcasting and streaming of News or events of common interests. Note that in the latter example, the source of information could be a remote Internet web server instead of a conventional TV broadcasting station. A remote Internet web server does not have the same geographical coverage limit as a conventional TV broadcasting station. In the case of group video conferencing using, for example, a digital camera phone, it would be more practical and ergonomically correct to have the received video data displayed on an external screen, while the phone camera captures and transmits the local user images. Tee '758 at ¶ 20 Mobile terminal 110 is capable of communicating with one or more types of wireless wide-area networks (WANs), including conventional cellular networks and wireless local area networks (WLANs). By way of example, mobile terminal 110 may communicate with base station (BS) 120, which may be associated with a CDMA2000/1xEV-DO/1xEV-DV network, a GSM/GPRS/EDGE network, an IEEE-802.16x network, or the like. In other embodiments, base station 120 may communicate according to such wireless interface standards, or their evolutions, as 1xEV-DO, 1xEV-DV, GSM/GPRS/EDGE, 3GPP UTRAN, HSDPA/HSUPA, 3GPP EUTRAN, TD-CDMA, WiBro, WiMAX, IEEE-802.20, or IEEE-802.11x, among others. Base station 120 provides mobile terminal 110 with access to voice networks, such as the public switched telephone network (PSTN), and to data networks, including, for example, the Internet or proprietary Internet protocol (IP) networks. In the illustrated embodiment, BS 120 provides mobile terminal 110 with access to server 150 via IP network 140. Tee '758 at ¶ 21 Mobile terminal 110 is also capable of communicating with one or more types of external (or remote) devices via a short-range wireless interface standard, such as IEEE-802.11x, ultra-wideband (UWB), IEEE-802.15.3x, MB-OFDM, Wireless USB, or a Bluetooth standard that supports high throughput applications, among others. It is assumed for the purposes of this disclosure that any such remote device comprises a wireless transceiver that can communicate with mobile terminal 110 in order to establish a personal area network (PAN) connection. By way of example, mobile terminal 110 may communicate with television 131 (or computer monitor 131), projector 132, keyboard 133, and laptop (or handheld) personal computer (PC) 134. If the remote device is capable of displaying video (e.g., television 131), it is assumed that the wireless transceiver of the remote device supports a relatively high data rate that is suitable for video applications and/or multimedia applications.

Tee '758 at ¶ 24

Advantageously, mobile terminal 110 is also capable of establishing a communication link with keyboard 133 (or another input device such as an electronic notepad) via the short-range PAN connection in order to allow the operator of mobile terminal 110 to use keyboard 133 (or the other input device) in lieu of the keyboard or other control buttons on mobile terminal 110. By way of example, mobile terminal 110 may establish a Bluetooth connection to keyboard 133 in order to allow the operator to use keyboard 133 to control mobile terminal 110. In this scenario, the external keyboard, external display and the mobile terminal are connected in the form of a conventional computer, with air interface 1 connecting the computer (with the MT playing the role of the computing unit) to the Internet, and air interface 2 or 3 connecting the computer to the external keyboard and display. If air interface 2 can support both connections between the MT and keyboard or display simultaneously, it is not necessary to have air interface 3.

Tee '758 at ¶ 25

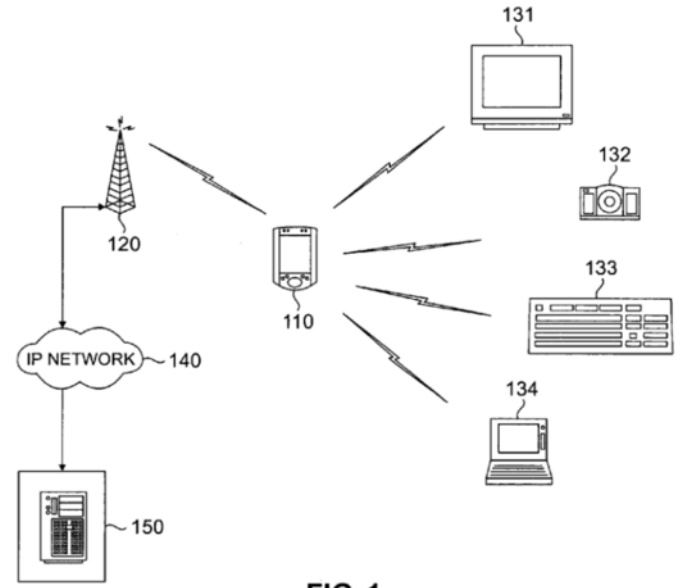
FIG. 2 illustrates exemplary mobile terminal 110 in greater detail according to an exemplary embodiment of the disclosure. Mobile terminal 110 comprises wide-area network (WAN) transceiver (X-CVR) 201, wireless local area network (WLAN) transceiver (X-CVR) 202, and personal area network (PAN) transceiver (X-CVR) 203. In an embodiment, only one of WLAN transceiver 202 and PAN transceiver 203 may be employed. Mobile terminal 110 also comprises control processor 210, memory 215, speaker 225, microphone 230, input/output interface (I/O IF) 235, keypad 240 and display 245. Memory 215 stores basic operating system (OS) program 250, display select program 260, video conversion program 270, video/multimedia file 280, and one or more video application programs 290. Display select program 260 comprises local display parameters file 261 and remote display parameters file 262.

Tee '758 at ¶ 26

Control processor 210 and memory 215 function as a controller that controls the overall operation of mobile terminal 110. Control processor 210 executes basic OS program 250 in order to control, among other things, transceivers 201, 202 and 203. Control processor 210 receives operator inputs from keypad 240 or another user input device (not shown) and displays data on display 245. If mobile terminal 110 is, for example, a cell phone, control processor 210 can receive a voice signal from microphone 230 and can send voice signals to speaker 225. I/O interface 235 allows control processor 210 to be coupled to, and communicate with, another device, including, for example, a docking station, a data cord, an operator input device, or the like.

Tee '758 at ¶ 27

'590 Patent Claim Limitation	Tee '758 Exemplary Disclosure
	In the exemplary embodiment, control processor 210 uses WAN transceiver 201 to communicate over a wide area network. For example, WAN transceiver 201 may be a GSM/GPRS/EDGE transceiver, a CDMA2000/1xEV-DO transceiver, or an IEEE-802.16x transceiver that communicates with base station 120 of a wide-area network. Control processor 210 may use WLAN transceiver 202 to communicate in a wireless local area network (WLAN) environment, such as an office WLAN that may have a coverage area or range of several hundred feet. By way of example, WLAN transceiver 202 may be an IEEE-802.11x transceiver. Control processor 210 may use PAN transceiver 203 to communicate in a personal area network (PAN) environment, such as a Bluetooth or IEEE-802.15.3 communication link that may have a coverage area or range around 10-20 meters. Tee '758 at ¶ 28 In the illustrated embodiment in FIG. 2, three distinct transceivers are shown. However, this is by way of example only. Tee '758 at ¶ 28 In an alternate embodiment, mobile terminal 110 may communicate with BS 120 via a first air interface (or wireless interface) and with an external device that has a display screen via a second air interface (or wireless interface). Thus, mobile terminal 110 may comprise only two transceivers. Advantageously, one or more of transceivers 201-203 may be based on software-defined radio (SDR) technology and therefore may be capable of communicating according to more than one wireless interface standard. Tee '758 at claim 9 9. The mobile terminal as set forth in claim 1, further comprising a second transceiver capable of communicating with a wireless network. Tee '758 at claims 15–17 15. The mobile terminal as set forth in claim 9, wherein the first transceiver comprises a personal area network transceiver. 16. The mobile terminal as set forth in claim 15, wherein the personal area network transceiver comprises one of: an IEEE-802.15.3x transceiver, an MB-OFDM transceiver, a UWB transceiver, a wireless USB transceiver, an IEEE-802.11x transceiver, and a Bluetooth transceiver. 17. The mobile terminal as set forth in claim 9, wherein the second transceiver comprises one of an IS-2000 transceiver, a 1xEV-DO transceiver, a 1xEV-DV transceiver, a GSM/GPRS/EDGE transceiver, a 3GPP UTRAN transceiver, an HSDPA/HSUPA transceiver, a 3GPP EUTRAN transceiver, a TD-CDMA

'590 Patent Claim Limitation	Tee '758 Exemplary Disclosure
	transceiver, a WiBro transceiver, a WiMAX transceiver, an IEEE-802.16x transceiver, an IEEE-802.20 transceiver, and an IEEE-802.11x transceiver. To the extent Maxell contends Tee '758 does not disclose this limitation, a person of ordinary skill in the art would have readily arrived at this limitation by combining or modifying it in view of their general knowledge and/or the prior art references disclosed in the corresponding section of Samsung's Invalidity Contentions.
[9g] connecting, by radio, to an internet or a home network to transmit and receive information using the second transmission frequency band, via a second radio communication circuit; transmitting, via a third radio communication circuit, information using a third transmission frequency band;	Tee '758 discloses “connecting, by radio, to an internet or a home network to transmit and receive information using the second transmission frequency band, via a second radio communication circuit; transmitting, via a third radio communication circuit, information using a third transmission frequency band.” For example: Tee '758 at Figure 1  FIG. 1

Tee '758 at Figure 2

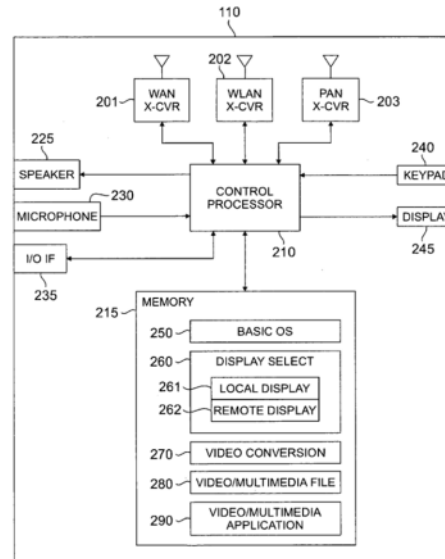


FIG. 2

Tee '758 at ¶ 17

Generally, the first wireless interface supports mobile wireless communications, including, but not limited to IS-2000, 1xEV-DO, 1xEV-DV, GSM/GPRS/EDGE, 3GPP UTRAN, HSDPA/HSUPA, 3GPP EUTRAN, TD-CDMA, WiBro, WiMAX, IEEE-802.16x, IEEE-802.20, and IEEE-802.11x (e.g., WiFi) in a hotspot environment. The second wireless interface typically supports shorter range wireless communications, including, but not limited to IEEE-802.15.3x, MB-OFDM, UWB, Wireless USB, IEEE-802.11x (or WiFi), and a Bluetooth standard that supports high throughput applications

Tee '758 at ¶ 18

An exemplary mobile terminal may be used for mobile communications and as a gateway for a short-range wireless network, also called a personal area network (PAN). The mobile terminal may support a variety of mobile applications, including voice, multimedia (i.e., video, graphics, text, and audio downloads), video conferencing, web browsing, file download, VPN and Internet gaming. Advantageously, when the mobile terminal is near a higher quality display (e.g., a TV screen), the mobile terminal relays its video data to the external display device as well as to its internal display. This enables the operator of the mobile terminal to view the information on the higher quality display device, and to share the displayed information with other people at the same location, e.g., in a video conference call, or

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	watching the latest broadcasting and streaming of News or events of common interests. Note that in the latter example, the source of information could be a remote Internet web server instead of a conventional TV broadcasting station. A remote Internet web server does not have the same geographical coverage limit as a conventional TV broadcasting station. In the case of group video conferencing using, for example, a digital camera phone, it would be more practical and ergonomically correct to have the received video data displayed on an external screen, while the phone camera captures and transmits the local user images. Tee '758 at ¶ 20 Mobile terminal 110 is capable of communicating with one or more types of wireless wide-area networks (WANs), including conventional cellular networks and wireless local area networks (WLANs). By way of example, mobile terminal 110 may communicate with base station (BS) 120, which may be associated with a CDMA2000/1xEV-DO/1xEV-DV network, a GSM/GPRS/EDGE network, an IEEE-802.16x network, or the like. In other embodiments, base station 120 may communicate according to such wireless interface standards, or their evolutions, as 1xEV-DO, 1xEV-DV, GSM/GPRS/EDGE, 3GPP UTRAN, HSDPA/HSUPA, 3GPP EUTRAN, TD-CDMA, WiBro, WiMAX, IEEE-802.20, or IEEE-802.11x, among others. Base station 120 provides mobile terminal 110 with access to voice networks, such as the public switched telephone network (PSTN), and to data networks, including, for example, the Internet or proprietary Internet protocol (IP) networks. In the illustrated embodiment, BS 120 provides mobile terminal 110 with access to server 150 via IP network 140. Tee '758 at ¶ 21 Mobile terminal 110 is also capable of communicating with one or more types of external (or remote) devices via a short-range wireless interface standard, such as IEEE-802.11x, ultra-wideband (UWB), IEEE-802.15.3x, MB-OFDM, Wireless USB, or a Bluetooth standard that supports high throughput applications, among others. It is assumed for the purposes of this disclosure that any such remote device comprises a wireless transceiver that can communicate with mobile terminal 110 in order to establish a personal area network (PAN) connection. By way of example, mobile terminal 110 may communicate with television 131 (or computer monitor 131), projector 132, keyboard 133, and laptop (or handheld) personal computer (PC) 134. If the remote device is capable of displaying video (e.g., television 131), it is assumed that the wireless transceiver of the remote device supports a relatively high data rate that is suitable for video applications and/or multimedia applications.

Tee '758 at ¶ 24

Advantageously, mobile terminal 110 is also capable of establishing a communication link with keyboard 133 (or another input device such as an electronic notepad) via the short-range PAN connection in order to allow the operator of mobile terminal 110 to use keyboard 133 (or the other input device) in lieu of the keyboard or other control buttons on mobile terminal 110. By way of example, mobile terminal 110 may establish a Bluetooth connection to keyboard 133 in order to allow the operator to use keyboard 133 to control mobile terminal 110. In this scenario, the external keyboard, external display and the mobile terminal are connected in the form of a conventional computer, with air interface 1 connecting the computer (with the MT playing the role of the computing unit) to the Internet, and air interface 2 or 3 connecting the computer to the external keyboard and display. If air interface 2 can support both connections between the MT and keyboard or display simultaneously, it is not necessary to have air interface 3.

Tee '758 at ¶ 25

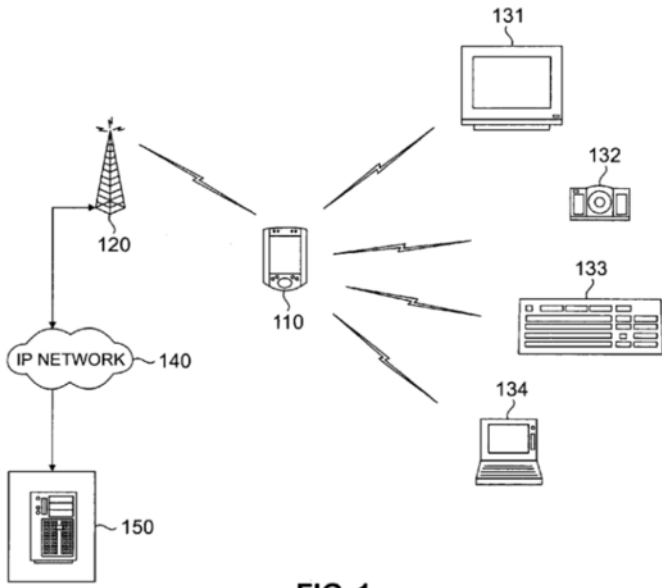
FIG. 2 illustrates exemplary mobile terminal 110 in greater detail according to an exemplary embodiment of the disclosure. Mobile terminal 110 comprises wide-area network (WAN) transceiver (X-CVR) 201, wireless local area network (WLAN) transceiver (X-CVR) 202, and personal area network (PAN) transceiver (X-CVR) 203. In an embodiment, only one of WLAN transceiver 202 and PAN transceiver 203 may be employed. Mobile terminal 110 also comprises control processor 210, memory 215, speaker 225, microphone 230, input/output interface (I/O IF) 235, keypad 240 and display 245. Memory 215 stores basic operating system (OS) program 250, display select program 260, video conversion program 270, video/multimedia file 280, and one or more video application programs 290. Display select program 260 comprises local display parameters file 261 and remote display parameters file 262.

Tee '758 at ¶ 26

Control processor 210 and memory 215 function as a controller that controls the overall operation of mobile terminal 110. Control processor 210 executes basic OS program 250 in order to control, among other things, transceivers 201, 202 and 203. Control processor 210 receives operator inputs from keypad 240 or another user input device (not shown) and displays data on display 245. If mobile terminal 110 is, for example, a cell phone, control processor 210 can receive a voice signal from microphone 230 and can send voice signals to speaker 225. I/O interface 235 allows control processor 210 to be coupled to, and communicate with, another device, including, for example, a docking station, a data cord, an operator input device, or the like.

Tee '758 at ¶ 27

'590 Patent Claim Limitation	Tee '758 Exemplary Disclosure
	In the exemplary embodiment, control processor 210 uses WAN transceiver 201 to communicate over a wide area network. For example, WAN transceiver 201 may be a GSM/GPRS/EDGE transceiver, a CDMA2000/1xEV-DO transceiver, or an IEEE-802.16x transceiver that communicates with base station 120 of a wide-area network. Control processor 210 may use WLAN transceiver 202 to communicate in a wireless local area network (WLAN) environment, such as an office WLAN that may have a coverage area or range of several hundred feet. By way of example, WLAN transceiver 202 may be an IEEE-802.11x transceiver. Control processor 210 may use PAN transceiver 203 to communicate in a personal area network (PAN) environment, such as a Bluetooth or IEEE-802.15.3 communication link that may have a coverage area or range around 10-20 meters. Tee '758 at ¶ 28 In the illustrated embodiment in FIG. 2, three distinct transceivers are shown. However, this is by way of example only. Tee '758 at ¶ 28 In an alternate embodiment, mobile terminal 110 may communicate with BS 120 via a first air interface (or wireless interface) and with an external device that has a display screen via a second air interface (or wireless interface). Thus, mobile terminal 110 may comprise only two transceivers. Advantageously, one or more of transceivers 201-203 may be based on software-defined radio (SDR) technology and therefore may be capable of communicating according to more than one wireless interface standard. Tee '758 at claim 9 9. The mobile terminal as set forth in claim 1, further comprising a second transceiver capable of communicating with a wireless network. Tee '758 at claims 15–17 15. The mobile terminal as set forth in claim 9, wherein the first transceiver comprises a personal area network transceiver. 16. The mobile terminal as set forth in claim 15, wherein the personal area network transceiver comprises one of: an IEEE-802.15.3x transceiver, an MB-OFDM transceiver, a UWB transceiver, a wireless USB transceiver, an IEEE-802.11x transceiver, and a Bluetooth transceiver. 17. The mobile terminal as set forth in claim 9, wherein the second transceiver comprises one of an IS-2000 transceiver, a 1xEV-DO transceiver, a 1xEV-DV transceiver, a GSM/GPRS/EDGE transceiver, a 3GPP UTRAN transceiver, an HSDPA/HSUPA transceiver, a 3GPP EUTRAN transceiver, a TD-CDMA

'590 Patent Claim Limitation	Tee '758 Exemplary Disclosure
	transceiver, a WiBro transceiver, a WiMAX transceiver, an IEEE-802.16x transceiver, an IEEE-802.20 transceiver, and an IEEE-802.11x transceiver. To the extent Maxell contends Tee '758 does not disclose this limitation, a person of ordinary skill in the art would have readily arrived at this limitation by combining or modifying it in view of their general knowledge and/or the prior art references disclosed in the corresponding section of Samsung's Invalidity Contentions.
[9h] controlling, via a controller, assignment of connection of each of the first, second, and third radio communication circuits, wherein assignment of connection for each of the first and second radio communication circuit is controlled in response to receiving an indication from a user such that when an indication from the user indicates to transmit video information using the first radio communication circuit, a connection is assigned to the first radio communication circuit for transmitting the video information,	Tee '758 discloses “controlling, via a controller, assignment of connection of each of the first, second, and third radio communication circuits, wherein assignment of connection for each of the first and second radio communication circuit is controlled in response to receiving an indication from a user such that when an indication from the user indicates to transmit video information using the first radio communication circuit, a connection is assigned to the first radio communication circuit for transmitting the video information.” For example: Tee '758 at Figure 1  FIG. 1

Tee '758 at Figure 2

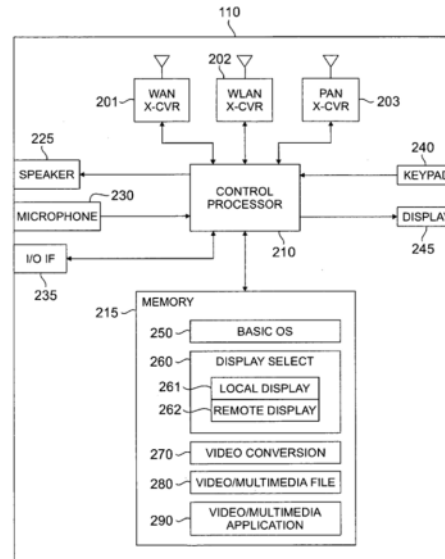


FIG. 2

Tee '758 at ¶ 6

A mobile terminal is provided. According to an advantageous embodiment, the mobile terminal comprises a local display capable of displaying multimedia data, a controller capable of transmitting the multimedia data to the local display, and a first transceiver capable of communicating with a remote display device. The controller is capable of comparing display parameter information associated with the external display device to display parameter information associated with the local display and, in response to the comparison, transmitting the multimedia data to the external display device via the first transceiver.

Tee '758 at ¶ 16

In some instances, the determination of whether the remote device has a better display may depend on the requirements of the video application executed by the mobile terminal. For many applications, it may be assumed that displays that are larger and have higher resolutions are better displays. The mobile terminal user may also make the decision as to which display to use.

Tee '758 at ¶ 17

'590 Patent Claim Limitation	Tee '758 Exemplary Disclosure
	Generally, the first wireless interface supports mobile wireless communications, including, but not limited to IS-2000, 1xEV-DO, 1xEV-DV, GSM/GPRS/EDGE, 3GPP UTRAN, HSDPA/HSUPA, 3GPP EUTRAN, TD-CDMA, WiBro, WiMAX, IEEE-802.16x, IEEE-802.20, and IEEE-802.11x (e.g., WiFi) in a hotspot environment. The second wireless interface typically supports shorter range wireless communications, including, but not limited to IEEE-802.15.3x, MB-OFDM, UWB, Wireless USB, IEEE-802.11x (or WiFi), and a Bluetooth standard that supports high throughput applications Tee '758 at ¶ 25 FIG. 2 illustrates exemplary mobile terminal 110 in greater detail according to an exemplary embodiment of the disclosure. Mobile terminal 110 comprises wide-area network (WAN) transceiver (X-CVR) 201, wireless local area network (WLAN) transceiver (X-CVR) 202, and personal area network (PAN) transceiver (X-CVR) 203. In an embodiment, only one of WLAN transceiver 202 and PAN transceiver 203 may be employed. Mobile terminal 110 also comprises control processor 210, memory 215, speaker 225, microphone 230, input/output interface (I/O IF) 235, keypad 240 and display 245. Memory 215 stores basic operating system (OS) program 250, display select program 260, video conversion program 270, video/multimedia file 280, and one or more video application programs 290. Display select program 260 comprises local display parameters file 261 and remote display parameters file 262. Tee '758 at ¶ 26 Control processor 210 and memory 215 function as a controller that controls the overall operation of mobile terminal 110. Control processor 210 executes basic OS program 250 in order to control, among other things, transceivers 201, 202 and 203. Control processor 210 receives operator inputs from keypad 240 or another user input device (not shown) and displays data on display 245. If mobile terminal 110 is, for example, a cell phone, control processor 210 can receive a voice signal from microphone 230 and can send voice signals to speaker 225. I/O interface 235 allows control processor 210 to be coupled to, and communicate with, another device, including, for example, a docking station, a data cord, an operator input device, or the like. Tee '758 at ¶ 27 In the exemplary embodiment, control processor 210 uses WAN transceiver 201 to communicate over a wide area network. For example, WAN transceiver 201 may be a GSM/GPRS/EDGE transceiver, a CDMA2000/1xEV-DO transceiver, or an IEEE-802.16x transceiver that communicates with base station 120 of a wide-area network. Control processor 210 may use WLAN transceiver 202 to communicate in a wireless local area network (WLAN) environment, such as an office WLAN that may have a coverage area or range of several hundred feet. By way of example, WLAN transceiver 202 may be an IEEE-

'590 Patent Claim Limitation	Tee '758 Exemplary Disclosure
	802.11x transceiver. Control processor 210 may use PAN transceiver 203 to communicate in a personal area network (PAN) environment, such as a Bluetooth or IEEE-802.15.3 communication link that may have a coverage area or range around 10-20 meters. Tee '758 at ¶ 28 In an alternate embodiment, mobile terminal 110 may communicate with BS 120 via a first air interface (or wireless interface) and with an external device that has a display screen via a second air interface (or wireless interface). Thus, mobile terminal 110 may comprise only two transceivers. Advantageously, one or more of transceivers 201-203 may be based on software-defined radio (SDR) technology and therefore may be capable of communicating according to more than one wireless interface standard. Tee '758 at ¶ 29 Additionally, depending on the distances involved, mobile terminal 110 may receive an incoming video and/or multimedia stream from any one of WAN transceiver 201, WLAN transceiver 202, and PAN transceiver 203 and may relay the video and/or multimedia stream to an external device using, for example, WLAN transceiver 202 or PAN transceiver 203. Essentially, this air interface functions similarly to I/O interface 235, but over the wireless link. Tee '758 at ¶ 30 In one example, mobile terminal 201 may receive a video stream from BS 120 via WAN transceiver 201 and may relay the video stream over a short distance to a remote display device via WLAN transceiver 202 or PAN transceiver 203. This may occur when mobile terminal 201 communicates with BS 120 in a cellular network and the remote display communicates with mobile terminal 110 using, for example, an IEEE-802.11x transceiver (i.e., communicates with WLAN transceiver 202) or a Bluetooth or IEEE-802.15.3x transceiver (i.e., communicates with PAN transceiver 203). Tee '758 at ¶ 33 Control processor 210 executes video/multimedia application program 290 in order to display video data on display 245. Control processor 210 executes video conversion program 270 in order to re-format (if necessary) the video data downloaded from server 150 through the one wireless interface (e.g., WAN transceiver 201) to a suitable format for re-transmission via another wireless interface (e.g., WLAN transceiver 202 or PAN transceiver 203). Additionally, video/multimedia application program 290 may retrieve video/multimedia data from video/multimedia file 280 and transmit a video stream to a remote device via a wireless interface. Advantageously, the wireless interface may have more than one

'590 Patent Claim Limitation	Tee '758 Exemplary Disclosure
	connection at the same time. For example, PAN transceiver 203 may transmit video to television 131 while simultaneously communicating with wireless keyboard 240. Tee '758 at ¶ 34 Control processor 210 executes display select program 260 in order to determine whether the quality of the display of the remote device (e.g., television 131) is superior to the quality of display 245 in mobile terminal 110. Control processor 210 may execute display select program 260 automatically in response to detection of wireless signals transmitted by the remote device. For example, PAN transceiver 203 may detect a pilot (or similar beacon) signal transmitted by the wireless transceiver associated with television 131 and may send a notification signal to control processor 210. The pilot/beacon signal may be a signal broadcast by a device, such as television 131, for example, to provide notification of the presence and capabilities of the device and the services provided by the device. Upon receipt of the notification signal, control processor 210 may launch display select application program 260. In another embodiment, PAN transceiver 203 broadcasts a signal to discover and interrogate neighboring nodes that may have the ability to display the information. As an example, the wireless transceiver associated with television 131 may acquire the transmission from PAN transceiver 203 and may transmit a signal in response to the inquiry, using the protocol supported by the air interface standard. Alternatively, control processor 210 may execute display select program 260 in response to manual inputs entered by the operator of mobile terminal 110. Tee '758 at ¶ 36 Under control of display select program 260, control processor 210 compares the parameters in remote display parameters file 262 to the parameters in local display parameters file 261 and selects the display best suited to video/multimedia application program 290. If the display of the external device is selected, control processor 210 transfers the video/multimedia data to the appropriate one of transceivers 202 and 203. Control processor 210 may prompt the operator of mobile terminal 110 for permission to transmit video/multimedia data to the remote display device. Control processor 210 may also continue to send video/multimedia data to display 245 for simultaneous display. In an alternate embodiment, it may be assumed that the remote display is better than display 245. In such an embodiment, control processor 210 may select the remote display (with or without operator permission) without comparing parameters associated with display 245 and the remote display. Tee '758 at ¶ 37 FIG. 3 depicts flow diagram 300, which illustrates the operation of exemplary mobile terminal 110 and a remote display device according to one embodiment of the disclosure. Initially, mobile terminal 110

'590 Patent Claim Limitation	Tee '758 Exemplary Disclosure
	accesses base station 120 via an air interface (e.g., transceiver 201 or 202) and initiates a video/multimedia download from server 150 (process step 305). Alternatively, mobile terminal 110 may play back video/multimedia data stored in video/multimedia file 280. At some point, mobile terminal 110 detects the presence of a remote display device (e.g., television 131) via another air interface (e.g., transceiver 202 or 203) and establishes a wireless link with the remote display device (process step 310), with the authorization of the mobile terminal user. Tee '758 at ¶ 38 Mobile terminal 110 then requests the capabilities of the remote display device and compares the capabilities of the remote display device and local display 245 (process step 315). Mobile terminal 110 may prompt the operator to select the remote display device (process step 320). Assuming the remote display device is selected, mobile terminal 110 then forwards (or relays or re-transmits) the video stream from base station 120 (or video/multimedia file 280) to the remote display device (process step 325). Optionally, mobile terminal 110 may wirelessly communicate with a remote user input device, such as keyboard 133 process step 330). Optionally, if video/multimedia application program 290 is a video conferencing application, mobile terminal 110 receives via the short-range air interface video/multimedia data from a remote video camera and relays the camera video data to base station 120 (process step 335). Tee '758 at claim 1 1. A mobile terminal comprising: a local display capable of displaying multimedia data; a controller capable of transmitting the multimedia data to the local display; and a first transceiver capable of communicating with a remote display device, wherein the controller is capable of comparing display parameter information associated with the remote display device to display parameter information associated with the local display and, in response to the comparison, transmitting the multimedia data to the remote display device via the first transceiver. Tee '758 at claim 6 6. The mobile terminal as set forth in claim 4, wherein the controller is capable of prompting an operator of the mobile terminal for permission to transmit the multimedia data to the remote display device via the first transceiver. Tee '758 at claims 12–14 12. The mobile terminal as set forth in claim 11, wherein the controller is capable of communicating with a remote user input device via the first transceiver.

'590 Patent Claim Limitation	Tee '758 Exemplary Disclosure
	13. The mobile terminal as set forth in claim 12, wherein the remote user input device comprises a wireless keyboard. 14. The mobile terminal as set forth in claim 12, wherein the controller is capable of prompting an operator of the mobile terminal for permission to transmit the multimedia data to the remote display device via the first transceiver. To the extent Maxell contends Tee '758 does not disclose this limitation, a person of ordinary skill in the art would have readily arrived at this limitation by combining or modifying it in view of their general knowledge and/or the prior art references disclosed in the corresponding section of Samsung's Invalidity Contentions.
[9i] wherein the transmitting and connecting is controlled so that the first radio communication circuit is configured to transmit video information and the second radio communication circuit is configured to connect to the internet or the home network simultaneously;	Tee '758 discloses "wherein the transmitting and connecting is controlled so that the first radio communication circuit is configured to transmit video information and the second radio communication circuit is configured to connect to the internet or the home network simultaneously." For example: Tee '758 at ¶ 18 An exemplary mobile terminal may be used for mobile communications and as a gateway for a short-range wireless network, also called a personal area network (PAN). The mobile terminal may support a variety of mobile applications, including voice, multimedia (i.e., video, graphics, text, and audio downloads), video conferencing, web browsing, file download, VPN and Internet gaming. Advantageously, when the mobile terminal is near a higher quality display (e.g., a TV screen), the mobile terminal relays its video data to the external display device as well as to its internal display. This enables the operator of the mobile terminal to view the information on the higher quality display device, and to share the displayed information with other people at the same location, e.g., in a video conference call, or watching the latest broadcasting and streaming of News or events of common interests. Note that in the latter example, the source of information could be a remote Internet web server instead of a conventional TV broadcasting station. A remote Internet web server does not have the same geographical coverage limit as a conventional TV broadcasting station. In the case of group video conferencing using, for example, a digital camera phone, it would be more practical and ergonomically correct to have the received video data displayed on an external screen, while the phone camera captures and transmits the local user images. Tee '758 at ¶ 25 FIG. 2 illustrates exemplary mobile terminal 110 in greater detail according to an exemplary embodiment of the disclosure. Mobile terminal 110 comprises wide-area network (WAN) transceiver (X-CVR) 201,

'590 Patent Claim Limitation	Tee '758 Exemplary Disclosure
	wireless local area network (WLAN) transceiver (X-CVR) 202, and personal area network (PAN) transceiver (X-CVR) 203. In an embodiment, only one of WLAN transceiver 202 and PAN transceiver 203 may be employed. Mobile terminal 110 also comprises control processor 210, memory 215, speaker 225, microphone 230, input/output interface (I/O IF) 235, keypad 240 and display 245. Memory 215 stores basic operating system (OS) program 250, display select program 260, video conversion program 270, video/multimedia file 280, and one or more video application programs 290. Display select program 260 comprises local display parameters file 261 and remote display parameters file 262. Tee '758 at ¶ 26 Control processor 210 and memory 215 function as a controller that controls the overall operation of mobile terminal 110. Control processor 210 executes basic OS program 250 in order to control, among other things, transceivers 201, 202 and 203. Control processor 210 receives operator inputs from keypad 240 or another user input device (not shown) and displays data on display 245. If mobile terminal 110 is, for example, a cell phone, control processor 210 can receive a voice signal from microphone 230 and can send voice signals to speaker 225. I/O interface 235 allows control processor 210 to be coupled to, and communicate with, another device, including, for example, a docking station, a data cord, an operator input device, or the like. Tee '758 at ¶ 27 In the exemplary embodiment, control processor 210 uses WAN transceiver 201 to communicate over a wide area network. For example, WAN transceiver 201 may be a GSM/GPRS/EDGE transceiver, a CDMA2000/1xEV-DO transceiver, or an IEEE-802.16x transceiver that communicates with base station 120 of a wide-area network. Control processor 210 may use WLAN transceiver 202 to communicate in a wireless local area network (WLAN) environment, such as an office WLAN that may have a coverage area or range of several hundred feet. By way of example, WLAN transceiver 202 may be an IEEE-802.11x transceiver. Control processor 210 may use PAN transceiver 203 to communicate in a personal area network (PAN) environment, such as a Bluetooth or IEEE-802.15.3 communication link that may have a coverage area or range around 10-20 meters. Tee '758 at ¶ 28 In an alternate embodiment, mobile terminal 110 may communicate with BS 120 via a first air interface (or wireless interface) and with an external device that has a display screen via a second air interface (or wireless interface). Thus, mobile terminal 110 may comprise only two transceivers. Advantageously, one or more of transceivers 201-203 may be based on software-defined radio (SDR) technology and therefore may be capable of communicating according to more than one wireless interface standard.

Tee '758 at ¶ 29

Additionally, depending on the distances involved, mobile terminal 110 may receive an incoming video and/or multimedia stream from any one of WAN transceiver 201, WLAN transceiver 202, and PAN transceiver 203 and may relay the video and/or multimedia stream to an external device using, for example, WLAN transceiver 202 or PAN transceiver 203. Essentially, this air interface functions similarly to I/O interface 235, but over the wireless link.

Tee '758 at ¶ 30

In one example, mobile terminal 201 may receive a video stream from BS 120 via WAN transceiver 201 and may relay the video stream over a short distance to a remote display device via WLAN transceiver 202 or PAN transceiver 203. This may occur when mobile terminal 201 communicates with BS 120 in a cellular network and the remote display communicates with mobile terminal 110 using, for example, an IEEE-802.11x transceiver (i.e., communicates with WLAN transceiver 202) or a Bluetooth or IEEE-802.15.3x transceiver (i.e., communicates with PAN transceiver 203).

Tee '758 at ¶ 33

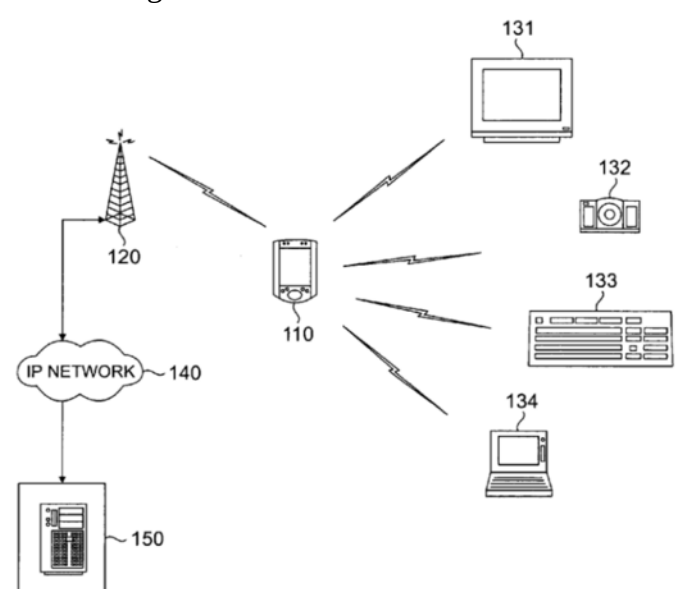
Control processor 210 executes video/multimedia application program 290 in order to display video data on display 245. Control processor 210 executes video conversion program 270 in order to re-format (if necessary) the video data downloaded from server 150 through the one wireless interface (e.g., WAN transceiver 201) to a suitable format for re-transmission via another wireless interface (e.g., WLAN transceiver 202 or PAN transceiver 203). Additionally, video/multimedia application program 290 may retrieve video/multimedia data from video/multimedia file 280 and transmit a video stream to a remote device via a wireless interface. Advantageously, the wireless interface may have more than one connection at the same time. For example, PAN transceiver 203 may transmit video to television 131 while simultaneously communicating with wireless keyboard 240.

Tee '758 at ¶ 36

Under control of display select program 260, control processor 210 compares the parameters in remote display parameters file 262 to the parameters in local display parameters file 261 and selects the display best suited to video/multimedia application program 290. If the display of the external device is selected, control processor 210 transfers the video/multimedia data to the appropriate one of transceivers 202 and 203. Control processor 210 may prompt the operator of mobile terminal 110 for permission to transmit video/multimedia data to the remote display device. Control processor 210 may also continue to send video/multimedia data to display 245 for simultaneous display. In an alternate embodiment, it may be assumed that the remote display is better than display 245. In such an embodiment, control processor 210

'590 Patent Claim Limitation	Tee '758 Exemplary Disclosure
	may select the remote display (with or without operator permission) without comparing parameters associated with display 245 and the remote display. Tee '758 at ¶ 37 FIG. 3 depicts flow diagram 300, which illustrates the operation of exemplary mobile terminal 110 and a remote display device according to one embodiment of the disclosure. Initially, mobile terminal 110 accesses base station 120 via an air interface (e.g., transceiver 201 or 202) and initiates a video/multimedia download from server 150 (process step 305). Alternatively, mobile terminal 110 may play back video/multimedia data stored in video/multimedia file 280. At some point, mobile terminal 110 detects the presence of a remote display device (e.g., television 131) via another air interface (e.g., transceiver 202 or 203) and establishes a wireless link with the remote display device (process step 310), with the authorization of the mobile terminal user. Tee '758 at ¶ 38 Mobile terminal 110 then requests the capabilities of the remote display device and compares the capabilities of the remote display device and local display 245 (process step 315). Mobile terminal 110 may prompt the operator to select the remote display device (process step 320). Assuming the remote display device is selected, mobile terminal 110 then forwards (or relays or re-transmits) the video stream from base station 120 (or video/multimedia file 280) to the remote display device (process step 325). Optionally, mobile terminal 110 may wirelessly communicate with a remote user input device, such as keyboard 133 process step 330). Optionally, if video/multimedia application program 290 is a video conferencing application, mobile terminal 110 receives via the short-range air interface video/multimedia data from a remote video camera and relays the camera video data to base station 120 (process step 335). To the extent Maxell contends Tee '758 does not disclose this limitation, a person of ordinary skill in the art would have readily arrived at this limitation by combining or modifying it in view of their general knowledge and/or the prior art references disclosed in the corresponding section of Samsung's Invalidity Contentions.
[9j] receiving, via the second or third radio communication circuits a signal from the internet indicating that an update for an operating system is available;	Tee '758 discloses “receiving, via the second or third radio communication circuits a signal from the internet indicating that an update for an operating system is available.” For example: Tee '758 at ¶ 25 FIG. 2 illustrates exemplary mobile terminal 110 in greater detail according to an exemplary embodiment of the disclosure. Mobile terminal 110 comprises wide-area network (WAN) transceiver (X-CVR) 201,

'590 Patent Claim Limitation	Tee '758 Exemplary Disclosure
	wireless local area network (WLAN) transceiver (X-CVR) 202, and personal area network (PAN) transceiver (X-CVR) 203. In an embodiment, only one of WLAN transceiver 202 and PAN transceiver 203 may be employed. Mobile terminal 110 also comprises control processor 210, memory 215, speaker 225, microphone 230, input/output interface (I/O IF) 235, keypad 240 and display 245. Memory 215 stores basic operating system (OS) program 250, display select program 260, video conversion program 270, video/multimedia file 280, and one or more video application programs 290. Display select program 260 comprises local display parameters file 261 and remote display parameters file 262. To the extent Maxell contends Tee '758 does not disclose this limitation, a person of ordinary skill in the art would have readily arrived at this limitation by combining or modifying it in view of their general knowledge and/or the prior art references disclosed in the corresponding section of Samsung's Invalidity Contentions.
[9k] executing the update process; and storing an updated operating system after execution of the update process.	Tee '758 discloses "executing the update process; and storing an updated operating system after execution of the update process." For example: Tee '758 at ¶ 25 FIG. 2 illustrates exemplary mobile terminal 110 in greater detail according to an exemplary embodiment of the disclosure. Mobile terminal 110 comprises wide-area network (WAN) transceiver (X-CVR) 201, wireless local area network (WLAN) transceiver (X-CVR) 202, and personal area network (PAN) transceiver (X-CVR) 203. In an embodiment, only one of WLAN transceiver 202 and PAN transceiver 203 may be employed. Mobile terminal 110 also comprises control processor 210, memory 215, speaker 225, microphone 230, input/output interface (I/O IF) 235, keypad 240 and display 245. Memory 215 stores basic operating system (OS) program 250, display select program 260, video conversion program 270, video/multimedia file 280, and one or more video application programs 290. Display select program 260 comprises local display parameters file 261 and remote display parameters file 262. To the extent Maxell contends Tee '758 does not disclose this limitation, a person of ordinary skill in the art would have readily arrived at this limitation by combining or modifying it in view of their general knowledge and/or the prior art references disclosed in the corresponding section of Samsung's Invalidity Contentions.
[10pre] 10. A method, comprising:	The preamble is not limiting.

'590 Patent Claim Limitation	Tee '758 Exemplary Disclosure
[10a] implementing a first transmission scheme having a first modulation scheme and a first transmission frequency band;	Tee '758 at Figure 1  FIG. 1

Tee '758 at Figure 2

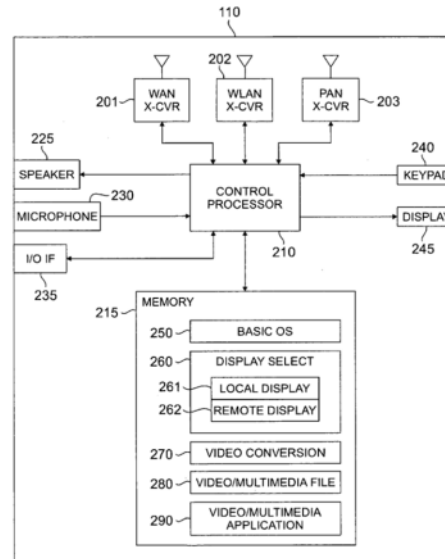


FIG. 2

Tee '758 at ¶ 6

A mobile terminal is provided. According to an advantageous embodiment, the mobile terminal comprises a local display capable of displaying multimedia data, a controller capable of transmitting the multimedia data to the local display, and a first transceiver capable of communicating with a remote display device. The controller is capable of comparing display parameter information associated with the external display device to display parameter information associated with the local display and, in response to the comparison, transmitting the multimedia data to the external display device via the first transceiver.

Tee '758 at ¶ 17

Generally, the first wireless interface supports mobile wireless communications, including, but not limited to IS-2000, 1xEV-DO, 1xEV-DV, GSM/GPRS/EDGE, 3GPP UTRAN, HSDPA/HSUPA, 3GPP EUTRAN, TD-CDMA, WiBro, WiMAX, IEEE-802.16x, IEEE-802.20, and IEEE-802.11x (e.g., WiFi) in a hotspot environment. The second wireless interface typically supports shorter range wireless communications, including, but not limited to IEEE-802.15.3x, MB-OFDM, UWB, Wireless USB, IEEE-802.11x (or WiFi), and a Bluetooth standard that supports high throughput applications

Tee '758 at ¶ 18

An exemplary mobile terminal may be used for mobile communications and as a gateway for a short-range wireless network, also called a personal area network (PAN). The mobile terminal may support a variety of mobile applications, including voice, multimedia (i.e., video, graphics, text, and audio downloads), video conferencing, web browsing, file download, VPN and Internet gaming. Advantageously, when the mobile terminal is near a higher quality display (e.g., a TV screen), the mobile terminal relays its video data to the external display device as well as to its internal display. This enables the operator of the mobile terminal to view the information on the higher quality display device, and to share the displayed information with other people at the same location, e.g., in a video conference call, or watching the latest broadcasting and streaming of News or events of common interests. Note that in the latter example, the source of information could be a remote Internet web server instead of a conventional TV broadcasting station. A remote Internet web server does not have the same geographical coverage limit as a conventional TV broadcasting station. In the case of group video conferencing using, for example, a digital camera phone, it would be more practical and ergonomically correct to have the received video data displayed on an external screen, while the phone camera captures and transmits the local user images.

Tee '758 at ¶ 20

Mobile terminal 110 is capable of communicating with one or more types of wireless wide-area networks (WANs), including conventional cellular networks and wireless local area networks (WLANs). By way of example, mobile terminal 110 may communicate with base station (BS) 120, which may be associated with a CDMA2000/1xEV-DO/1xEV-DV network, a GSM/GPRS/EDGE network, an IEEE-802.16x network, or the like. In other embodiments, base station 120 may communicate according to such wireless interface standards, or their evolutions, as 1xEV-DO, 1xEV-DV, GSM/GPRS/EDGE, 3GPP UTRAN, HSDPA/HSUPA, 3GPP EUTRAN, TD-CDMA, WiBro, WiMAX, IEEE-802.20, or IEEE-802.11x, among others. Base station 120 provides mobile terminal 110 with access to voice networks, such as the public switched telephone network (PSTN), and to data networks, including, for example, the Internet or proprietary Internet protocol (IP) networks. In the illustrated embodiment, BS 120 provides mobile terminal 110 with access to server 150 via IP network 140.

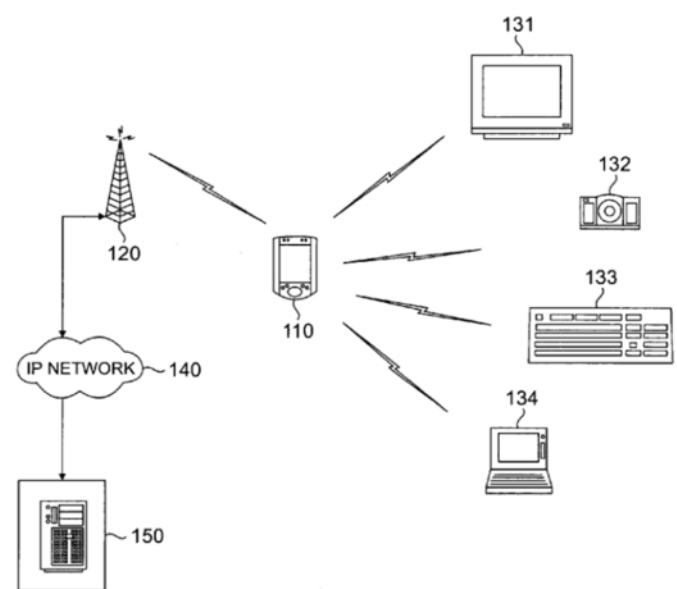
Tee '758 at ¶ 21

Mobile terminal 110 is also capable of communicating with one or more types of external (or remote) devices via a short-range wireless interface standard, such as IEEE-802.11x, ultra-wideband (UWB), IEEE-802.15.3x, MB-OFDM, Wireless USB, or a Bluetooth standard that supports high throughput applications, among others. It is assumed for the purposes of this disclosure that any such remote device

'590 Patent Claim Limitation	Tee '758 Exemplary Disclosure
	comprises a wireless transceiver that can communicate with mobile terminal 110 in order to establish a personal area network (PAN) connection. By way of example, mobile terminal 110 may communicate with television 131 (or computer monitor 131), projector 132, keyboard 133, and laptop (or handheld) personal computer (PC) 134. If the remote device is capable of displaying video (e.g., television 131), it is assumed that the wireless transceiver of the remote device supports a relatively high data rate that is suitable for video applications and/or multimedia applications. Tee '758 at ¶ 22 According to an advantageous embodiment, mobile terminal 110 may relay a video stream to a remote device in order to allow the operator of mobile terminal 110 to view the video on a better display. By way of example, mobile terminal 110 may be receiving streaming video data from server 150 via IP network 140 and base station 120. The streaming video is displayed on the display of mobile terminal 110. At some point, mobile terminal 110 may be located near to television 131 and establish a wireless communication link via the short-range wireless protocol (e.g., IEEE-802.11x/802.15.3x) with television 131. Mobile terminal 110 may then request information from television 131 regarding the capabilities of the display screen of television 131. Tee '758 at ¶ 24 Advantageously, mobile terminal 110 is also capable of establishing a communication link with keyboard 133 (or another input device such as an electronic notepad) via the short-range PAN connection in order to allow the operator of mobile terminal 110 to use keyboard 133 (or the other input device) in lieu of the keyboard or other control buttons on mobile terminal 110. By way of example, mobile terminal 110 may establish a Bluetooth connection to keyboard 133 in order to allow the operator to use keyboard 133 to control mobile terminal 110. In this scenario, the external keyboard, external display and the mobile terminal are connected in the form of a conventional computer, with air interface 1 connecting the computer (with the MT playing the role of the computing unit) to the Internet, and air interface 2 or 3 connecting the computer to the external keyboard and display. If air interface 2 can support both connections between the MT and keyboard or display simultaneously, it is not necessary to have air interface 3. Tee '758 at ¶ 25 FIG. 2 illustrates exemplary mobile terminal 110 in greater detail according to an exemplary embodiment of the disclosure. Mobile terminal 110 comprises wide-area network (WAN) transceiver (X-CVR) 201, wireless local area network (WLAN) transceiver (X-CVR) 202, and personal area network (PAN) transceiver (X-CVR) 203. In an embodiment, only one of WLAN transceiver 202 and PAN transceiver

'590 Patent Claim Limitation	Tee '758 Exemplary Disclosure
	203 may be employed. Mobile terminal 110 also comprises control processor 210, memory 215, speaker 225, microphone 230, input/output interface (I/O IF) 235, keypad 240 and display 245. Memory 215 stores basic operating system (OS) program 250, display select program 260, video conversion program 270, video/multimedia file 280, and one or more video application programs 290. Display select program 260 comprises local display parameters file 261 and remote display parameters file 262. Tee '758 at ¶ 26 Control processor 210 and memory 215 function as a controller that controls the overall operation of mobile terminal 110. Control processor 210 executes basic OS program 250 in order to control, among other things, transceivers 201, 202 and 203. Control processor 210 receives operator inputs from keypad 240 or another user input device (not shown) and displays data on display 245. If mobile terminal 110 is, for example, a cell phone, control processor 210 can receive a voice signal from microphone 230 and can send voice signals to speaker 225. I/O interface 235 allows control processor 210 to be coupled to, and communicate with, another device, including, for example, a docking station, a data cord, an operator input device, or the like. Tee '758 at ¶ 27 In the exemplary embodiment, control processor 210 uses WAN transceiver 201 to communicate over a wide area network. For example, WAN transceiver 201 may be a GSM/GPRS/EDGE transceiver, a CDMA2000/1xEV-DO transceiver, or an IEEE-802.16x transceiver that communicates with base station 120 of a wide-area network. Control processor 210 may use WLAN transceiver 202 to communicate in a wireless local area network (WLAN) environment, such as an office WLAN that may have a coverage area or range of several hundred feet. By way of example, WLAN transceiver 202 may be an IEEE-802.11x transceiver. Control processor 210 may use PAN transceiver 203 to communicate in a personal area network (PAN) environment, such as a Bluetooth or IEEE-802.15.3 communication link that may have a coverage area or range around 10-20 meters. Tee '758 at ¶ 28 In the illustrated embodiment in FIG. 2, three distinct transceivers are shown. However, this is by way of example only. Tee '758 at ¶ 28 In an alternate embodiment, mobile terminal 110 may communicate with BS 120 via a first air interface (or wireless interface) and with an external device that has a display screen via a second air interface (or wireless interface). Thus, mobile terminal 110 may comprise only two transceivers. Advantageously, one

'590 Patent Claim Limitation	Tee '758 Exemplary Disclosure
	or more of transceivers 201-203 may be based on software-defined radio (SDR) technology and therefore may be capable of communicating according to more than one wireless interface standard. Tee '758 at ¶ 36 Under control of display select program 260, control processor 210 compares the parameters in remote display parameters file 262 to the parameters in local display parameters file 261 and selects the display best suited to video/multimedia application program 290. If the display of the external device is selected, control processor 210 transfers the video/multimedia data to the appropriate one of transceivers 202 and 203. Control processor 210 may prompt the operator of mobile terminal 110 for permission to transmit video/multimedia data to the remote display device. Control processor 210 may also continue to send video/multimedia data to display 245 for simultaneous display. In an alternate embodiment, it may be assumed that the remote display is better than display 245. In such an embodiment, control processor 210 may select the remote display (with or without operator permission) without comparing parameters associated with display 245 and the remote display. Tee '758 at claim 1 1. A mobile terminal comprising: a local display capable of displaying multimedia data; a controller capable of transmitting the multimedia data to the local display; and a first transceiver capable of communicating with a remote display device, wherein the controller is capable of comparing display parameter information associated with the remote display device to display parameter information associated with the local display and, in response to the comparison, transmitting the multimedia data to the remote display device via the first transceiver. Tee '758 at claims 15–17 15. The mobile terminal as set forth in claim 9, wherein the first transceiver comprises a personal area network transceiver. 16. The mobile terminal as set forth in claim 15, wherein the personal area network transceiver comprises one of: an IEEE-802.15.3x transceiver, an MB-OFDM transceiver, a UWB transceiver, a wireless USB transceiver, an IEEE-802.11x transceiver, and a Bluetooth transceiver. 17. The mobile terminal as set forth in claim 9, wherein the second transceiver comprises one of an IS-2000 transceiver, a 1xEV-DO transceiver, a 1xEV-DV transceiver, a GSM/GPRS/EDGE transceiver, a 3GPP UTRAN transceiver, an HSDPA/HSUPA transceiver, a 3GPP EUTRAN transceiver, a TD-CDMA transceiver, a WiBro transceiver, a WiMAX transceiver, an IEEE-802.16x transceiver, an IEEE-802.20 transceiver, and an IEEE-802.11x transceiver.

'590 Patent Claim Limitation	Tee '758 Exemplary Disclosure
[10b] implementing a second transmission scheme having a second modulation scheme different from the first modulation scheme and a second transmission frequency band different from the first transmission frequency band;	Tee '758 discloses “implementing a second transmission scheme having a second modulation scheme different from the first modulation scheme and a second transmission frequency band different from the first transmission frequency band.” For example: Tee '758 at Figure 1  FIG. 1

Tee '758 at Figure 2

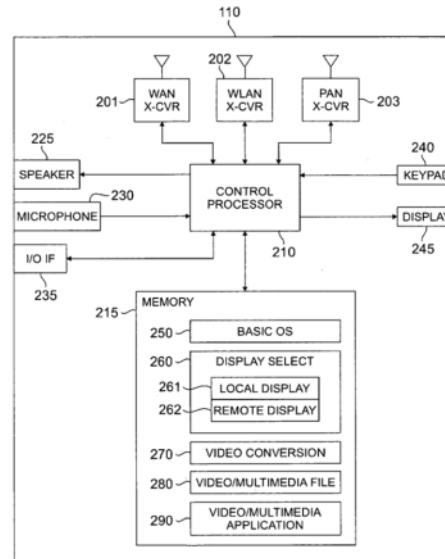


FIG. 2

Tee '758 at ¶ 17

Generally, the first wireless interface supports mobile wireless communications, including, but not limited to IS-2000, 1xEV-DO, 1xEV-DV, GSM/GPRS/EDGE, 3GPP UTRAN, HSDPA/HSUPA, 3GPP EUTRAN, TD-CDMA, WiBro, WiMAX, IEEE-802.16x, IEEE-802.20, and IEEE-802.11x (e.g., WiFi) in a hotspot environment. The second wireless interface typically supports shorter range wireless communications, including, but not limited to IEEE-802.15.3x, MB-OFDM, UWB, Wireless USB, IEEE-802.11x (or WiFi), and a Bluetooth standard that supports high throughput applications

Tee '758 at ¶ 18

An exemplary mobile terminal may be used for mobile communications and as a gateway for a short-range wireless network, also called a personal area network (PAN). The mobile terminal may support a variety of mobile applications, including voice, multimedia (i.e., video, graphics, text, and audio downloads), video conferencing, web browsing, file download, VPN and Internet gaming. Advantageously, when the mobile terminal is near a higher quality display (e.g., a TV screen), the mobile terminal relays its video data to the external display device as well as to its internal display. This enables the operator of the mobile terminal to view the information on the higher quality display device, and to share the displayed information with other people at the same location, e.g., in a video conference call, or

'590 Patent Claim Limitation	Tee '758 Exemplary Disclosure
	watching the latest broadcasting and streaming of News or events of common interests. Note that in the latter example, the source of information could be a remote Internet web server instead of a conventional TV broadcasting station. A remote Internet web server does not have the same geographical coverage limit as a conventional TV broadcasting station. In the case of group video conferencing using, for example, a digital camera phone, it would be more practical and ergonomically correct to have the received video data displayed on an external screen, while the phone camera captures and transmits the local user images. Tee '758 at ¶ 20 Mobile terminal 110 is capable of communicating with one or more types of wireless wide-area networks (WANs), including conventional cellular networks and wireless local area networks (WLANs). By way of example, mobile terminal 110 may communicate with base station (BS) 120, which may be associated with a CDMA2000/1xEV-DO/1xEV-DV network, a GSM/GPRS/EDGE network, an IEEE-802.16x network, or the like. In other embodiments, base station 120 may communicate according to such wireless interface standards, or their evolutions, as 1xEV-DO, 1xEV-DV, GSM/GPRS/EDGE, 3GPP UTRAN, HSDPA/HSUPA, 3GPP EUTRAN, TD-CDMA, WiBro, WiMAX, IEEE-802.20, or IEEE-802.11x, among others. Base station 120 provides mobile terminal 110 with access to voice networks, such as the public switched telephone network (PSTN), and to data networks, including, for example, the Internet or proprietary Internet protocol (IP) networks. In the illustrated embodiment, BS 120 provides mobile terminal 110 with access to server 150 via IP network 140. Tee '758 at ¶ 21 Mobile terminal 110 is also capable of communicating with one or more types of external (or remote) devices via a short-range wireless interface standard, such as IEEE-802.11x, ultra-wideband (UWB), IEEE-802.15.3x, MB-OFDM, Wireless USB, or a Bluetooth standard that supports high throughput applications, among others. It is assumed for the purposes of this disclosure that any such remote device comprises a wireless transceiver that can communicate with mobile terminal 110 in order to establish a personal area network (PAN) connection. By way of example, mobile terminal 110 may communicate with television 131 (or computer monitor 131), projector 132, keyboard 133, and laptop (or handheld) personal computer (PC) 134. If the remote device is capable of displaying video (e.g., television 131), it is assumed that the wireless transceiver of the remote device supports a relatively high data rate that is suitable for video applications and/or multimedia applications.

Tee '758 at ¶ 24

Advantageously, mobile terminal 110 is also capable of establishing a communication link with keyboard 133 (or another input device such as an electronic notepad) via the short-range PAN connection in order to allow the operator of mobile terminal 110 to use keyboard 133 (or the other input device) in lieu of the keyboard or other control buttons on mobile terminal 110. By way of example, mobile terminal 110 may establish a Bluetooth connection to keyboard 133 in order to allow the operator to use keyboard 133 to control mobile terminal 110. In this scenario, the external keyboard, external display and the mobile terminal are connected in the form of a conventional computer, with air interface 1 connecting the computer (with the MT playing the role of the computing unit) to the Internet, and air interface 2 or 3 connecting the computer to the external keyboard and display. If air interface 2 can support both connections between the MT and keyboard or display simultaneously, it is not necessary to have air interface 3.

Tee '758 at ¶ 25

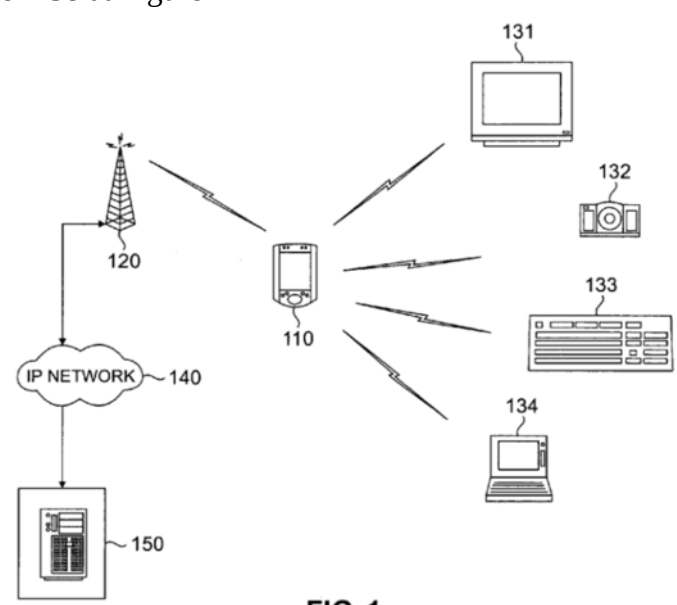
FIG. 2 illustrates exemplary mobile terminal 110 in greater detail according to an exemplary embodiment of the disclosure. Mobile terminal 110 comprises wide-area network (WAN) transceiver (X-CVR) 201, wireless local area network (WLAN) transceiver (X-CVR) 202, and personal area network (PAN) transceiver (X-CVR) 203. In an embodiment, only one of WLAN transceiver 202 and PAN transceiver 203 may be employed. Mobile terminal 110 also comprises control processor 210, memory 215, speaker 225, microphone 230, input/output interface (I/O IF) 235, keypad 240 and display 245. Memory 215 stores basic operating system (OS) program 250, display select program 260, video conversion program 270, video/multimedia file 280, and one or more video application programs 290. Display select program 260 comprises local display parameters file 261 and remote display parameters file 262.

Tee '758 at ¶ 26

Control processor 210 and memory 215 function as a controller that controls the overall operation of mobile terminal 110. Control processor 210 executes basic OS program 250 in order to control, among other things, transceivers 201, 202 and 203. Control processor 210 receives operator inputs from keypad 240 or another user input device (not shown) and displays data on display 245. If mobile terminal 110 is, for example, a cell phone, control processor 210 can receive a voice signal from microphone 230 and can send voice signals to speaker 225. I/O interface 235 allows control processor 210 to be coupled to, and communicate with, another device, including, for example, a docking station, a data cord, an operator input device, or the like.

Tee '758 at ¶ 27

'590 Patent Claim Limitation	Tee '758 Exemplary Disclosure
	In the exemplary embodiment, control processor 210 uses WAN transceiver 201 to communicate over a wide area network. For example, WAN transceiver 201 may be a GSM/GPRS/EDGE transceiver, a CDMA2000/1xEV-DO transceiver, or an IEEE-802.16x transceiver that communicates with base station 120 of a wide-area network. Control processor 210 may use WLAN transceiver 202 to communicate in a wireless local area network (WLAN) environment, such as an office WLAN that may have a coverage area or range of several hundred feet. By way of example, WLAN transceiver 202 may be an IEEE-802.11x transceiver. Control processor 210 may use PAN transceiver 203 to communicate in a personal area network (PAN) environment, such as a Bluetooth or IEEE-802.15.3 communication link that may have a coverage area or range around 10-20 meters. Tee '758 at ¶ 28 In the illustrated embodiment in FIG. 2, three distinct transceivers are shown. However, this is by way of example only. Tee '758 at ¶ 28 In an alternate embodiment, mobile terminal 110 may communicate with BS 120 via a first air interface (or wireless interface) and with an external device that has a display screen via a second air interface (or wireless interface). Thus, mobile terminal 110 may comprise only two transceivers. Advantageously, one or more of transceivers 201-203 may be based on software-defined radio (SDR) technology and therefore may be capable of communicating according to more than one wireless interface standard. Tee '758 at claim 9 9. The mobile terminal as set forth in claim 1, further comprising a second transceiver capable of communicating with a wireless network. Tee '758 at claims 15–17 15. The mobile terminal as set forth in claim 9, wherein the first transceiver comprises a personal area network transceiver. 16. The mobile terminal as set forth in claim 15, wherein the personal area network transceiver comprises one of: an IEEE-802.15.3x transceiver, an MB-OFDM transceiver, a UWB transceiver, a wireless USB transceiver, an IEEE-802.11x transceiver, and a Bluetooth transceiver. 17. The mobile terminal as set forth in claim 9, wherein the second transceiver comprises one of an IS-2000 transceiver, a 1xEV-DO transceiver, a 1xEV-DV transceiver, a GSM/GPRS/EDGE transceiver, a 3GPP UTRAN transceiver, an HSDPA/HSUPA transceiver, a 3GPP EUTRAN transceiver, a TD-CDMA

'590 Patent Claim Limitation	Tee '758 Exemplary Disclosure
	transceiver, a WiBro transceiver, a WiMAX transceiver, an IEEE-802.16x transceiver, an IEEE-802.20 transceiver, and an IEEE-802.11x transceiver. To the extent Maxell contends Tee '758 does not disclose this limitation, a person of ordinary skill in the art would have readily arrived at this limitation by combining or modifying it in view of their general knowledge and/or the prior art references disclosed in the corresponding section of Samsung's Invalidity Contentions.
[10c] receiving video information by radio using the first transmission frequency band, via a first radio communication circuit and connecting by radio to an internet or a home network to transmit and receive information using the second transmission frequency band, via a second radio communication circuit;	Tee '758 discloses “receiving video information by radio using the first transmission frequency band, via a first radio communication circuit and connecting by radio to an internet or a home network to transmit and receive information using the second transmission frequency band, via a second radio communication circuit.” For example: Tee '758 at Figure 1  FIG. 1

Tee '758 at Figure 2

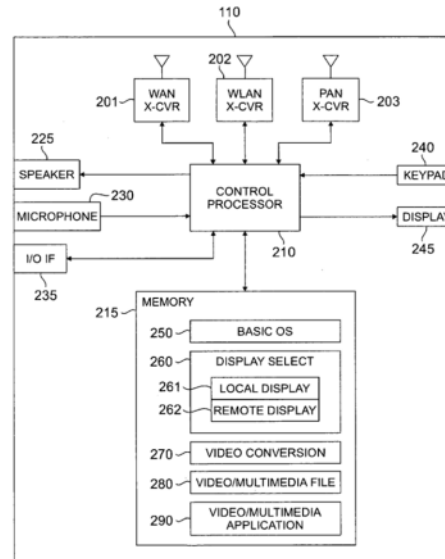


FIG. 2

Tee '758 at ¶ 6

A mobile terminal is provided. According to an advantageous embodiment, the mobile terminal comprises a local display capable of displaying multimedia data, a controller capable of transmitting the multimedia data to the local display, and a first transceiver capable of communicating with a remote display device. The controller is capable of comparing display parameter information associated with the external display device to display parameter information associated with the local display and, in response to the comparison, transmitting the multimedia data to the external display device via the first transceiver.

Tee '758 at ¶ 17

Generally, the first wireless interface supports mobile wireless communications, including, but not limited to IS-2000, 1xEV-DO, 1xEV-DV, GSM/GPRS/EDGE, 3GPP UTRAN, HSDPA/HSUPA, 3GPP EUTRAN, TD-CDMA, WiBro, WiMAX, IEEE-802.16x, IEEE-802.20, and IEEE-802.11x (e.g., WiFi) in a hotspot environment. The second wireless interface typically supports shorter range wireless communications, including, but not limited to IEEE-802.15.3x, MB-OFDM, UWB, Wireless USB, IEEE-802.11x (or WiFi), and a Bluetooth standard that supports high throughput applications

Tee '758 at ¶ 18

An exemplary mobile terminal may be used for mobile communications and as a gateway for a short-range wireless network, also called a personal area network (PAN). The mobile terminal may support a variety of mobile applications, including voice, multimedia (i.e., video, graphics, text, and audio downloads), video conferencing, web browsing, file download, VPN and Internet gaming. Advantageously, when the mobile terminal is near a higher quality display (e.g., a TV screen), the mobile terminal relays its video data to the external display device as well as to its internal display. This enables the operator of the mobile terminal to view the information on the higher quality display device, and to share the displayed information with other people at the same location, e.g., in a video conference call, or watching the latest broadcasting and streaming of News or events of common interests. Note that in the latter example, the source of information could be a remote Internet web server instead of a conventional TV broadcasting station. A remote Internet web server does not have the same geographical coverage limit as a conventional TV broadcasting station. In the case of group video conferencing using, for example, a digital camera phone, it would be more practical and ergonomically correct to have the received video data displayed on an external screen, while the phone camera captures and transmits the local user images.

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Tee '758 at ¶ 21

Mobile terminal 110 is also capable of communicating with one or more types of external (or remote) devices via a short-range wireless interface standard, such as IEEE-802.11x, ultra-wideband (UWB), IEEE-802.15.3x, MB-OFDM, Wireless USB, or a Bluetooth standard that supports high throughput applications, among others. It is assumed for the purposes of this disclosure that any such remote device

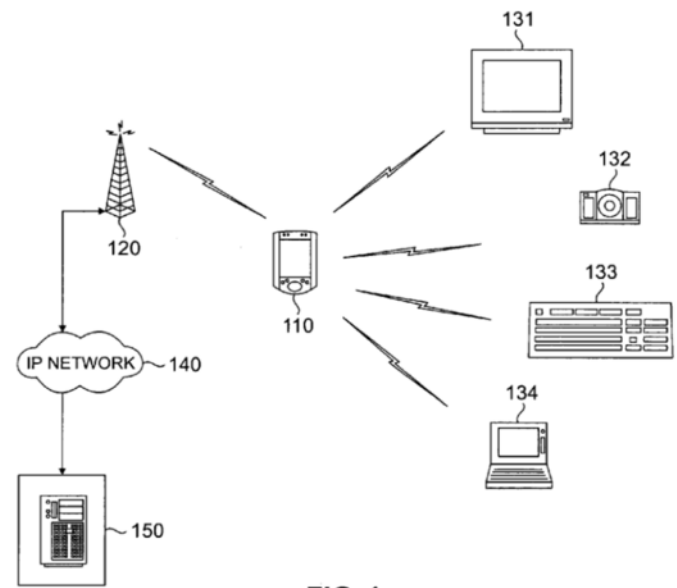
'590 Patent Claim Limitation	Tee '758 Exemplary Disclosure
	comprises a wireless transceiver that can communicate with mobile terminal 110 in order to establish a personal area network (PAN) connection. By way of example, mobile terminal 110 may communicate with television 131 (or computer monitor 131), projector 132, keyboard 133, and laptop (or handheld) personal computer (PC) 134. If the remote device is capable of displaying video (e.g., television 131), it is assumed that the wireless transceiver of the remote device supports a relatively high data rate that is suitable for video applications and/or multimedia applications. Tee '758 at ¶ 22 According to an advantageous embodiment, mobile terminal 110 may relay a video stream to a remote device in order to allow the operator of mobile terminal 110 to view the video on a better display. By way of example, mobile terminal 110 may be receiving streaming video data from server 150 via IP network 140 and base station 120. The streaming video is displayed on the display of mobile terminal 110. At some point, mobile terminal 110 may be located near to television 131 and establish a wireless communication link via the short-range wireless protocol (e.g., IEEE-802.11x/802.15.3x) with television 131. Mobile terminal 110 may then request information from television 131 regarding the capabilities of the display screen of television 131. Tee '758 at ¶ 24 Advantageously, mobile terminal 110 is also capable of establishing a communication link with keyboard 133 (or another input device such as an electronic notepad) via the short-range PAN connection in order to allow the operator of mobile terminal 110 to use keyboard 133 (or the other input device) in lieu of the keyboard or other control buttons on mobile terminal 110. By way of example, mobile terminal 110 may establish a Bluetooth connection to keyboard 133 in order to allow the operator to use keyboard 133 to control mobile terminal 110. In this scenario, the external keyboard, external display and the mobile terminal are connected in the form of a conventional computer, with air interface 1 connecting the computer (with the MT playing the role of the computing unit) to the Internet, and air interface 2 or 3 connecting the computer to the external keyboard and display. If air interface 2 can support both connections between the MT and keyboard or display simultaneously, it is not necessary to have air interface 3. Tee '758 at ¶ 25 FIG. 2 illustrates exemplary mobile terminal 110 in greater detail according to an exemplary embodiment of the disclosure. Mobile terminal 110 comprises wide-area network (WAN) transceiver (X-CVR) 201, wireless local area network (WLAN) transceiver (X-CVR) 202, and personal area network (PAN) transceiver (X-CVR) 203. In an embodiment, only one of WLAN transceiver 202 and PAN transceiver

'590 Patent Claim Limitation	Tee '758 Exemplary Disclosure
	203 may be employed. Mobile terminal 110 also comprises control processor 210, memory 215, speaker 225, microphone 230, input/output interface (I/O IF) 235, keypad 240 and display 245. Memory 215 stores basic operating system (OS) program 250, display select program 260, video conversion program 270, video/multimedia file 280, and one or more video application programs 290. Display select program 260 comprises local display parameters file 261 and remote display parameters file 262. Tee '758 at ¶ 26 Control processor 210 and memory 215 function as a controller that controls the overall operation of mobile terminal 110. Control processor 210 executes basic OS program 250 in order to control, among other things, transceivers 201, 202 and 203. Control processor 210 receives operator inputs from keypad 240 or another user input device (not shown) and displays data on display 245. If mobile terminal 110 is, for example, a cell phone, control processor 210 can receive a voice signal from microphone 230 and can send voice signals to speaker 225. I/O interface 235 allows control processor 210 to be coupled to, and communicate with, another device, including, for example, a docking station, a data cord, an operator input device, or the like. Tee '758 at ¶ 27 In the exemplary embodiment, control processor 210 uses WAN transceiver 201 to communicate over a wide area network. For example, WAN transceiver 201 may be a GSM/GPRS/EDGE transceiver, a CDMA2000/1xEV-DO transceiver, or an IEEE-802.16x transceiver that communicates with base station 120 of a wide-area network. Control processor 210 may use WLAN transceiver 202 to communicate in a wireless local area network (WLAN) environment, such as an office WLAN that may have a coverage area or range of several hundred feet. By way of example, WLAN transceiver 202 may be an IEEE-802.11x transceiver. Control processor 210 may use PAN transceiver 203 to communicate in a personal area network (PAN) environment, such as a Bluetooth or IEEE-802.15.3 communication link that may have a coverage area or range around 10-20 meters. Tee '758 at ¶ 28 In the illustrated embodiment in FIG. 2, three distinct transceivers are shown. However, this is by way of example only. Tee '758 at ¶ 28 In an alternate embodiment, mobile terminal 110 may communicate with BS 120 via a first air interface (or wireless interface) and with an external device that has a display screen via a second air interface (or wireless interface). Thus, mobile terminal 110 may comprise only two transceivers. Advantageously, one

'590 Patent Claim Limitation	Tee '758 Exemplary Disclosure
	or more of transceivers 201-203 may be based on software-defined radio (SDR) technology and therefore may be capable of communicating according to more than one wireless interface standard. Tee '758 at ¶ 29 Additionally, depending on the distances involved, mobile terminal 110 may receive an incoming video and/or multimedia stream from any one of WAN transceiver 201, WLAN transceiver 202, and PAN transceiver 203 and may relay the video and/or multimedia stream to an external device using, for example, WLAN transceiver 202 or PAN transceiver 203. Essentially, this air interface functions similarly to I/O interface 235, but over the wireless link. Tee '758 at ¶ 38 Mobile terminal 110 then requests the capabilities of the remote display device and compares the capabilities of the remote display device and local display 245 (process step 315). Mobile terminal 110 may prompt the operator to select the remote display device (process step 320). Assuming the remote display device is selected, mobile terminal 110 then forwards (or relays or re-transmits) the video stream from base station 120 (or video/multimedia file 280) to the remote display device (process step 325). Optionally, mobile terminal 110 may wirelessly communicate with a remote user input device, such as keyboard 133 process step 330). Optionally, if video/multimedia application program 290 is a video conferencing application, mobile terminal 110 receives via the short-range air interface video/multimedia data from a remote video camera and relays the camera video data to base station 120 (process step 335). Tee '758 at claim 1 1. A mobile terminal comprising: a local display capable of displaying multimedia data; a controller capable of transmitting the multimedia data to the local display; and a first transceiver capable of communicating with a remote display device, wherein the controller is capable of comparing display parameter information associated with the remote display device to display parameter information associated with the local display and, in response to the comparison, transmitting the multimedia data to the remote display device via the first transceiver. Tee '758 at claim 9 9. The mobile terminal as set forth in claim 1, further comprising a second transceiver capable of communicating with a wireless network.

'590 Patent Claim Limitation	Tee '758 Exemplary Disclosure
	Tee '758 at claims 15–17 15. The mobile terminal as set forth in claim 9, wherein the first transceiver comprises a personal area network transceiver. 16. The mobile terminal as set forth in claim 15, wherein the personal area network transceiver comprises one of: an IEEE-802.15.3x transceiver, an MB-OFDM transceiver, a UWB transceiver, a wireless USB transceiver, an IEEE-802.11x transceiver, and a Bluetooth transceiver. 17. The mobile terminal as set forth in claim 9, wherein the second transceiver comprises one of an IS-2000 transceiver, a 1xEV-DO transceiver, a 1xEV-DV transceiver, a GSM/GPRS/EDGE transceiver, a 3GPP UTRAN transceiver, an HSDPA/HSUPA transceiver, a 3GPP EUTRAN transceiver, a TD-CDMA transceiver, a WiBro transceiver, a WiMAX transceiver, an IEEE-802.16x transceiver, an IEEE-802.20 transceiver, and an IEEE-802.11x transceiver. To the extent Maxell contends Tee '758 does not disclose this limitation, a person of ordinary skill in the art would have readily arrived at this limitation by combining or modifying it in view of their general knowledge and/or the prior art references disclosed in the corresponding section of Samsung's Invalidity Contentions.
[10d] compressing the video information received by the first radio communication circuit using a first compression scheme;	Tee '758 discloses “compressing the video information received by the first radio communication circuit using a first compression scheme.” For example: Tee '758 at ¶ 18 An exemplary mobile terminal may be used for mobile communications and as a gateway for a short-range wireless network, also called a personal area network (PAN). The mobile terminal may support a variety of mobile applications, including voice, multimedia (i.e., video, graphics, text, and audio downloads), video conferencing, web browsing, file download, VPN and Internet gaming. Advantageously, when the mobile terminal is near a higher quality display (e.g., a TV screen), the mobile terminal relays its video data to the external display device as well as to its internal display. This enables the operator of the mobile terminal to view the information on the higher quality display device, and to share the displayed information with other people at the same location, e.g., in a video conference call, or watching the latest broadcasting and streaming of News or events of common interests. Note that in the latter example, the source of information could be a remote Internet web server instead of a conventional TV broadcasting station. A remote Internet web server does not have the same geographical coverage limit as a conventional TV broadcasting station. In the case of group video conferencing using, for example, a digital camera phone, it would be more practical and ergonomically correct to have the

'590 Patent Claim Limitation	Tee '758 Exemplary Disclosure
	received video data displayed on an external screen, while the phone camera captures and transmits the local user images. Tee '758 at ¶ 35 Under control of display select program 260, control processor 210 is capable of querying the remote device (e.g., television 131) to determine the quality of the display associated with the remote device, for example, by requesting the remote device to transmit parameters or attributes describing the capabilities of the remote device. If the attributes of the external display device are available, the data can be formatted accordingly before transmission through the second interface to the display device. However, it is not always necessary for the remote device to have the capability to respond to such an inquiry. Any standard protocol that is supported by the air interface would be sufficient for the mobile terminal to transmit the video data, and the similar air interface of the display device to receive, demodulate and decode the data. Nevertheless, it is assumed that the external display device has the capability to decode the received data and convert it to a signal/pixel format that is supported by the display mechanism, e.g., a MPEG4 decoder, and/or a Digital-to-Analog converter. Control processor 210 receives the display parameters associated with the remote device and stores these parameters in remote display parameters file 262. The parameters associated with display 245 are stored in local display parameters file 261. The parameter data may include, for example, display size, display type (CRT, LED, etc.), pixel size, refresh rate, and the like. Tee '758 at ¶ 38 Mobile terminal 110 then requests the capabilities of the remote display device and compares the capabilities of the remote display device and local display 245 (process step 315). Mobile terminal 110 may prompt the operator to select the remote display device (process step 320). Assuming the remote display device is selected, mobile terminal 110 then forwards (or relays or re-transmits) the video stream from base station 120 (or video/multimedia file 280) to the remote display device (process step 325). Optionally, mobile terminal 110 may wirelessly communicate with a remote user input device, such as keyboard 133 process step 330). Optionally, if video/multimedia application program 290 is a video conferencing application, mobile terminal 110 receives via the short-range air interface video/multimedia data from a remote video camera and relays the camera video data to base station 120 (process step 335). To the extent Maxell contends Tee '758 does not disclose this limitation, a person of ordinary skill in the art would have readily arrived at this limitation by combining or modifying it in view of their general knowledge and/or the prior art references disclosed in the corresponding section of Samsung's Invalidity Contentions.

'590 Patent Claim Limitation	Tee '758 Exemplary Disclosure
[10e] transmitting, via a third radio communication circuit, information using a third transmission frequency band;	Tee '758 discloses “transmitting, via a third radio communication circuit, information using a third transmission frequency band.” For example: Tee '758 at Figure 1  FIG. 1

Tee '758 at Figure 2

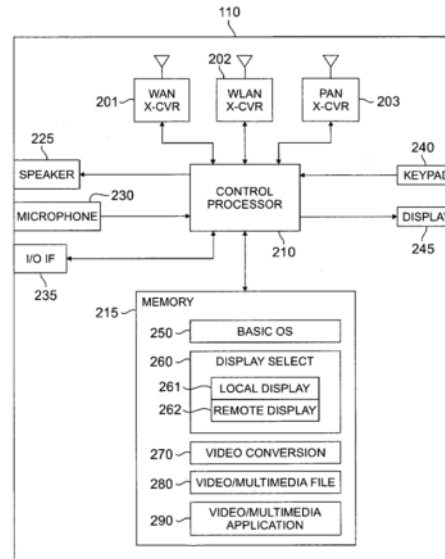


FIG. 2

Tee '758 at ¶ 17

Generally, the first wireless interface supports mobile wireless communications, including, but not limited to IS-2000, 1xEV-DO, 1xEV-DV, GSM/GPRS/EDGE, 3GPP UTRAN, HSDPA/HSUPA, 3GPP EUTRAN, TD-CDMA, WiBro, WiMAX, IEEE-802.16x, IEEE-802.20, and IEEE-802.11x (e.g., WiFi) in a hotspot environment. The second wireless interface typically supports shorter range wireless communications, including, but not limited to IEEE-802.15.3x, MB-OFDM, UWB, Wireless USB, IEEE-802.11x (or WiFi), and a Bluetooth standard that supports high throughput applications

Tee '758 at ¶ 20

Mobile terminal 110 is capable of communicating with one or more types of wireless wide-area networks (WANs), including conventional cellular networks and wireless local area networks (WLANs). By way of example, mobile terminal 110 may communicate with base station (BS) 120, which may be associated with a CDMA2000/1xEV-DO/1xEV-DV network, a GSM/GPRS/EDGE network, an IEEE-802.16x network, or the like. In other embodiments, base station 120 may communicate according to such wireless interface standards, or their evolutions, as 1xEV-DO, 1xEV-DV, GSM/GPRS/EDGE, 3GPP UTRAN, HSDPA/HSUPA, 3GPP EUTRAN, TD-CDMA, WiBro, WiMAX, IEEE-802.20, or IEEE-802.11x, among others. Base station 120 provides mobile terminal 110 with access to voice networks,

'590 Patent Claim Limitation	Tee '758 Exemplary Disclosure
	such as the public switched telephone network (PSTN), and to data networks, including, for example, the Internet or proprietary Internet protocol (IP) networks. In the illustrated embodiment, BS 120 provides mobile terminal 110 with access to server 150 via IP network 140. Tee '758 at ¶ 21 Mobile terminal 110 is also capable of communicating with one or more types of external (or remote) devices via a short-range wireless interface standard, such as IEEE-802.11x, ultra-wideband (UWB), IEEE-802.15.3x, MB-OFDM, Wireless USB, or a Bluetooth standard that supports high throughput applications, among others. It is assumed for the purposes of this disclosure that any such remote device comprises a wireless transceiver that can communicate with mobile terminal 110 in order to establish a personal area network (PAN) connection. By way of example, mobile terminal 110 may communicate with television 131 (or computer monitor 131), projector 132, keyboard 133, and laptop (or handheld) personal computer (PC) 134. If the remote device is capable of displaying video (e.g., television 131), it is assumed that the wireless transceiver of the remote device supports a relatively high data rate that is suitable for video applications and/or multimedia applications. Tee '758 at ¶ 24 Advantageously, mobile terminal 110 is also capable of establishing a communication link with keyboard 133 (or another input device such as an electronic notepad) via the short-range PAN connection in order to allow the operator of mobile terminal 110 to use keyboard 133 (or the other input device) in lieu of the keyboard or other control buttons on mobile terminal 110. By way of example, mobile terminal 110 may establish a Bluetooth connection to keyboard 133 in order to allow the operator to use keyboard 133 to control mobile terminal 110. In this scenario, the external keyboard, external display and the mobile terminal are connected in the form of a conventional computer, with air interface 1 connecting the computer (with the MT playing the role of the computing unit) to the Internet, and air interface 2 or 3 connecting the computer to the external keyboard and display. If air interface 2 can support both connections between the MT and keyboard or display simultaneously, it is not necessary to have air interface 3. Tee '758 at ¶ 25 FIG. 2 illustrates exemplary mobile terminal 110 in greater detail according to an exemplary embodiment of the disclosure. Mobile terminal 110 comprises wide-area network (WAN) transceiver (X-CVR) 201, wireless local area network (WLAN) transceiver (X-CVR) 202, and personal area network (PAN) transceiver (X-CVR) 203. In an embodiment, only one of WLAN transceiver 202 and PAN transceiver 203 may be employed. Mobile terminal 110 also comprises control processor 210, memory 215, speaker

'590 Patent Claim Limitation	Tee '758 Exemplary Disclosure
	225, microphone 230, input/output interface (I/O IF) 235, keypad 240 and display 245. Memory 215 stores basic operating system (OS) program 250, display select program 260, video conversion program 270, video/multimedia file 280, and one or more video application programs 290. Display select program 260 comprises local display parameters file 261 and remote display parameters file 262. Tee '758 at ¶ 26 Control processor 210 and memory 215 function as a controller that controls the overall operation of mobile terminal 110. Control processor 210 executes basic OS program 250 in order to control, among other things, transceivers 201, 202 and 203. Control processor 210 receives operator inputs from keypad 240 or another user input device (not shown) and displays data on display 245. If mobile terminal 110 is, for example, a cell phone, control processor 210 can receive a voice signal from microphone 230 and can send voice signals to speaker 225. I/O interface 235 allows control processor 210 to be coupled to, and communicate with, another device, including, for example, a docking station, a data cord, an operator input device, or the like. Tee '758 at ¶ 27 In the exemplary embodiment, control processor 210 uses WAN transceiver 201 to communicate over a wide area network. For example, WAN transceiver 201 may be a GSM/GPRS/EDGE transceiver, a CDMA2000/1xEV-DO transceiver, or an IEEE-802.16x transceiver that communicates with base station 120 of a wide-area network. Control processor 210 may use WLAN transceiver 202 to communicate in a wireless local area network (WLAN) environment, such as an office WLAN that may have a coverage area or range of several hundred feet. By way of example, WLAN transceiver 202 may be an IEEE-802.11x transceiver. Control processor 210 may use PAN transceiver 203 to communicate in a personal area network (PAN) environment, such as a Bluetooth or IEEE-802.15.3 communication link that may have a coverage area or range around 10-20 meters. Tee '758 at ¶ 28 In the illustrated embodiment in FIG. 2, three distinct transceivers are shown. However, this is by way of example only. Tee '758 at ¶ 28 In an alternate embodiment, mobile terminal 110 may communicate with BS 120 via a first air interface (or wireless interface) and with an external device that has a display screen via a second air interface (or wireless interface). Thus, mobile terminal 110 may comprise only two transceivers. Advantageously, one

'590 Patent Claim Limitation	Tee '758 Exemplary Disclosure
	or more of transceivers 201-203 may be based on software-defined radio (SDR) technology and therefore may be capable of communicating according to more than one wireless interface standard. Tee '758 at claims 15–17 15. The mobile terminal as set forth in claim 9, wherein the first transceiver comprises a personal area network transceiver. 16. The mobile terminal as set forth in claim 15, wherein the personal area network transceiver comprises one of: an IEEE-802.15.3x transceiver, an MB-OFDM transceiver, a UWB transceiver, a wireless USB transceiver, an IEEE-802.11x transceiver, and a Bluetooth transceiver. 17. The mobile terminal as set forth in claim 9, wherein the second transceiver comprises one of an IS-2000 transceiver, a 1xEV-DO transceiver, a 1xEV-DV transceiver, a GSM/GPRS/EDGE transceiver, a 3GPP UTRAN transceiver, an HSDPA/HSUPA transceiver, a 3GPP EUTRAN transceiver, a TD-CDMA transceiver, a WiBro transceiver, a WiMAX transceiver, an IEEE-802.16x transceiver, an IEEE-802.20 transceiver, and an IEEE-802.11x transceiver. To the extent Maxell contends Tee '758 does not disclose this limitation, a person of ordinary skill in the art would have readily arrived at this limitation by combining or modifying it in view of their general knowledge and/or the prior art references disclosed in the corresponding section of Samsung's Invalidity Contentions.
[10f] displaying, via a display circuit, information received by the first radio communication circuit or the second radio communication circuit;	Tee '758 discloses “displaying, via a display circuit, information received by the first radio communication circuit or the second radio communication circuit.” For example:

Tee '758 at Figure 1

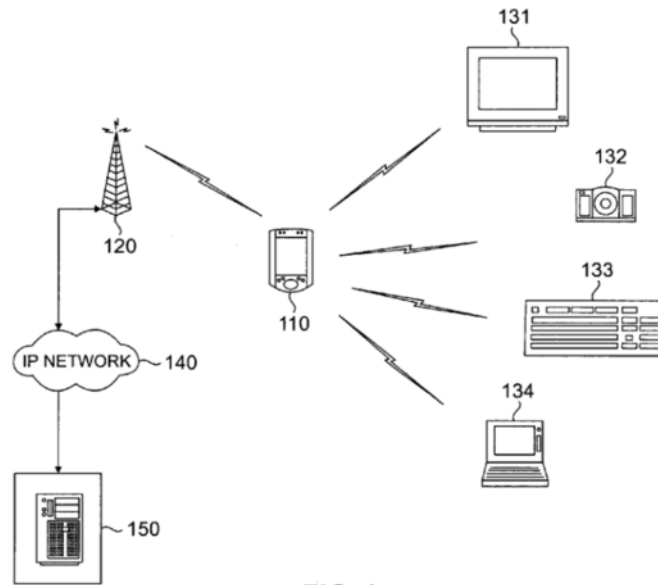


FIG. 1

Tee '758 at Figure 2

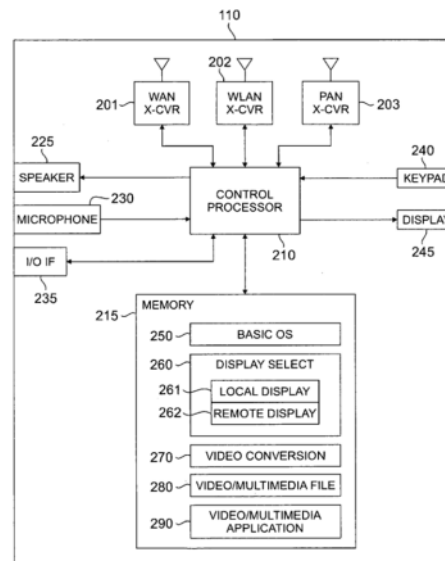


FIG. 2

Tee '758 at ¶ 6

A mobile terminal is provided. According to an advantageous embodiment, the mobile terminal comprises a local display capable of displaying multimedia data, a controller capable of transmitting the multimedia data to the local display, and a first transceiver capable of communicating with a remote display device. The controller is capable of comparing display parameter information associated with the external display device to display parameter information associated with the local display and, in response to the comparison, transmitting the multimedia data to the external display device via the first transceiver.

Tee '758 at ¶ 25

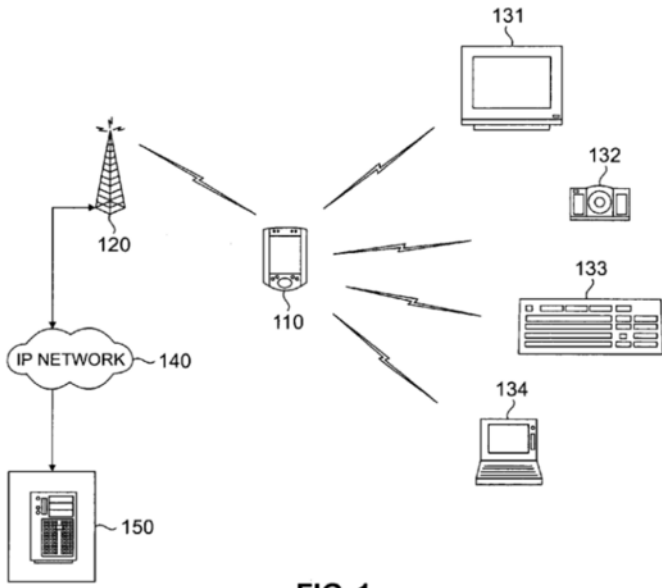
FIG. 2 illustrates exemplary mobile terminal 110 in greater detail according to an exemplary embodiment of the disclosure. Mobile terminal 110 comprises wide-area network (WAN) transceiver (X-CVR) 201, wireless local area network (WLAN) transceiver (X-CVR) 202, and personal area network (PAN) transceiver (X-CVR) 203. In an embodiment, only one of WLAN transceiver 202 and PAN transceiver 203 may be employed. Mobile terminal 110 also comprises control processor 210, memory 215, speaker 225, microphone 230, input/output interface (I/O IF) 235, keypad 240 and display 245. Memory 215 stores basic operating system (OS) program 250, display select program 260, video conversion program 270, video/multimedia file 280, and one or more video application programs 290. Display select program 260 comprises local display parameters file 261 and remote display parameters file 262.

Tee '758 at ¶ 26

Control processor 210 and memory 215 function as a controller that controls the overall operation of mobile terminal 110. Control processor 210 executes basic OS program 250 in order to control, among other things, transceivers 201, 202 and 203. Control processor 210 receives operator inputs from keypad 240 or another user input device (not shown) and displays data on display 245. If mobile terminal 110 is, for example, a cell phone, control processor 210 can receive a voice signal from microphone 230 and can send voice signals to speaker 225. I/O interface 235 allows control processor 210 to be coupled to, and communicate with, another device, including, for example, a docking station, a data cord, an operator input device, or the like.

Tee '758 at claim 1

1. A mobile terminal comprising:
a local display capable of displaying multimedia data;
a controller capable of transmitting the multimedia data to the local display; and
a first transceiver capable of communicating with a remote display device,

'590 Patent Claim Limitation	Tee '758 Exemplary Disclosure
	wherein the controller is capable of comparing display parameter information associated with the remote display device to display parameter information associated with the local display and, in response to the comparison, transmitting the multimedia data to the remote display device via the first transceiver. To the extent Maxell contends Tee '758 does not disclose this limitation, a person of ordinary skill in the art would have readily arrived at this limitation by combining or modifying it in view of their general knowledge and/or the prior art references disclosed in the corresponding section of Samsung's Invalidity Contentions.
[10g] controlling, via a controller, assignment of connection of each of the first, second, and third radio communication circuits, wherein assignment of connection for each of the first and second radio communication circuit is controlled in response to receiving an indication from a user such that when an indication from the user indicates to use the first radio communication circuit, the controller assigns a connection to the first radio communication circuit for receiving the video information,	Tee '758 discloses “controlling, via a controller, assignment of connection of each of the first, second, and third radio communication circuits, wherein assignment of connection for each of the first and second radio communication circuit is controlled in response to receiving an indication from a user such that when an indication from the user indicates to use the first radio communication circuit, the controller assigns a connection to the first radio communication circuit for receiving the video information.” For example: Tee '758 at Figure 1  FIG. 1

Tee '758 at Figure 2

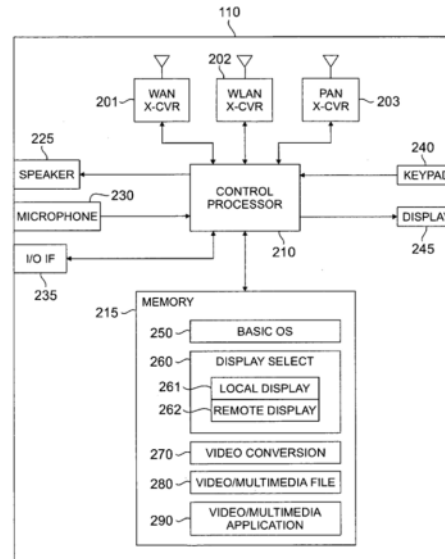


FIG. 2

Tee '758 at ¶ 6

A mobile terminal is provided. According to an advantageous embodiment, the mobile terminal comprises a local display capable of displaying multimedia data, a controller capable of transmitting the multimedia data to the local display, and a first transceiver capable of communicating with a remote display device. The controller is capable of comparing display parameter information associated with the external display device to display parameter information associated with the local display and, in response to the comparison, transmitting the multimedia data to the external display device via the first transceiver.

Tee '758 at ¶ 16

In some instances, the determination of whether the remote device has a better display may depend on the requirements of the video application executed by the mobile terminal. For many applications, it may be assumed that displays that are larger and have higher resolutions are better displays. The mobile terminal user may also make the decision as to which display to use.

Tee '758 at ¶ 17

'590 Patent Claim Limitation	Tee '758 Exemplary Disclosure
	Generally, the first wireless interface supports mobile wireless communications, including, but not limited to IS-2000, 1xEV-DO, 1xEV-DV, GSM/GPRS/EDGE, 3GPP UTRAN, HSDPA/HSUPA, 3GPP EUTRAN, TD-CDMA, WiBro, WiMAX, IEEE-802.16x, IEEE-802.20, and IEEE-802.11x (e.g., WiFi) in a hotspot environment. The second wireless interface typically supports shorter range wireless communications, including, but not limited to IEEE-802.15.3x, MB-OFDM, UWB, Wireless USB, IEEE-802.11x (or WiFi), and a Bluetooth standard that supports high throughput applications Tee '758 at ¶ 25 FIG. 2 illustrates exemplary mobile terminal 110 in greater detail according to an exemplary embodiment of the disclosure. Mobile terminal 110 comprises wide-area network (WAN) transceiver (X-CVR) 201, wireless local area network (WLAN) transceiver (X-CVR) 202, and personal area network (PAN) transceiver (X-CVR) 203. In an embodiment, only one of WLAN transceiver 202 and PAN transceiver 203 may be employed. Mobile terminal 110 also comprises control processor 210, memory 215, speaker 225, microphone 230, input/output interface (I/O IF) 235, keypad 240 and display 245. Memory 215 stores basic operating system (OS) program 250, display select program 260, video conversion program 270, video/multimedia file 280, and one or more video application programs 290. Display select program 260 comprises local display parameters file 261 and remote display parameters file 262. Tee '758 at ¶ 26 Control processor 210 and memory 215 function as a controller that controls the overall operation of mobile terminal 110. Control processor 210 executes basic OS program 250 in order to control, among other things, transceivers 201, 202 and 203. Control processor 210 receives operator inputs from keypad 240 or another user input device (not shown) and displays data on display 245. If mobile terminal 110 is, for example, a cell phone, control processor 210 can receive a voice signal from microphone 230 and can send voice signals to speaker 225. I/O interface 235 allows control processor 210 to be coupled to, and communicate with, another device, including, for example, a docking station, a data cord, an operator input device, or the like. Tee '758 at ¶ 27 In the exemplary embodiment, control processor 210 uses WAN transceiver 201 to communicate over a wide area network. For example, WAN transceiver 201 may be a GSM/GPRS/EDGE transceiver, a CDMA2000/1xEV-DO transceiver, or an IEEE-802.16x transceiver that communicates with base station 120 of a wide-area network. Control processor 210 may use WLAN transceiver 202 to communicate in a wireless local area network (WLAN) environment, such as an office WLAN that may have a coverage area or range of several hundred feet. By way of example, WLAN transceiver 202 may be an IEEE-

'590 Patent Claim Limitation	Tee '758 Exemplary Disclosure
	802.11x transceiver. Control processor 210 may use PAN transceiver 203 to communicate in a personal area network (PAN) environment, such as a Bluetooth or IEEE-802.15.3 communication link that may have a coverage area or range around 10-20 meters. Tee '758 at ¶ 28 In an alternate embodiment, mobile terminal 110 may communicate with BS 120 via a first air interface (or wireless interface) and with an external device that has a display screen via a second air interface (or wireless interface). Thus, mobile terminal 110 may comprise only two transceivers. Advantageously, one or more of transceivers 201-203 may be based on software-defined radio (SDR) technology and therefore may be capable of communicating according to more than one wireless interface standard. Tee '758 at ¶ 29 Additionally, depending on the distances involved, mobile terminal 110 may receive an incoming video and/or multimedia stream from any one of WAN transceiver 201, WLAN transceiver 202, and PAN transceiver 203 and may relay the video and/or multimedia stream to an external device using, for example, WLAN transceiver 202 or PAN transceiver 203. Essentially, this air interface functions similarly to I/O interface 235, but over the wireless link. Tee '758 at ¶ 30 In one example, mobile terminal 201 may receive a video stream from BS 120 via WAN transceiver 201 and may relay the video stream over a short distance to a remote display device via WLAN transceiver 202 or PAN transceiver 203. This may occur when mobile terminal 201 communicates with BS 120 in a cellular network and the remote display communicates with mobile terminal 110 using, for example, an IEEE-802.11x transceiver (i.e., communicates with WLAN transceiver 202) or a Bluetooth or IEEE-802.15.3x transceiver (i.e., communicates with PAN transceiver 203). Tee '758 at ¶ 33 Control processor 210 executes video/multimedia application program 290 in order to display video data on display 245. Control processor 210 executes video conversion program 270 in order to re-format (if necessary) the video data downloaded from server 150 through the one wireless interface (e.g., WAN transceiver 201) to a suitable format for re-transmission via another wireless interface (e.g., WLAN transceiver 202 or PAN transceiver 203). Additionally, video/multimedia application program 290 may retrieve video/multimedia data from video/multimedia file 280 and transmit a video stream to a remote device via a wireless interface. Advantageously, the wireless interface may have more than one

'590 Patent Claim Limitation	Tee '758 Exemplary Disclosure
	connection at the same time. For example, PAN transceiver 203 may transmit video to television 131 while simultaneously communicating with wireless keyboard 240. Tee '758 at ¶ 34 Control processor 210 executes display select program 260 in order to determine whether the quality of the display of the remote device (e.g., television 131) is superior to the quality of display 245 in mobile terminal 110. Control processor 210 may execute display select program 260 automatically in response to detection of wireless signals transmitted by the remote device. For example, PAN transceiver 203 may detect a pilot (or similar beacon) signal transmitted by the wireless transceiver associated with television 131 and may send a notification signal to control processor 210. The pilot/beacon signal may be a signal broadcast by a device, such as television 131, for example, to provide notification of the presence and capabilities of the device and the services provided by the device. Upon receipt of the notification signal, control processor 210 may launch display select application program 260. In another embodiment, PAN transceiver 203 broadcasts a signal to discover and interrogate neighboring nodes that may have the ability to display the information. As an example, the wireless transceiver associated with television 131 may acquire the transmission from PAN transceiver 203 and may transmit a signal in response to the inquiry, using the protocol supported by the air interface standard. Alternatively, control processor 210 may execute display select program 260 in response to manual inputs entered by the operator of mobile terminal 110. Tee '758 at ¶ 36 Under control of display select program 260, control processor 210 compares the parameters in remote display parameters file 262 to the parameters in local display parameters file 261 and selects the display best suited to video/multimedia application program 290. If the display of the external device is selected, control processor 210 transfers the video/multimedia data to the appropriate one of transceivers 202 and 203. Control processor 210 may prompt the operator of mobile terminal 110 for permission to transmit video/multimedia data to the remote display device. Control processor 210 may also continue to send video/multimedia data to display 245 for simultaneous display. In an alternate embodiment, it may be assumed that the remote display is better than display 245. In such an embodiment, control processor 210 may select the remote display (with or without operator permission) without comparing parameters associated with display 245 and the remote display. Tee '758 at ¶ 37 FIG. 3 depicts flow diagram 300, which illustrates the operation of exemplary mobile terminal 110 and a remote display device according to one embodiment of the disclosure. Initially, mobile terminal 110

'590 Patent Claim Limitation	Tee '758 Exemplary Disclosure
	accesses base station 120 via an air interface (e.g., transceiver 201 or 202) and initiates a video/multimedia download from server 150 (process step 305). Alternatively, mobile terminal 110 may play back video/multimedia data stored in video/multimedia file 280. At some point, mobile terminal 110 detects the presence of a remote display device (e.g., television 131) via another air interface (e.g., transceiver 202 or 203) and establishes a wireless link with the remote display device (process step 310), with the authorization of the mobile terminal user. Tee '758 at ¶ 38 Mobile terminal 110 then requests the capabilities of the remote display device and compares the capabilities of the remote display device and local display 245 (process step 315). Mobile terminal 110 may prompt the operator to select the remote display device (process step 320). Assuming the remote display device is selected, mobile terminal 110 then forwards (or relays or re-transmits) the video stream from base station 120 (or video/multimedia file 280) to the remote display device (process step 325). Optionally, mobile terminal 110 may wirelessly communicate with a remote user input device, such as keyboard 133 process step 330). Optionally, if video/multimedia application program 290 is a video conferencing application, mobile terminal 110 receives via the short-range air interface video/multimedia data from a remote video camera and relays the camera video data to base station 120 (process step 335). Tee '758 at claim 1 1. A mobile terminal comprising: a local display capable of displaying multimedia data; a controller capable of transmitting the multimedia data to the local display; and a first transceiver capable of communicating with a remote display device, wherein the controller is capable of comparing display parameter information associated with the remote display device to display parameter information associated with the local display and, in response to the comparison, transmitting the multimedia data to the remote display device via the first transceiver. Tee '758 at claim 6 6. The mobile terminal as set forth in claim 4, wherein the controller is capable of prompting an operator of the mobile terminal for permission to transmit the multimedia data to the remote display device via the first transceiver. Tee '758 at claims 12–14 12. The mobile terminal as set forth in claim 11, wherein the controller is capable of communicating with a remote user input device via the first transceiver.

'590 Patent Claim Limitation	Tee '758 Exemplary Disclosure
	13. The mobile terminal as set forth in claim 12, wherein the remote user input device comprises a wireless keyboard. 14. The mobile terminal as set forth in claim 12, wherein the controller is capable of prompting an operator of the mobile terminal for permission to transmit the multimedia data to the remote display device via the first transceiver. To the extent Maxell contends Tee '758 does not disclose this limitation, a person of ordinary skill in the art would have readily arrived at this limitation by combining or modifying it in view of their general knowledge and/or the prior art references disclosed in the corresponding section of Samsung's Invalidity Contentions.
[10h] wherein the receiving and connecting is controlled so that the first radio communication circuit is configured to receive video information and the second radio communication circuit is configured to connect to the internet or the home network simultaneously;	Tee '758 discloses "wherein the receiving and connecting is controlled so that the first radio communication circuit is configured to receive video information and the second radio communication circuit is configured to connect to the internet or the home network simultaneously." For example: Tee '758 at ¶ 18 An exemplary mobile terminal may be used for mobile communications and as a gateway for a short-range wireless network, also called a personal area network (PAN). The mobile terminal may support a variety of mobile applications, including voice, multimedia (i.e., video, graphics, text, and audio downloads), video conferencing, web browsing, file download, VPN and Internet gaming. Advantageously, when the mobile terminal is near a higher quality display (e.g., a TV screen), the mobile terminal relays its video data to the external display device as well as to its internal display. This enables the operator of the mobile terminal to view the information on the higher quality display device, and to share the displayed information with other people at the same location, e.g., in a video conference call, or watching the latest broadcasting and streaming of News or events of common interests. Note that in the latter example, the source of information could be a remote Internet web server instead of a conventional TV broadcasting station. A remote Internet web server does not have the same geographical coverage limit as a conventional TV broadcasting station. In the case of group video conferencing using, for example, a digital camera phone, it would be more practical and ergonomically correct to have the received video data displayed on an external screen, while the phone camera captures and transmits the local user images. Tee '758 at ¶ 25 FIG. 2 illustrates exemplary mobile terminal 110 in greater detail according to an exemplary embodiment of the disclosure. Mobile terminal 110 comprises wide-area network (WAN) transceiver (X-CVR) 201,

'590 Patent Claim Limitation	Tee '758 Exemplary Disclosure
	wireless local area network (WLAN) transceiver (X-CVR) 202, and personal area network (PAN) transceiver (X-CVR) 203. In an embodiment, only one of WLAN transceiver 202 and PAN transceiver 203 may be employed. Mobile terminal 110 also comprises control processor 210, memory 215, speaker 225, microphone 230, input/output interface (I/O IF) 235, keypad 240 and display 245. Memory 215 stores basic operating system (OS) program 250, display select program 260, video conversion program 270, video/multimedia file 280, and one or more video application programs 290. Display select program 260 comprises local display parameters file 261 and remote display parameters file 262. Tee '758 at ¶ 26 Control processor 210 and memory 215 function as a controller that controls the overall operation of mobile terminal 110. Control processor 210 executes basic OS program 250 in order to control, among other things, transceivers 201, 202 and 203. Control processor 210 receives operator inputs from keypad 240 or another user input device (not shown) and displays data on display 245. If mobile terminal 110 is, for example, a cell phone, control processor 210 can receive a voice signal from microphone 230 and can send voice signals to speaker 225. I/O interface 235 allows control processor 210 to be coupled to, and communicate with, another device, including, for example, a docking station, a data cord, an operator input device, or the like. Tee '758 at ¶ 27 In the exemplary embodiment, control processor 210 uses WAN transceiver 201 to communicate over a wide area network. For example, WAN transceiver 201 may be a GSM/GPRS/EDGE transceiver, a CDMA2000/1xEV-DO transceiver, or an IEEE-802.16x transceiver that communicates with base station 120 of a wide-area network. Control processor 210 may use WLAN transceiver 202 to communicate in a wireless local area network (WLAN) environment, such as an office WLAN that may have a coverage area or range of several hundred feet. By way of example, WLAN transceiver 202 may be an IEEE-802.11x transceiver. Control processor 210 may use PAN transceiver 203 to communicate in a personal area network (PAN) environment, such as a Bluetooth or IEEE-802.15.3 communication link that may have a coverage area or range around 10-20 meters. Tee '758 at ¶ 28 In an alternate embodiment, mobile terminal 110 may communicate with BS 120 via a first air interface (or wireless interface) and with an external device that has a display screen via a second air interface (or wireless interface). Thus, mobile terminal 110 may comprise only two transceivers. Advantageously, one or more of transceivers 201-203 may be based on software-defined radio (SDR) technology and therefore may be capable of communicating according to more than one wireless interface standard.

Tee '758 at ¶ 29

Additionally, depending on the distances involved, mobile terminal 110 may receive an incoming video and/or multimedia stream from any one of WAN transceiver 201, WLAN transceiver 202, and PAN transceiver 203 and may relay the video and/or multimedia stream to an external device using, for example, WLAN transceiver 202 or PAN transceiver 203. Essentially, this air interface functions similarly to I/O interface 235, but over the wireless link.

Tee '758 at ¶ 30

In one example, mobile terminal 201 may receive a video stream from BS 120 via WAN transceiver 201 and may relay the video stream over a short distance to a remote display device via WLAN transceiver 202 or PAN transceiver 203. This may occur when mobile terminal 201 communicates with BS 120 in a cellular network and the remote display communicates with mobile terminal 110 using, for example, an IEEE-802.11x transceiver (i.e., communicates with WLAN transceiver 202) or a Bluetooth or IEEE-802.15.3x transceiver (i.e., communicates with PAN transceiver 203).

Tee '758 at ¶ 33

Control processor 210 executes video/multimedia application program 290 in order to display video data on display 245. Control processor 210 executes video conversion program 270 in order to re-format (if necessary) the video data downloaded from server 150 through the one wireless interface (e.g., WAN transceiver 201) to a suitable format for re-transmission via another wireless interface (e.g., WLAN transceiver 202 or PAN transceiver 203). Additionally, video/multimedia application program 290 may retrieve video/multimedia data from video/multimedia file 280 and transmit a video stream to a remote device via a wireless interface. Advantageously, the wireless interface may have more than one connection at the same time. For example, PAN transceiver 203 may transmit video to television 131 while simultaneously communicating with wireless keyboard 240.

Tee '758 at ¶ 36

Under control of display select program 260, control processor 210 compares the parameters in remote display parameters file 262 to the parameters in local display parameters file 261 and selects the display best suited to video/multimedia application program 290. If the display of the external device is selected, control processor 210 transfers the video/multimedia data to the appropriate one of transceivers 202 and 203. Control processor 210 may prompt the operator of mobile terminal 110 for permission to transmit video/multimedia data to the remote display device. Control processor 210 may also continue to send video/multimedia data to display 245 for simultaneous display. In an alternate embodiment, it may be assumed that the remote display is better than display 245. In such an embodiment, control processor 210

'590 Patent Claim Limitation	Tee '758 Exemplary Disclosure
	may select the remote display (with or without operator permission) without comparing parameters associated with display 245 and the remote display. Tee '758 at ¶ 37 FIG. 3 depicts flow diagram 300, which illustrates the operation of exemplary mobile terminal 110 and a remote display device according to one embodiment of the disclosure. Initially, mobile terminal 110 accesses base station 120 via an air interface (e.g., transceiver 201 or 202) and initiates a video/multimedia download from server 150 (process step 305). Alternatively, mobile terminal 110 may play back video/multimedia data stored in video/multimedia file 280. At some point, mobile terminal 110 detects the presence of a remote display device (e.g., television 131) via another air interface (e.g., transceiver 202 or 203) and establishes a wireless link with the remote display device (process step 310), with the authorization of the mobile terminal user. Tee '758 at ¶ 38 Mobile terminal 110 then requests the capabilities of the remote display device and compares the capabilities of the remote display device and local display 245 (process step 315). Mobile terminal 110 may prompt the operator to select the remote display device (process step 320). Assuming the remote display device is selected, mobile terminal 110 then forwards (or relays or re-transmits) the video stream from base station 120 (or video/multimedia file 280) to the remote display device (process step 325). Optionally, mobile terminal 110 may wirelessly communicate with a remote user input device, such as keyboard 133 process step 330). Optionally, if video/multimedia application program 290 is a video conferencing application, mobile terminal 110 receives via the short-range air interface video/multimedia data from a remote video camera and relays the camera video data to base station 120 (process step 335). To the extent Maxell contends Tee '758 does not disclose this limitation, a person of ordinary skill in the art would have readily arrived at this limitation by combining or modifying it in view of their general knowledge and/or the prior art references disclosed in the corresponding section of Samsung's Invalidity Contentions.
[10i] receiving, via the second or third radio communication circuits, a signal from the internet indicating that an update for an operating system is available; executing the update process; and	Tee '758 discloses “receiving, via the second or third radio communication circuits, a signal from the internet indicating that an update for an operating system is available; executing the update process; and storing an updated operating system after execution of the update process.” For example:

'590 Patent Claim Limitation	Tee '758 Exemplary Disclosure
storing an updated operating system after execution of the update process.	Tee '758 at ¶ 25 FIG. 2 illustrates exemplary mobile terminal 110 in greater detail according to an exemplary embodiment of the disclosure. Mobile terminal 110 comprises wide-area network (WAN) transceiver (X-CVR) 201, wireless local area network (WLAN) transceiver (X-CVR) 202, and personal area network (PAN) transceiver (X-CVR) 203. In an embodiment, only one of WLAN transceiver 202 and PAN transceiver 203 may be employed. Mobile terminal 110 also comprises control processor 210, memory 215, speaker 225, microphone 230, input/output interface (I/O IF) 235, keypad 240 and display 245. Memory 215 stores basic operating system (OS) program 250, display select program 260, video conversion program 270, video/multimedia file 280, and one or more video application programs 290. Display select program 260 comprises local display parameters file 261 and remote display parameters file 262. To the extent Maxell contends Tee '758 does not disclose this limitation, a person of ordinary skill in the art would have readily arrived at this limitation by combining or modifying it in view of their general knowledge and/or the prior art references disclosed in the corresponding section of Samsung's Invalidity Contentions.
[11pre] 11. The video processing apparatus of claim 1, further comprising	Tee '758 discloses "[t]he video processing apparatus of claim 1." See above.
[11a] a fourth radio communication circuit capable of transmitting information and using a fourth transmission frequency band that is different from the first, second, and third transmission frequency bands, wherein the controller controls assignment of connection of each of the first, second, third, and fourth radio communication circuits.	Tee '758 discloses "a fourth radio communication circuit capable of transmitting information and using a fourth transmission frequency band that is different from the first, second, and third transmission frequency bands, wherein the controller controls assignment of connection of each of the first, second, third, and fourth radio communication circuits." For example: Tee '758 at ¶ 17 Generally, the first wireless interface supports mobile wireless communications, including, but not limited to IS-2000, 1xEV-DO, 1xEV-DV, GSM/GPRS/EDGE, 3GPP UTRAN, HSDPA/HSUPA, 3GPP EUTRAN, TD-CDMA, WiBro, WiMAX, IEEE-802.16x, IEEE-802.20, and IEEE-802.11x (e.g., WiFi) in a hotspot environment. The second wireless interface typically supports shorter range wireless communications, including, but not limited to IEEE-802.15.3x, MB-OFDM, UWB, Wireless USB, IEEE-802.11x (or WiFi), and a Bluetooth standard that supports high throughput applications

Tee '758 at ¶ 20

Mobile terminal 110 is capable of communicating with one or more types of wireless wide-area networks (WANs), including conventional cellular networks and wireless local area networks (WLANs). By way of example, mobile terminal 110 may communicate with base station (BS) 120, which may be associated with a CDMA2000/1xEV-DO/1xEV-DV network, a GSM/GPRS/EDGE network, an IEEE-802.16x network, or the like. In other embodiments, base station 120 may communicate according to such wireless interface standards, or their evolutions, as 1xEV-DO, 1xEV-DV, GSM/GPRS/EDGE, 3GPP UTRAN, HSDPA/HSUPA, 3GPP EUTRAN, TD-CDMA, WiBro, WiMAX, IEEE-802.20, or IEEE-802.11x, among others. Base station 120 provides mobile terminal 110 with access to voice networks, such as the public switched telephone network (PSTN), and to data networks, including, for example, the Internet or proprietary Internet protocol (IP) networks. In the illustrated embodiment, BS 120 provides mobile terminal 110 with access to server 150 via IP network 140.

Tee '758 at ¶ 25

FIG. 2 illustrates exemplary mobile terminal 110 in greater detail according to an exemplary embodiment of the disclosure. Mobile terminal 110 comprises wide-area network (WAN) transceiver (X-CVR) 201, wireless local area network (WLAN) transceiver (X-CVR) 202, and personal area network (PAN) transceiver (X-CVR) 203. In an embodiment, only one of WLAN transceiver 202 and PAN transceiver 203 may be employed. Mobile terminal 110 also comprises control processor 210, memory 215, speaker 225, microphone 230, input/output interface (I/O IF) 235, keypad 240 and display 245. Memory 215 stores basic operating system (OS) program 250, display select program 260, video conversion program 270, video/multimedia file 280, and one or more video application programs 290. Display select program 260 comprises local display parameters file 261 and remote display parameters file 262.

Tee '758 at ¶ 26

Control processor 210 and memory 215 function as a controller that controls the overall operation of mobile terminal 110. Control processor 210 executes basic OS program 250 in order to control, among other things, transceivers 201, 202 and 203. Control processor 210 receives operator inputs from keypad 240 or another user input device (not shown) and displays data on display 245. If mobile terminal 110 is, for example, a cell phone, control processor 210 can receive a voice signal from microphone 230 and can send voice signals to speaker 225. I/O interface 235 allows control processor 210 to be coupled to, and communicate with, another device, including, for example, a docking station, a data cord, an operator input device, or the like.

Tee '758 at ¶ 27

'590 Patent Claim Limitation	Tee '758 Exemplary Disclosure
	In the exemplary embodiment, control processor 210 uses WAN transceiver 201 to communicate over a wide area network. For example, WAN transceiver 201 may be a GSM/GPRS/EDGE transceiver, a CDMA2000/1xEV-DO transceiver, or an IEEE-802.16x transceiver that communicates with base station 120 of a wide-area network. Control processor 210 may use WLAN transceiver 202 to communicate in a wireless local area network (WLAN) environment, such as an office WLAN that may have a coverage area or range of several hundred feet. By way of example, WLAN transceiver 202 may be an IEEE-802.11x transceiver. Control processor 210 may use PAN transceiver 203 to communicate in a personal area network (PAN) environment, such as a Bluetooth or IEEE-802.15.3 communication link that may have a coverage area or range around 10-20 meters. Tee '758 at ¶ 28 In the illustrated embodiment in FIG. 2, three distinct transceivers are shown. However, this is by way of example only. Tee '758 at ¶ 28 In an alternate embodiment, mobile terminal 110 may communicate with BS 120 via a first air interface (or wireless interface) and with an external device that has a display screen via a second air interface (or wireless interface). Thus, mobile terminal 110 may comprise only two transceivers. Advantageously, one or more of transceivers 201-203 may be based on software-defined radio (SDR) technology and therefore may be capable of communicating according to more than one wireless interface standard. Tee '758 at ¶ 29 Additionally, depending on the distances involved, mobile terminal 110 may receive an incoming video and/or multimedia stream from any one of WAN transceiver 201, WLAN transceiver 202, and PAN transceiver 203 and may relay the video and/or multimedia stream to an external device using, for example, WLAN transceiver 202 or PAN transceiver 203. Essentially, this air interface functions similarly to I/O interface 235, but over the wireless link. Tee '758 at ¶ 30 In one example, mobile terminal 201 may receive a video stream from BS 120 via WAN transceiver 201 and may relay the video stream over a short distance to a remote display device via WLAN transceiver 202 or PAN transceiver 203. This may occur when mobile terminal 201 communicates with BS 120 in a cellular network and the remote display communicates with mobile terminal 110 using, for example, an IEEE-802.11x transceiver (i.e., communicates with WLAN transceiver 202) or a Bluetooth or IEEE-802.15.3x transceiver (i.e., communicates with PAN transceiver 203).

Tee '758 at ¶ 37

FIG. 3 depicts flow diagram 300, which illustrates the operation of exemplary mobile terminal 110 and a remote display device according to one embodiment of the disclosure. Initially, mobile terminal 110 accesses base station 120 via an air interface (e.g., transceiver 201 or 202) and initiates a video/multimedia download from server 150 (process step 305). Alternatively, mobile terminal 110 may play back video/multimedia data stored in video/multimedia file 280. At some point, mobile terminal 110 detects the presence of a remote display device (e.g., television 131) via another air interface (e.g., transceiver 202 or 203) and establishes a wireless link with the remote display device (process step 310), with the authorization of the mobile terminal user.

Tee '758 at ¶ 38

Mobile terminal 110 then requests the capabilities of the remote display device and compares the capabilities of the remote display device and local display 245 (process step 315). Mobile terminal 110 may prompt the operator to select the remote display device (process step 320). Assuming the remote display device is selected, mobile terminal 110 then forwards (or relays or re-transmits) the video stream from base station 120 (or video/multimedia file 280) to the remote display device (process step 325). Optionally, mobile terminal 110 may wirelessly communicate with a remote user input device, such as keyboard 133 (process step 330). Optionally, if video/multimedia application program 290 is a video conferencing application, mobile terminal 110 receives via the short-range air interface video/multimedia data from a remote video camera and relays the camera video data to base station 120 (process step 335).

Tee '758 at claims 15–17

15. The mobile terminal as set forth in claim 9, wherein the first transceiver comprises a personal area network transceiver.

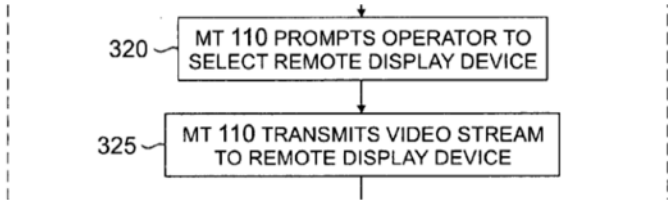
16. The mobile terminal as set forth in claim 15, wherein the personal area network transceiver comprises one of: an IEEE-802.15.3x transceiver, an MB-OFDM transceiver, a UWB transceiver, a wireless USB transceiver, an IEEE-802.11x transceiver, and a Bluetooth transceiver.

17. The mobile terminal as set forth in claim 9, wherein the second transceiver comprises one of an IS-2000 transceiver, a 1xEV-DO transceiver, a 1xEV-DV transceiver, a GSM/GPRS/EDGE transceiver, a 3GPP UTRAN transceiver, an HSDPA/HSUPA transceiver, a 3GPP EUTRAN transceiver, a TD-CDMA transceiver, a WiBro transceiver, a WiMAX transceiver, an IEEE-802.16x transceiver, an IEEE-802.20 transceiver, and an IEEE-802.11x transceiver.

To the extent Maxell contends Tee '758 does not disclose this limitation, a person of ordinary skill in the art would have readily arrived at this limitation by combining or modifying it in view of their general

'590 Patent Claim Limitation	Tee '758 Exemplary Disclosure
	knowledge and/or the prior art references disclosed in the corresponding section of Samsung's Invalidity Contentions.
[12pre] 12. The video processing apparatus of claim 1,	Tee '758 discloses "[t]he video processing apparatus of claim 1." See above.
[12a] wherein the third transmission frequency band is different from the first and second transmission frequency bands.	Tee '758 discloses "wherein the third transmission frequency band is different from the first and second transmission frequency bands." For example: Tee '758 at ¶ 17 Generally, the first wireless interface supports mobile wireless communications, including, but not limited to IS-2000, 1xEV-DO, 1xEV-DV, GSM/GPRS/EDGE, 3GPP UTRAN, HSDPA/HSUPA, 3GPP EUTRAN, TD-CDMA, WiBro, WiMAX, IEEE-802.16x, IEEE-802.20, and IEEE-802.11x (e.g., WiFi) in a hotspot environment. The second wireless interface typically supports shorter range wireless communications, including, but not limited to IEEE-802.15.3x, MB-OFDM, UWB, Wireless USB, IEEE-802.11x (or WiFi), and a Bluetooth standard that supports high throughput applications Tee '758 at ¶ 20 Mobile terminal 110 is capable of communicating with one or more types of wireless wide-area networks (WANs), including conventional cellular networks and wireless local area networks (WLANs). By way of example, mobile terminal 110 may communicate with base station (BS) 120, which may be associated with a CDMA2000/1xEV-DO/1xEV-DV network, a GSM/GPRS/EDGE network, an IEEE-802.16x network, or the like. In other embodiments, base station 120 may communicate according to such wireless interface standards, or their evolutions, as 1xEV-DO, 1xEV-DV, GSM/GPRS/EDGE, 3GPP UTRAN, HSDPA/HSUPA, 3GPP EUTRAN, TD-CDMA, WiBro, WiMAX, IEEE-802.20, or IEEE-802.11x, among others. Base station 120 provides mobile terminal 110 with access to voice networks, such as the public switched telephone network (PSTN), and to data networks, including, for example, the Internet or proprietary Internet protocol (IP) networks. In the illustrated embodiment, BS 120 provides mobile terminal 110 with access to server 150 via IP network 140. Tee '758 at ¶ 25 FIG. 2 illustrates exemplary mobile terminal 110 in greater detail according to an exemplary embodiment of the disclosure. Mobile terminal 110 comprises wide-area network (WAN) transceiver (X-CVR) 201, wireless local area network (WLAN) transceiver (X-CVR) 202, and personal area network (PAN) transceiver (X-CVR) 203. In an embodiment, only one of WLAN transceiver 202 and PAN transceiver

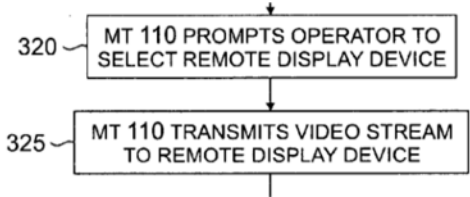
'590 Patent Claim Limitation	Tee '758 Exemplary Disclosure
	203 may be employed. Mobile terminal 110 also comprises control processor 210, memory 215, speaker 225, microphone 230, input/output interface (I/O IF) 235, keypad 240 and display 245. Memory 215 stores basic operating system (OS) program 250, display select program 260, video conversion program 270, video/multimedia file 280, and one or more video application programs 290. Display select program 260 comprises local display parameters file 261 and remote display parameters file 262. Tee '758 at ¶ 26 Control processor 210 and memory 215 function as a controller that controls the overall operation of mobile terminal 110. Control processor 210 executes basic OS program 250 in order to control, among other things, transceivers 201, 202 and 203. Control processor 210 receives operator inputs from keypad 240 or another user input device (not shown) and displays data on display 245. If mobile terminal 110 is, for example, a cell phone, control processor 210 can receive a voice signal from microphone 230 and can send voice signals to speaker 225. I/O interface 235 allows control processor 210 to be coupled to, and communicate with, another device, including, for example, a docking station, a data cord, an operator input device, or the like. Tee '758 at ¶ 27 In the exemplary embodiment, control processor 210 uses WAN transceiver 201 to communicate over a wide area network. For example, WAN transceiver 201 may be a GSM/GPRS/EDGE transceiver, a CDMA2000/1xEV-DO transceiver, or an IEEE-802.16x transceiver that communicates with base station 120 of a wide-area network. Control processor 210 may use WLAN transceiver 202 to communicate in a wireless local area network (WLAN) environment, such as an office WLAN that may have a coverage area or range of several hundred feet. By way of example, WLAN transceiver 202 may be an IEEE-802.11x transceiver. Control processor 210 may use PAN transceiver 203 to communicate in a personal area network (PAN) environment, such as a Bluetooth or IEEE-802.15.3 communication link that may have a coverage area or range around 10-20 meters. Tee '758 at claims 15–17 15. The mobile terminal as set forth in claim 9, wherein the first transceiver comprises a personal area network transceiver. 16. The mobile terminal as set forth in claim 15, wherein the personal area network transceiver comprises one of: an IEEE-802.15.3x transceiver, an MB-OFDM transceiver, a UWB transceiver, a wireless USB transceiver, an IEEE-802.11x transceiver, and a Bluetooth transceiver. 17. The mobile terminal as set forth in claim 9, wherein the second transceiver comprises one of an IS-2000 transceiver, a 1xEV-DO transceiver, a 1xEV-DV transceiver, a GSM/GPRS/EDGE transceiver, a

'590 Patent Claim Limitation	Tee '758 Exemplary Disclosure
	3GPP UTRAN transceiver, an HSDPA/HSUPA transceiver, a 3GPP EUTRAN transceiver, a TD-CDMA transceiver, a WiBro transceiver, a WiMAX transceiver, an IEEE-802.16x transceiver, an IEEE-802.20 transceiver, and an IEEE-802.11x transceiver. To the extent Maxell contends Tee '758 does not disclose this limitation, a person of ordinary skill in the art would have readily arrived at this limitation by combining or modifying it in view of their general knowledge and/or the prior art references disclosed in the corresponding section of Samsung's Invalidity Contentions.
[15pre] 15. The video processing apparatus of claim 1,	Tee '758 discloses "[t]he video processing apparatus of claim 1." See above.
[15a] wherein the input device is capable of receiving a user's selection of content to be displayed on the video processing apparatus.	Tee '758 discloses "wherein the input device is capable of receiving a user's selection of content to be displayed on the video processing apparatus." For example: Tee '758 at Fig. 3  <pre> graph TD 320[320 MT 110 PROMPTS OPERATOR TO SELECT REMOTE DISPLAY DEVICE] --> 325[325 MT 110 TRANSMITS VIDEO STREAM TO REMOTE DISPLAY DEVICE] </pre> Tee '758 at ¶ 36 Under control of display select program 260, control processor 210 compares the parameters in remote display parameters file 262 to the parameters in local display parameters file 261 and selects the display best suited to video/multimedia application program 290. If the display of the external device is selected, control processor 210 transfers the video/multimedia data to the appropriate one of transceivers 202 and 203. Control processor 210 may prompt the operator of mobile terminal 110 for permission to transmit video/multimedia data to the remote display device. Control processor 210 may also continue to send video/multimedia data to display 245 for simultaneous display. In an alternate embodiment, it may be assumed that the remote display is better than display 245. In such an embodiment, control processor 210 may select the remote display (with or without operator permission) without comparing parameters associated with display 245 and the remote display.

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	Tee '758 at ¶ 38 Mobile terminal 110 then requests the capabilities of the remote display device and compares the capabilities of the remote display device and local display 245 (process step 315). Mobile terminal 110 may prompt the operator to select the remote display device (process step 320). Assuming the remote display device is selected, mobile terminal 110 then forwards (or relays or re-transmits) the video stream from base station 120 (or video/multimedia file 280) to the remote display device (process step 325). Optionally, mobile terminal 110 may wirelessly communicate with a remote user input device, such as keyboard 133 process step 330). Optionally, if video/multimedia application program 290 is a video conferencing application, mobile terminal 110 receives via the short-range air interface video/multimedia data from a remote video camera and relays the camera video data to base station 120 (process step 335). Tee '758 at claim 6 6. The mobile terminal as set forth in claim 4, wherein the controller is capable of prompting an operator of the mobile terminal for permission to transmit the multimedia data to the remote display device via the first transceiver. To the extent Maxell contends Tee '758 does not disclose this limitation, a person of ordinary skill in the art would have readily arrived at this limitation by combining or modifying it in view of their general knowledge and/or the prior art references disclosed in the corresponding section of Samsung's Invalidity Contentions.
[16pre] 16. The video processing apparatus of claim 1,	Tee '758 discloses "[t]he video processing apparatus of claim 1." See above.
[16a] wherein the second or third radio communication circuits receive a signal from the internet indicating that an update for an application of the video processing apparatus is available, and the video processing apparatus executes an application update process such that an updated application of the video processing	Tee '758 discloses "wherein the second or third radio communication circuits receive a signal from the internet indicating that an update for an application of the video processing apparatus is available, and the video processing apparatus executes an application update process such that an updated application of the video processing apparatus is stored in the video processing apparatus after execution of the application update process." For example: Tee '758 at ¶ 3 Wireless mobile terminals are being used in an ever-increasing variety of applications. This is particularly true of hand-held devices, such as cell phones, personal digital assistant (PDA) devices with wireless capability, and wireless hand-held (or palm top) computers. More and more, these applications include video and/or audio applications or multimedia applications that rely heavily on graphics.

'590 Patent Claim Limitation	Tee '758 Exemplary Disclosure
apparatus is stored in the video processing apparatus after execution of the application update process.	Previous generations of hand-held mobile terminals were capable of supporting multimedia and video/audio applications, but this capability was diminished by the relatively low data rates that conventional wireless networks could achieve. This problem is being addressed by new wireless communications standards and equipment that provide much higher data rates. Tee '758 at ¶ 4 However, even if network bottlenecks are removed, the usefulness of small mobile terminals may be limited nonetheless by the human interface problems associated with handheld devices. The small display screens of wireless mobile terminals diminish the capabilities of some applications, particularly video applications. For example, the small screens of hand-held mobile terminals are a well-known hindrance to the display of website information in Internet browser applications. As a practical matter, the display of a mobile terminal (e.g., a cell phone or PDA) typically has size limitations imposed by form-factor, power consumption and cost. Thus, handheld mobile terminals may not be an attractive device for some video and multimedia applications. Tee '758 at ¶ 5 Therefore, there is a need in the art for small mobile terminals that are better suited to video applications and to multimedia applications. In particular, there is a need for a mobile terminal that can overcome the limitations of a small display screen to provide improved viewing of video and multimedia applications. Tee '758 at ¶ 18 An exemplary mobile terminal may be used for mobile communications and as a gateway for a short-range wireless network, also called a personal area network (PAN). The mobile terminal may support a variety of mobile applications, including voice, multimedia (i.e., video, graphics, text, and audio downloads), video conferencing, web browsing, file download, VPN and Internet gaming. Advantageously, when the mobile terminal is near a higher quality display (e.g., a TV screen), the mobile terminal relays its video data to the external display device as well as to its internal display. This enables the operator of the mobile terminal to view the information on the higher quality display device, and to share the displayed information with other people at the same location, e.g., in a video conference call, or watching the latest broadcasting and streaming of News or events of common interests. Note that in the latter example, the source of information could be a remote Internet web server instead of a conventional TV broadcasting station. A remote Internet web server does not have the same geographical coverage limit as a conventional TV broadcasting station. In the case of group video conferencing using, for example, a digital camera phone, it would be more practical and ergonomically correct to have the

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	received video data displayed on an external screen, while the phone camera captures and transmits the local user images. Tee '758 at ¶ 24 It is not required that mobile terminal 110 receive an incoming video stream from base station 120. In an alternate scenario, mobile terminal 110 may execute a video application and/or a multimedia application that plays back a video file and/or multimedia file stored in memory in mobile terminal 110. Mobile terminal 110 then transmits the video (or multimedia) stream from the stored file to television 131 (or another device) for viewing. Tee '758 at ¶ 25 FIG. 2 illustrates exemplary mobile terminal 110 in greater detail according to an exemplary embodiment of the disclosure. Mobile terminal 110 comprises wide-area network (WAN) transceiver (X-CVR) 201, wireless local area network (WLAN) transceiver (X-CVR) 202, and personal area network (PAN) transceiver (X-CVR) 203. In an embodiment, only one of WLAN transceiver 202 and PAN transceiver 203 may be employed. Mobile terminal 110 also comprises control processor 210, memory 215, speaker 225, microphone 230, input/output interface (I/O IF) 235, keypad 240 and display 245. Memory 215 stores basic operating system (OS) program 250, display select program 260, video conversion program 270, video/multimedia file 280, and one or more video application programs 290. Display select program 260 comprises local display parameters file 261 and remote display parameters file 262. Tee '758 at ¶ 33 Control processor 210 executes video/multimedia application program 290 in order to display video data on display 245. Control processor 210 executes video conversion program 270 in order to re-format (if necessary) the video data downloaded from server 150 through the one wireless interface (e.g., WAN transceiver 201) to a suitable format for re-transmission via another wireless interface (e.g., WLAN transceiver 202 or PAN transceiver 203). Additionally, video/multimedia application program 290 may retrieve video/multimedia data from video/multimedia file 280 and transmit a video stream to a remote device via a wireless interface. Advantageously, the wireless interface may have more than one connection at the same time. For example, PAN transceiver 203 may transmit video to television 131 while simultaneously communicating with wireless keyboard 240. Tee '758 at ¶ 34 Control processor 210 executes display select program 260 in order to determine whether the quality of the display of the remote device (e.g., television 131) is superior to the quality of display 245 in mobile

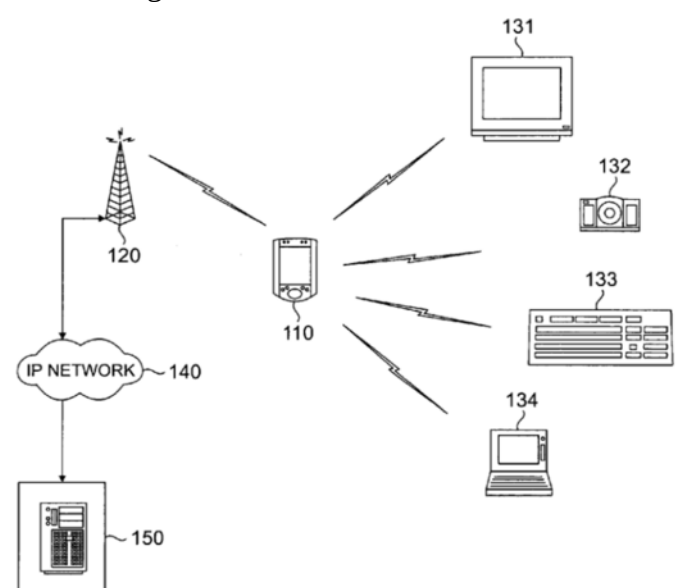
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	terminal 110. Control processor 210 may execute display select program 260 automatically in response to detection of wireless signals transmitted by the remote device. For example, PAN transceiver 203 may detect a pilot (or similar beacon) signal transmitted by the wireless transceiver associated with television 131 and may send a notification signal to control processor 210. The pilot/beacon signal may be a signal broadcast by a device, such as television 131, for example, to provide notification of the presence and capabilities of the device and the services provided by the device. Upon receipt of the notification signal, control processor 210 may launch display select application program 260. In another embodiment, PAN transceiver 203 broadcasts a signal to discover and interrogate neighboring nodes that may have the ability to display the information. As an example, the wireless transceiver associated with television 131 may acquire the transmission from PAN transceiver 203 and may transmit a signal in response to the inquiry, using the protocol supported by the air interface standard. Alternatively, control processor 210 may execute display select program 260 in response to manual inputs entered by the operator of mobile terminal 110. To the extent Maxell contends Tee '758 does not disclose this limitation, a person of ordinary skill in the art would have readily arrived at this limitation by combining or modifying it in view of their general knowledge and/or the prior art references disclosed in the corresponding section of Samsung's Invalidity Contentions.
[17pre] 17. The video processing apparatus of claim 1, further comprising:	Tee '758 discloses "[t]he video processing apparatus of claim 1." See above.
[17a] a display for displaying a screen requesting user input, wherein the displayed screen prompts the user for a user input that indicates whether the user allows a connection between the first radio communication circuit and the external device to be established, wherein in response to receiving the user input indicating allowance of the connection, the first radio communication circuit	Tee '758 discloses "a display for displaying a screen requesting user input, wherein the displayed screen prompts the user for a user input that indicates whether the user allows a connection between the first radio communication circuit and the external device to be established, wherein in response to receiving the user input indicating allowance of the connection, the first radio communication circuit transmits the accumulated video information to the external device." For example: Tee '758 at Fig. 3  <pre> graph TD 320[320 MT 110 PROMPTS OPERATOR TO SELECT REMOTE DISPLAY DEVICE] --> 325[325 MT 110 TRANSMITS VIDEO STREAM TO REMOTE DISPLAY DEVICE] </pre>

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transmits the accumulated video information to the external device.	Tee '758 at ¶ 16 In some instances, the determination of whether the remote device has a better display may depend on the requirements of the video application executed by the mobile terminal. For many applications, it may be assumed that displays that are larger and have higher resolutions are better displays. The mobile terminal user may also make the decision as to which display to use. Tee '758 at ¶ 25 FIG. 2 illustrates exemplary mobile terminal 110 in greater detail according to an exemplary embodiment of the disclosure. Mobile terminal 110 comprises wide-area network (WAN) transceiver (X-CVR) 201, wireless local area network (WLAN) transceiver (X-CVR) 202, and personal area network (PAN) transceiver (X-CVR) 203. In an embodiment, only one of WLAN transceiver 202 and PAN transceiver 203 may be employed. Mobile terminal 110 also comprises control processor 210, memory 215, speaker 225, microphone 230, input/output interface (I/O IF) 235, keypad 240 and display 245. Memory 215 stores basic operating system (OS) program 250, display select program 260, video conversion program 270, video/multimedia file 280, and one or more video application programs 290. Display select program 260 comprises local display parameters file 261 and remote display parameters file 262. Tee '758 at ¶ 26 Control processor 210 and memory 215 function as a controller that controls the overall operation of mobile terminal 110. Control processor 210 executes basic OS program 250 in order to control, among other things, transceivers 201, 202 and 203. Control processor 210 receives operator inputs from keypad 240 or another user input device (not shown) and displays data on display 245. If mobile terminal 110 is, for example, a cell phone, control processor 210 can receive a voice signal from microphone 230 and can send voice signals to speaker 225. I/O interface 235 allows control processor 210 to be coupled to, and communicate with, another device, including, for example, a docking station, a data cord, an operator input device, or the like. Tee '758 at ¶ 27 In the exemplary embodiment, control processor 210 uses WAN transceiver 201 to communicate over a wide area network. For example, WAN transceiver 201 may be a GSM/GPRS/EDGE transceiver, a CDMA2000/1xEV-DO transceiver, or an IEEE-802.16x transceiver that communicates with base station 120 of a wide-area network. Control processor 210 may use WLAN transceiver 202 to communicate in a wireless local area network (WLAN) environment, such as an office WLAN that may have a coverage area or range of several hundred feet. By way of example, WLAN transceiver 202 may be an IEEE-

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	802.11x transceiver. Control processor 210 may use PAN transceiver 203 to communicate in a personal area network (PAN) environment, such as a Bluetooth or IEEE-802.15.3 communication link that may have a coverage area or range around 10-20 meters. Tee '758 at ¶ 28 In an alternate embodiment, mobile terminal 110 may communicate with BS 120 via a first air interface (or wireless interface) and with an external device that has a display screen via a second air interface (or wireless interface). Thus, mobile terminal 110 may comprise only two transceivers. Advantageously, one or more of transceivers 201-203 may be based on software-defined radio (SDR) technology and therefore may be capable of communicating according to more than one wireless interface standard. Tee '758 at ¶ 29 Additionally, depending on the distances involved, mobile terminal 110 may receive an incoming video and/or multimedia stream from any one of WAN transceiver 201, WLAN transceiver 202, and PAN transceiver 203 and may relay the video and/or multimedia stream to an external device using, for example, WLAN transceiver 202 or PAN transceiver 203. Essentially, this air interface functions similarly to I/O interface 235, but over the wireless link. Tee '758 at ¶ 30 In one example, mobile terminal 201 may receive a video stream from BS 120 via WAN transceiver 201 and may relay the video stream over a short distance to a remote display device via WLAN transceiver 202 or PAN transceiver 203. This may occur when mobile terminal 201 communicates with BS 120 in a cellular network and the remote display communicates with mobile terminal 110 using, for example, an IEEE-802.11x transceiver (i.e., communicates with WLAN transceiver 202) or a Bluetooth or IEEE-802.15.3x transceiver (i.e., communicates with PAN transceiver 203). Tee '758 at ¶ 34 Control processor 210 executes display select program 260 in order to determine whether the quality of the display of the remote device (e.g., television 131) is superior to the quality of display 245 in mobile terminal 110. Control processor 210 may execute display select program 260 automatically in response to detection of wireless signals transmitted by the remote device. For example, PAN transceiver 203 may detect a pilot (or similar beacon) signal transmitted by the wireless transceiver associated with television 131 and may send a notification signal to control processor 210. The pilot/beacon signal may be a signal broadcast by a device, such as television 131, for example, to provide notification of the presence and capabilities of the device and the services provided by the device. Upon receipt of the notification signal,

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	control processor 210 may launch display select application program 260. In another embodiment, PAN transceiver 203 broadcasts a signal to discover and interrogate neighboring nodes that may have the ability to display the information. As an example, the wireless transceiver associated with television 131 may acquire the transmission from PAN transceiver 203 and may transmit a signal in response to the inquiry, using the protocol supported by the air interface standard. Alternatively, control processor 210 may execute display select program 260 in response to manual inputs entered by the operator of mobile terminal 110. Tee '758 at ¶ 36 Under control of display select program 260, control processor 210 compares the parameters in remote display parameters file 262 to the parameters in local display parameters file 261 and selects the display best suited to video/multimedia application program 290. If the display of the external device is selected, control processor 210 transfers the video/multimedia data to the appropriate one of transceivers 202 and 203. Control processor 210 may prompt the operator of mobile terminal 110 for permission to transmit video/multimedia data to the remote display device. Control processor 210 may also continue to send video/multimedia data to display 245 for simultaneous display. In an alternate embodiment, it may be assumed that the remote display is better than display 245. In such an embodiment, control processor 210 may select the remote display (with or without operator permission) without comparing parameters associated with display 245 and the remote display. Tee '758 at ¶ 37 FIG. 3 depicts flow diagram 300, which illustrates the operation of exemplary mobile terminal 110 and a remote display device according to one embodiment of the disclosure. Initially, mobile terminal 110 accesses base station 120 via an air interface (e.g., transceiver 201 or 202) and initiates a video/multimedia download from server 150 (process step 305). Alternatively, mobile terminal 110 may play back video/multimedia data stored in video/multimedia file 280. At some point, mobile terminal 110 detects the presence of a remote display device (e.g., television 131) via another air interface (e.g., transceiver 202 or 203) and establishes a wireless link with the remote display device (process step 310), with the authorization of the mobile terminal user. Tee '758 at ¶ 38 Mobile terminal 110 then requests the capabilities of the remote display device and compares the capabilities of the remote display device and local display 245 (process step 315). Mobile terminal 110 may prompt the operator to select the remote display device (process step 320). Assuming the remote display device is selected, mobile terminal 110 then forwards (or relays or re-transmits) the video stream

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	from base station 120 (or video/multimedia file 280) to the remote display device (process step 325). Optionally, mobile terminal 110 may wirelessly communicate with a remote user input device, such as keyboard 133 process step 330). Optionally, if video/multimedia application program 290 is a video conferencing application, mobile terminal 110 receives via the short-range air interface video/multimedia data from a remote video camera and relays the camera video data to base station 120 (process step 335). Tee '758 at claim 6 6. The mobile terminal as set forth in claim 4, wherein the controller is capable of prompting an operator of the mobile terminal for permission to transmit the multimedia data to the remote display device via the first transceiver. Tee '758 at claims 12–14 12. The mobile terminal as set forth in claim 11, wherein the controller is capable of communicating with a remote user input device via the first transceiver. 13. The mobile terminal as set forth in claim 12, wherein the remote user input device comprises a wireless keyboard. 14. The mobile terminal as set forth in claim 12, wherein the controller is capable of prompting an operator of the mobile terminal for permission to transmit the multimedia data to the remote display device via the first transceiver. To the extent Maxell contends Tee '758 does not disclose this limitation, a person of ordinary skill in the art would have readily arrived at this limitation by combining or modifying it in view of their general knowledge and/or the prior art references disclosed in the corresponding section of Samsung's Invalidity Contentions.
[18pre] 18. The video processing apparatus of claim 1,	Tee '758 discloses “[t]he video processing apparatus of claim 1.” See above.
[18a] wherein the second modulation scheme comprises quadrature amplitude modulation (QAM).	Tee '758 discloses “wherein the second modulation scheme comprises quadrature amplitude modulation (QAM).” For example: Tee '758 at ¶ 17 Generally, the first wireless interface supports mobile wireless communications, including, but not limited to IS-2000, 1xEV-DO, 1xEV-DV, GSM/GPRS/EDGE, 3GPP UTRAN, HSDPA/HSUPA, 3GPP EUTRAN, TD-CDMA, WiBro, WiMAX, IEEE-802.16x, IEEE-802.20, and IEEE-802.11x (e.g., WiFi) in a hotspot environment. The second wireless interface typically supports shorter range wireless

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	communications, including, but not limited to IEEE-802.15.3x, MB-OFDM, UWB, Wireless USB, IEEE-802.11x (or WiFi), and a Bluetooth standard that supports high throughput applications To the extent Maxell contends Tee '758 does not disclose this limitation, a person of ordinary skill in the art would have readily arrived at this limitation by combining or modifying it in view of their general knowledge and/or the prior art references disclosed in the corresponding section of Samsung's Invalidity Contentions.
[19pre] 19. The video processing apparatus of claim 1,	Tee '758 discloses "[t]he video processing apparatus of claim 1." See above.
[19a] wherein the second radio communication circuit is controllable to change from the second modulation scheme to a different modulation scheme.	Tee '758 discloses "wherein the second radio communication circuit is controllable to change from the second modulation scheme to a different modulation scheme." For example: Tee '758 at Figure 1  FIG. 1

Tee '758 at Figure 2

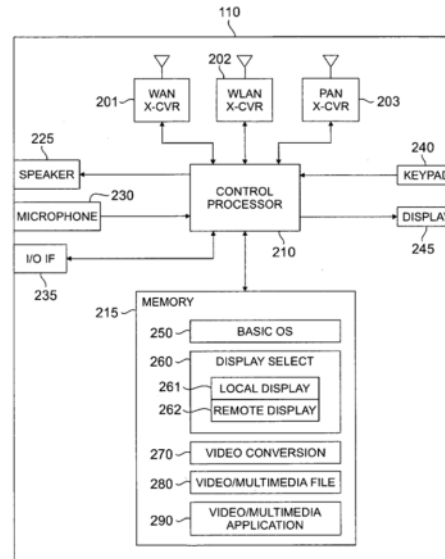


FIG. 2

Tee '758 at ¶ 17

Generally, the first wireless interface supports mobile wireless communications, including, but not limited to IS-2000, 1xEV-DO, 1xEV-DV, GSM/GPRS/EDGE, 3GPP UTRAN, HSDPA/HSUPA, 3GPP EUTRAN, TD-CDMA, WiBro, WiMAX, IEEE-802.16x, IEEE-802.20, and IEEE-802.11x (e.g., WiFi) in a hotspot environment. The second wireless interface typically supports shorter range wireless communications, including, but not limited to IEEE-802.15.3x, MB-OFDM, UWB, Wireless USB, IEEE-802.11x (or WiFi), and a Bluetooth standard that supports high throughput applications

Tee '758 at ¶ 18

An exemplary mobile terminal may be used for mobile communications and as a gateway for a short-range wireless network, also called a personal area network (PAN). The mobile terminal may support a variety of mobile applications, including voice, multimedia (i.e., video, graphics, text, and audio downloads), video conferencing, web browsing, file download, VPN and Internet gaming. Advantageously, when the mobile terminal is near a higher quality display (e.g., a TV screen), the mobile terminal relays its video data to the external display device as well as to its internal display. This enables the operator of the mobile terminal to view the information on the higher quality display device, and to share the displayed information with other people at the same location, e.g., in a video conference call, or

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	watching the latest broadcasting and streaming of News or events of common interests. Note that in the latter example, the source of information could be a remote Internet web server instead of a conventional TV broadcasting station. A remote Internet web server does not have the same geographical coverage limit as a conventional TV broadcasting station. In the case of group video conferencing using, for example, a digital camera phone, it would be more practical and ergonomically correct to have the received video data displayed on an external screen, while the phone camera captures and transmits the local user images. Tee '758 at ¶ 20 Mobile terminal 110 is capable of communicating with one or more types of wireless wide-area networks (WANs), including conventional cellular networks and wireless local area networks (WLANs). By way of example, mobile terminal 110 may communicate with base station (BS) 120, which may be associated with a CDMA2000/1xEV-DO/1xEV-DV network, a GSM/GPRS/EDGE network, an IEEE-802.16x network, or the like. In other embodiments, base station 120 may communicate according to such wireless interface standards, or their evolutions, as 1xEV-DO, 1xEV-DV, GSM/GPRS/EDGE, 3GPP UTRAN, HSDPA/HSUPA, 3GPP EUTRAN, TD-CDMA, WiBro, WiMAX, IEEE-802.20, or IEEE-802.11x, among others. Base station 120 provides mobile terminal 110 with access to voice networks, such as the public switched telephone network (PSTN), and to data networks, including, for example, the Internet or proprietary Internet protocol (IP) networks. In the illustrated embodiment, BS 120 provides mobile terminal 110 with access to server 150 via IP network 140. Tee '758 at ¶ 21 Mobile terminal 110 is also capable of communicating with one or more types of external (or remote) devices via a short-range wireless interface standard, such as IEEE-802.11x, ultra-wideband (UWB), IEEE-802.15.3x, MB-OFDM, Wireless USB, or a Bluetooth standard that supports high throughput applications, among others. It is assumed for the purposes of this disclosure that any such remote device comprises a wireless transceiver that can communicate with mobile terminal 110 in order to establish a personal area network (PAN) connection. By way of example, mobile terminal 110 may communicate with television 131 (or computer monitor 131), projector 132, keyboard 133, and laptop (or handheld) personal computer (PC) 134. If the remote device is capable of displaying video (e.g., television 131), it is assumed that the wireless transceiver of the remote device supports a relatively high data rate that is suitable for video applications and/or multimedia applications.

Tee '758 at ¶ 24

Advantageously, mobile terminal 110 is also capable of establishing a communication link with keyboard 133 (or another input device such as an electronic notepad) via the short-range PAN connection in order to allow the operator of mobile terminal 110 to use keyboard 133 (or the other input device) in lieu of the keyboard or other control buttons on mobile terminal 110. By way of example, mobile terminal 110 may establish a Bluetooth connection to keyboard 133 in order to allow the operator to use keyboard 133 to control mobile terminal 110. In this scenario, the external keyboard, external display and the mobile terminal are connected in the form of a conventional computer, with air interface 1 connecting the computer (with the MT playing the role of the computing unit) to the Internet, and air interface 2 or 3 connecting the computer to the external keyboard and display. If air interface 2 can support both connections between the MT and keyboard or display simultaneously, it is not necessary to have air interface 3.

Tee '758 at ¶ 25

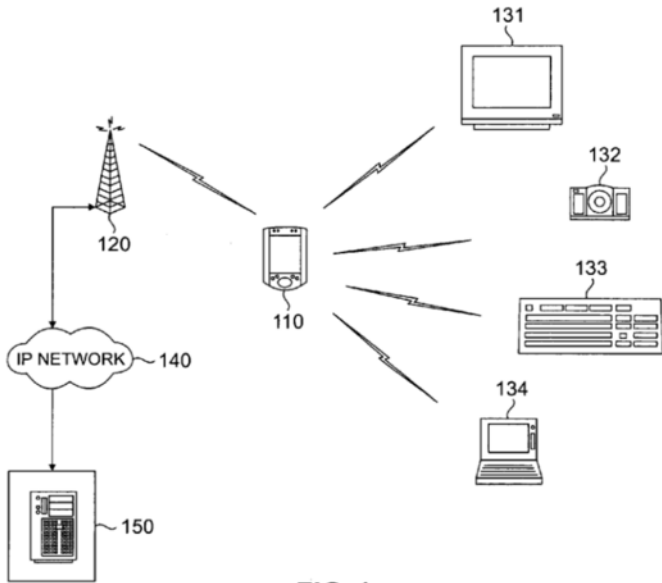
FIG. 2 illustrates exemplary mobile terminal 110 in greater detail according to an exemplary embodiment of the disclosure. Mobile terminal 110 comprises wide-area network (WAN) transceiver (X-CVR) 201, wireless local area network (WLAN) transceiver (X-CVR) 202, and personal area network (PAN) transceiver (X-CVR) 203. In an embodiment, only one of WLAN transceiver 202 and PAN transceiver 203 may be employed. Mobile terminal 110 also comprises control processor 210, memory 215, speaker 225, microphone 230, input/output interface (I/O IF) 235, keypad 240 and display 245. Memory 215 stores basic operating system (OS) program 250, display select program 260, video conversion program 270, video/multimedia file 280, and one or more video application programs 290. Display select program 260 comprises local display parameters file 261 and remote display parameters file 262.

Tee '758 at ¶ 26

Control processor 210 and memory 215 function as a controller that controls the overall operation of mobile terminal 110. Control processor 210 executes basic OS program 250 in order to control, among other things, transceivers 201, 202 and 203. Control processor 210 receives operator inputs from keypad 240 or another user input device (not shown) and displays data on display 245. If mobile terminal 110 is, for example, a cell phone, control processor 210 can receive a voice signal from microphone 230 and can send voice signals to speaker 225. I/O interface 235 allows control processor 210 to be coupled to, and communicate with, another device, including, for example, a docking station, a data cord, an operator input device, or the like.

Tee '758 at ¶ 27

'590 Patent Claim Limitation	Tee '758 Exemplary Disclosure
	In the exemplary embodiment, control processor 210 uses WAN transceiver 201 to communicate over a wide area network. For example, WAN transceiver 201 may be a GSM/GPRS/EDGE transceiver, a CDMA2000/1xEV-DO transceiver, or an IEEE-802.16x transceiver that communicates with base station 120 of a wide-area network. Control processor 210 may use WLAN transceiver 202 to communicate in a wireless local area network (WLAN) environment, such as an office WLAN that may have a coverage area or range of several hundred feet. By way of example, WLAN transceiver 202 may be an IEEE-802.11x transceiver. Control processor 210 may use PAN transceiver 203 to communicate in a personal area network (PAN) environment, such as a Bluetooth or IEEE-802.15.3 communication link that may have a coverage area or range around 10-20 meters. Tee '758 at ¶ 28 In the illustrated embodiment in FIG. 2, three distinct transceivers are shown. However, this is by way of example only. Tee '758 at ¶ 28 In an alternate embodiment, mobile terminal 110 may communicate with BS 120 via a first air interface (or wireless interface) and with an external device that has a display screen via a second air interface (or wireless interface). Thus, mobile terminal 110 may comprise only two transceivers. Advantageously, one or more of transceivers 201-203 may be based on software-defined radio (SDR) technology and therefore may be capable of communicating according to more than one wireless interface standard. Tee '758 at claim 9 9. The mobile terminal as set forth in claim 1, further comprising a second transceiver capable of communicating with a wireless network. Tee '758 at claims 15–17 15. The mobile terminal as set forth in claim 9, wherein the first transceiver comprises a personal area network transceiver. 16. The mobile terminal as set forth in claim 15, wherein the personal area network transceiver comprises one of: an IEEE-802.15.3x transceiver, an MB-OFDM transceiver, a UWB transceiver, a wireless USB transceiver, an IEEE-802.11x transceiver, and a Bluetooth transceiver. 17. The mobile terminal as set forth in claim 9, wherein the second transceiver comprises one of an IS-2000 transceiver, a 1xEV-DO transceiver, a 1xEV-DV transceiver, a GSM/GPRS/EDGE transceiver, a 3GPP UTRAN transceiver, an HSDPA/HSUPA transceiver, a 3GPP EUTRAN transceiver, a TD-CDMA

'590 Patent Claim Limitation	Tee '758 Exemplary Disclosure
	transceiver, a WiBro transceiver, a WiMAX transceiver, an IEEE-802.16x transceiver, an IEEE-802.20 transceiver, and an IEEE-802.11x transceiver. To the extent Maxell contends Tee '758 does not disclose this limitation, a person of ordinary skill in the art would have readily arrived at this limitation by combining or modifying it in view of their general knowledge and/or the prior art references disclosed in the corresponding section of Samsung's Invalidity Contentions.
[20pre] 20. The video processing apparatus of claim 1,	Tee '758 discloses "[t]he video processing apparatus of claim 1." See above.
[20a] wherein the video processing apparatus comprises a cellular phone.	Tee '758 discloses "wherein the video processing apparatus comprises a cellular phone." For example: Tee '758 at Figure 1  FIG. 1 Tee '758 at ¶ 6 A mobile terminal is provided. According to an advantageous embodiment, the mobile terminal comprises a local display capable of displaying multimedia data, a controller capable of transmitting the multimedia data to the local display, and a first transceiver capable of communicating with a remote

'590 Patent Claim Limitation	Tee '758 Exemplary Disclosure
	display device. The controller is capable of comparing display parameter information associated with the external display device to display parameter information associated with the local display and, in response to the comparison, transmitting the multimedia data to the external display device via the first transceiver. Tee '758 at ¶ 15 The mobile terminal disclosed herein overcomes the limitations of a small display screen by receiving video data (i.e., display data) over a first wireless interface and transmitting (or relaying) the video data over a second wireless interface to an external (or remote) device having a better (bigger) display, such as a television, a computer monitor, a laptop computer, the dashboard display of a car, a video projection device, and the like. For the purposes of this disclosure and the claims herein, the video data, which may also be referred to as multimedia data, is defined to include not only the video data itself, but may also include the audio data, text data, and control data that may accompany the video data. Tee '758 at ¶ 18 An exemplary mobile terminal may be used for mobile communications and as a gateway for a short-range wireless network, also called a personal area network (PAN). The mobile terminal may support a variety of mobile applications, including voice, multimedia (i.e., video, graphics, text, and audio downloads), video conferencing, web browsing, file download, VPN and Internet gaming. Advantageously, when the mobile terminal is near a higher quality display (e.g., a TV screen), the mobile terminal relays its video data to the external display device as well as to its internal display. This enables the operator of the mobile terminal to view the information on the higher quality display device, and to share the displayed information with other people at the same location, e.g., in a video conference call, or watching the latest broadcasting and streaming of News or events of common interests. Note that in the latter example, the source of information could be a remote Internet web server instead of a conventional TV broadcasting station. A remote Internet web server does not have the same geographical coverage limit as a conventional TV broadcasting station. In the case of group video conferencing using, for example, a digital camera phone, it would be more practical and ergonomically correct to have the received video data displayed on an external screen, while the phone camera captures and transmits the local user images. Tee '758 at ¶ 19 FIG. 1 illustrates exemplary mobile terminal 110 operating in a network environment according to an exemplary embodiment of the disclosure. Mobile terminal 110 is depicted in FIG. 1 as a PDA type device. However, this depiction is by way of illustration only and should not be construed so as to limit

'590 Patent Claim Limitation	Tee '758 Exemplary Disclosure
	the scope of the present disclosure. In fact, mobile terminal (MT) 110 may be any type of mobile wireless device that uses a display, including a cellular phone, a PDA, a handheld computer (e.g., Pocket PC™), and even a laptop computer. As an alternative, this mobile terminal may not need to have a high resolution, high quality display, as it could make use of external display device. Tee '758 at ¶ 20 Mobile terminal 110 is capable of communicating with one or more types of wireless wide-area networks (WANs), including conventional cellular networks and wireless local area networks (WLANs). By way of example, mobile terminal 110 may communicate with base station (BS) 120, which may be associated with a CDMA2000/1xEV-DO/1xEV-DV network, a GSM/GPRS/EDGE network, an IEEE-802.16x network, or the like. In other embodiments, base station 120 may communicate according to such wireless interface standards, or their evolutions, as 1xEV-DO, 1xEV-DV, GSM/GPRS/EDGE, 3GPP UTRAN, HSDPA/HSUPA, 3GPP EUTRAN, TD-CDMA, WiBro, WiMAX, IEEE-802.20, or IEEE-802.11x, among others. Base station 120 provides mobile terminal 110 with access to voice networks, such as the public switched telephone network (PSTN), and to data networks, including, for example, the Internet or proprietary Internet protocol (IP) networks. In the illustrated embodiment, BS 120 provides mobile terminal 110 with access to server 150 via IP network 140. Tee '758 at ¶ 22 According to an advantageous embodiment, mobile terminal 110 may relay a video stream to a remote device in order to allow the operator of mobile terminal 110 to view the video on a better display. By way of example, mobile terminal 110 may be receiving streaming video data from server 150 via IP network 140 and base station 120. The streaming video is displayed on the display of mobile terminal 110. At some point, mobile terminal 110 may be located near to television 131 and establish a wireless communication link via the short-range wireless protocol (e.g., IEEE-802.11x/802.15.3x) with television 131. Mobile terminal 110 may then request information from television 131 regarding the capabilities of the display screen of television 131. Tee '758 at ¶ 23 Assuming television 131 is a more desirable display than mobile terminal 110, mobile terminal 110 may relay the streaming video signal to television 131 via the short-range (or PAN) wireless communication link. This may be done automatically, or mobile terminal 110 may prompt the operator of mobile terminal 110 to select television 131 before relaying the video signal. Similarly, mobile terminal 110 may transmit a video signal over the short-range PAN connection to computer 134, projector 132, or any other remote device that has a display screen.

Tee '758 at ¶ 24

It is not required that mobile terminal 110 receive an incoming video stream from base station 120. In an alternate scenario, mobile terminal 110 may execute a video application and/or a multimedia application that plays back a video file and/or multimedia file stored in memory in mobile terminal 110. Mobile terminal 110 then transmits the video (or multimedia) stream from the stored file to television 131 (or another device) for viewing.

Tee '758 at ¶ 29

Additionally, depending on the distances involved, mobile terminal 110 may receive an incoming video and/or multimedia stream from any one of WAN transceiver 201, WLAN transceiver 202, and PAN transceiver 203 and may relay the video and/or multimedia stream to an external device using, for example, WLAN transceiver 202 or PAN transceiver 203. Essentially, this air interface functions similarly to I/O interface 235, but over the wireless link.

Tee '758 at ¶ 30

In one example, mobile terminal 201 may receive a video stream from BS 120 via WAN transceiver 201 and may relay the video stream over a short distance to a remote display device via WLAN transceiver 202 or PAN transceiver 203. This may occur when mobile terminal 201 communicates with BS 120 in a cellular network and the remote display communicates with mobile terminal 110 using, for example, an IEEE-802.11x transceiver (i.e., communicates with WLAN transceiver 202) or a Bluetooth or IEEE-802.15.3x transceiver (i.e., communicates with PAN transceiver 203).

Tee '758 at ¶ 31

In another example, mobile terminal 201 may receive a video stream from a base station or access point of a home or office WLAN via WLAN transceiver 202 and may relay the video stream over a short distance to a remote display device via PAN transceiver 203. This may occur when the base station or access point in the office WLAN communicates with mobile terminal 110 using, for example, an IEEE-802.11x transceiver and the remote display communicates with mobile terminal 110 using, for example, a high data rate Bluetooth transceiver that is capable of supporting the required video data throughput.

Tee '758 at ¶ 32

In a third example, mobile terminal 201 may receive a video stream from a base station, an access point, or a video source device via PAN transceiver 203 and may relay the video stream over a short distance to a remote display device via WLAN transceiver 202. This may occur if the video source with wireless capability transmits a video stream to mobile terminal 110 using, for example, a high data rate Bluetooth

'590 Patent Claim Limitation	Tee '758 Exemplary Disclosure
	transceiver and the remote display communicates with mobile terminal 110 using, for example, an IEEE-802.11x transceiver. Tee '758 at ¶ 33 Control processor 210 executes video/multimedia application program 290 in order to display video data on display 245. Control processor 210 executes video conversion program 270 in order to re-format (if necessary) the video data downloaded from server 150 through the one wireless interface (e.g., WAN transceiver 201) to a suitable format for re-transmission via another wireless interface (e.g., WLAN transceiver 202 or PAN transceiver 203). Additionally, video/multimedia application program 290 may retrieve video/multimedia data from video/multimedia file 280 and transmit a video stream to a remote device via a wireless interface. Advantageously, the wireless interface may have more than one connection at the same time. For example, PAN transceiver 203 may transmit video to television 131 while simultaneously communicating with wireless keyboard 240. To the extent Maxell contends Tee '758 does not disclose this limitation, a person of ordinary skill in the art would have readily arrived at this limitation by combining or modifying it in view of their general knowledge and/or the prior art references disclosed in the corresponding section of Samsung's Invalidity Contentions.
[23pre] 23. A cellular phone, comprising:	To the extent the preamble is limiting, Tee '758 discloses "[a] cellular phone." For example:

Tee '758 at Figure 1

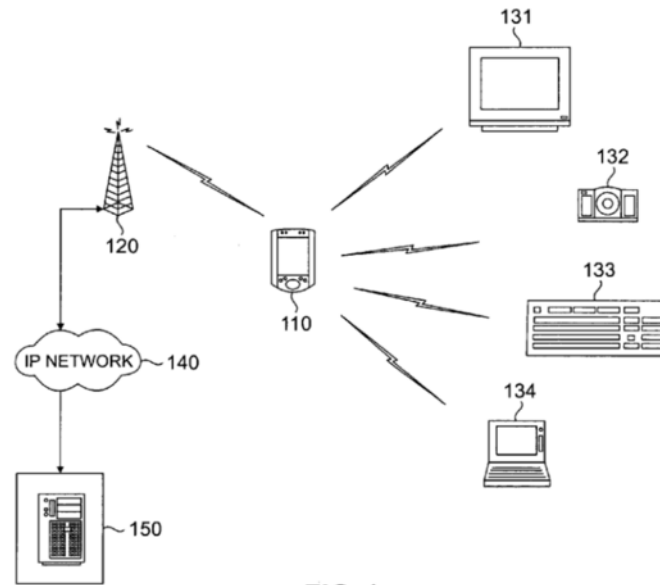


FIG. 1

Tee '758 at ¶ 6

A mobile terminal is provided. According to an advantageous embodiment, the mobile terminal comprises a local display capable of displaying multimedia data, a controller capable of transmitting the multimedia data to the local display, and a first transceiver capable of communicating with a remote display device. The controller is capable of comparing display parameter information associated with the external display device to display parameter information associated with the local display and, in response to the comparison, transmitting the multimedia data to the external display device via the first transceiver.

Tee '758 at ¶ 15

The mobile terminal disclosed herein overcomes the limitations of a small display screen by receiving video data (i.e., display data) over a first wireless interface and transmitting (or relaying) the video data over a second wireless interface to an external (or remote) device having a better (bigger) display, such as a television, a computer monitor, a laptop computer, the dashboard display of a car, a video projection device, and the like. For the purposes of this disclosure and the claims herein, the video data, which may also be referred to as multimedia data, is defined to include not only the video data itself, but may also include the audio data, text data, and control data that may accompany the video data.

Tee '758 at ¶ 18

An exemplary mobile terminal may be used for mobile communications and as a gateway for a short-range wireless network, also called a personal area network (PAN). The mobile terminal may support a variety of mobile applications, including voice, multimedia (i.e., video, graphics, text, and audio downloads), video conferencing, web browsing, file download, VPN and Internet gaming. Advantageously, when the mobile terminal is near a higher quality display (e.g., a TV screen), the mobile terminal relays its video data to the external display device as well as to its internal display. This enables the operator of the mobile terminal to view the information on the higher quality display device, and to share the displayed information with other people at the same location, e.g., in a video conference call, or watching the latest broadcasting and streaming of News or events of common interests. Note that in the latter example, the source of information could be a remote Internet web server instead of a conventional TV broadcasting station. A remote Internet web server does not have the same geographical coverage limit as a conventional TV broadcasting station. In the case of group video conferencing using, for example, a digital camera phone, it would be more practical and ergonomically correct to have the received video data displayed on an external screen, while the phone camera captures and transmits the local user images.

Tee '758 at ¶ 19

FIG. 1 illustrates exemplary mobile terminal 110 operating in a network environment according to an exemplary embodiment of the disclosure. Mobile terminal 110 is depicted in FIG. 1 as a PDA type device. However, this depiction is by way of illustration only and should not be construed so as to limit the scope of the present disclosure. In fact, mobile terminal (MT) 110 may be any type of mobile wireless device that uses a display, including a cellular phone, a PDA, a handheld computer (e.g., Pocket PC™), and even a laptop computer. As an alternative, this mobile terminal may not need to have a high resolution, high quality display, as it could make use of external display device.

Tee '758 at ¶ 20

Mobile terminal 110 is capable of communicating with one or more types of wireless wide-area networks (WANs), including conventional cellular networks and wireless local area networks (WLANs). By way of example, mobile terminal 110 may communicate with base station (BS) 120, which may be associated with a CDMA2000/1xEV-DO/1xEV-DV network, a GSM/GPRS/EDGE network, an IEEE-802.16x network, or the like. In other embodiments, base station 120 may communicate according to such wireless interface standards, or their evolutions, as 1xEV-DO, 1xEV-DV, GSM/GPRS/EDGE, 3GPP UTRAN, HSDPA/HSUPA, 3GPP EUTRAN, TD-CDMA, WiBro, WiMAX, IEEE-802.20, or IEEE-802.11x, among others. Base station 120 provides mobile terminal 110 with access to voice networks,

'590 Patent Claim Limitation	Tee '758 Exemplary Disclosure
	such as the public switched telephone network (PSTN), and to data networks, including, for example, the Internet or proprietary Internet protocol (IP) networks. In the illustrated embodiment, BS 120 provides mobile terminal 110 with access to server 150 via IP network 140. Tee '758 at ¶ 22 According to an advantageous embodiment, mobile terminal 110 may relay a video stream to a remote device in order to allow the operator of mobile terminal 110 to view the video on a better display. By way of example, mobile terminal 110 may be receiving streaming video data from server 150 via IP network 140 and base station 120. The streaming video is displayed on the display of mobile terminal 110. At some point, mobile terminal 110 may be located near to television 131 and establish a wireless communication link via the short-range wireless protocol (e.g., IEEE-802.11x/802.15.3x) with television 131. Mobile terminal 110 may then request information from television 131 regarding the capabilities of the display screen of television 131. Tee '758 at ¶ 23 Assuming television 131 is a more desirable display than mobile terminal 110, mobile terminal 110 may relay the streaming video signal to television 131 via the short-range (or PAN) wireless communication link. This may be done automatically, or mobile terminal 110 may prompt the operator of mobile terminal 110 to select television 131 before relaying the video signal. Similarly, mobile terminal 110 may transmit a video signal over the short-range PAN connection to computer 134, projector 132, or any other remote device that has a display screen. Tee '758 at ¶ 24 It is not required that mobile terminal 110 receive an incoming video stream from base station 120. In an alternate scenario, mobile terminal 110 may execute a video application and/or a multimedia application that plays back a video file and/or multimedia file stored in memory in mobile terminal 110. Mobile terminal 110 then transmits the video (or multimedia) stream from the stored file to television 131 (or another device) for viewing. Tee '758 at ¶ 29 Additionally, depending on the distances involved, mobile terminal 110 may receive an incoming video and/or multimedia stream from any one of WAN transceiver 201, WLAN transceiver 202, and PAN transceiver 203 and may relay the video and/or multimedia stream to an external device using, for example, WLAN transceiver 202 or PAN transceiver 203. Essentially, this air interface functions similarly to I/O interface 235, but over the wireless link.

Tee '758 at ¶ 30

In one example, mobile terminal 201 may receive a video stream from BS 120 via WAN transceiver 201 and may relay the video stream over a short distance to a remote display device via WLAN transceiver 202 or PAN transceiver 203. This may occur when mobile terminal 201 communicates with BS 120 in a cellular network and the remote display communicates with mobile terminal 110 using, for example, an IEEE-802.11x transceiver (i.e., communicates with WLAN transceiver 202) or a Bluetooth or IEEE-802.15.3x transceiver (i.e., communicates with PAN transceiver 203).

Tee '758 at ¶ 31

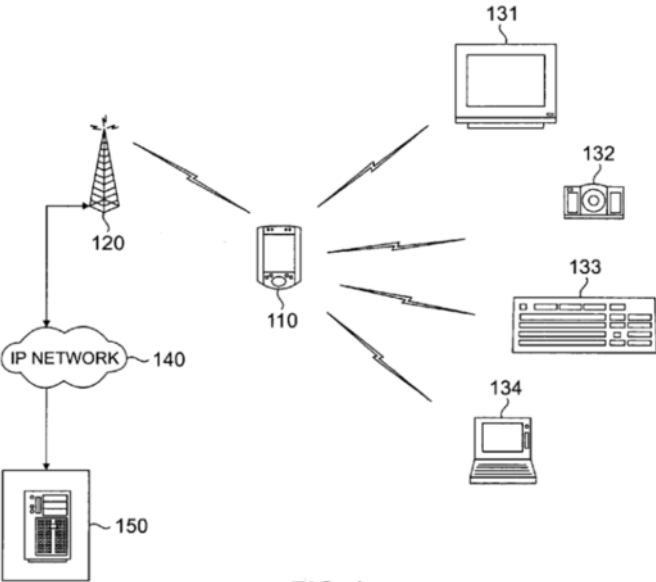
In another example, mobile terminal 201 may receive a video stream from a base station or access point of a home or office WLAN via WLAN transceiver 202 and may relay the video stream over a short distance to a remote display device via PAN transceiver 203. This may occur when the base station or access point in the office WLAN communicates with mobile terminal 110 using, for example, an IEEE-802.11x transceiver and the remote display communicates with mobile terminal 110 using, for example, a high data rate Bluetooth transceiver that is capable of supporting the required video data throughput.

Tee '758 at ¶ 32

In a third example, mobile terminal 201 may receive a video stream from a base station, an access point, or a video source device via PAN transceiver 203 and may relay the video stream over a short distance to a remote display device via WLAN transceiver 202. This may occur if the video source with wireless capability transmits a video stream to mobile terminal 110 using, for example, a high data rate Bluetooth transceiver and the remote display communicates with mobile terminal 110 using, for example, an IEEE-802.11x transceiver.

Tee '758 at ¶ 33

Control processor 210 executes video/multimedia application program 290 in order to display video data on display 245. Control processor 210 executes video conversion program 270 in order to re-format (if necessary) the video data downloaded from server 150 through the one wireless interface (e.g., WAN transceiver 201) to a suitable format for re-transmission via another wireless interface (e.g., WLAN transceiver 202 or PAN transceiver 203). Additionally, video/multimedia application program 290 may retrieve video/multimedia data from video/multimedia file 280 and transmit a video stream to a remote device via a wireless interface. Advantageously, the wireless interface may have more than one connection at the same time. For example, PAN transceiver 203 may transmit video to television 131 while simultaneously communicating with wireless keyboard 240.

'590 Patent Claim Limitation	Tee '758 Exemplary Disclosure
	To the extent Maxell contends Tee '758 does not disclose this limitation, a person of ordinary skill in the art would have readily arrived at this limitation by combining or modifying it in view of their general knowledge and/or the prior art references disclosed in the corresponding section of Samsung's Invalidity Contentions.
[23a] a first radio communication circuit implementing a first transmission scheme having a first modulation scheme and first transmission frequency band, the first radio communication circuit capable of transmitting video information by radio or receiving information by radio using the first transmission frequency band;	Tee '758 discloses “a first radio communication circuit implementing a first transmission scheme having a first modulation scheme and first transmission frequency band, the first radio communication circuit capable of transmitting video information by radio or receiving information by radio using the first transmission frequency band.” For example: Tee '758 at Figure 1  FIG. 1

Tee '758 at Figure 2

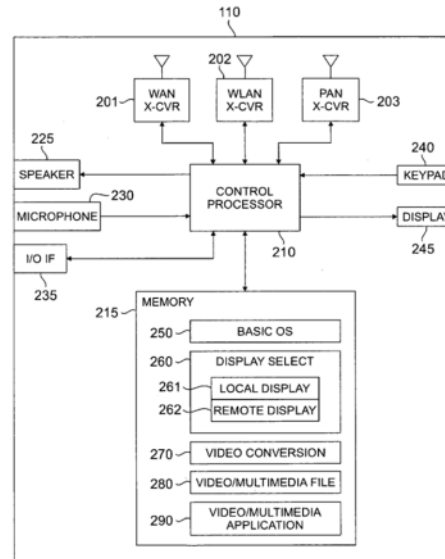


FIG. 2

Tee '758 at ¶ 6

A mobile terminal is provided. According to an advantageous embodiment, the mobile terminal comprises a local display capable of displaying multimedia data, a controller capable of transmitting the multimedia data to the local display, and a first transceiver capable of communicating with a remote display device. The controller is capable of comparing display parameter information associated with the external display device to display parameter information associated with the local display and, in response to the comparison, transmitting the multimedia data to the external display device via the first transceiver.

Tee '758 at ¶ 17

Generally, the first wireless interface supports mobile wireless communications, including, but not limited to IS-2000, 1xEV-DO, 1xEV-DV, GSM/GPRS/EDGE, 3GPP UTRAN, HSDPA/HSUPA, 3GPP EUTRAN, TD-CDMA, WiBro, WiMAX, IEEE-802.16x, IEEE-802.20, and IEEE-802.11x (e.g., WiFi) in a hotspot environment. The second wireless interface typically supports shorter range wireless communications, including, but not limited to IEEE-802.15.3x, MB-OFDM, UWB, Wireless USB, IEEE-802.11x (or WiFi), and a Bluetooth standard that supports high throughput applications

Tee '758 at ¶ 18

An exemplary mobile terminal may be used for mobile communications and as a gateway for a short-range wireless network, also called a personal area network (PAN). The mobile terminal may support a variety of mobile applications, including voice, multimedia (i.e., video, graphics, text, and audio downloads), video conferencing, web browsing, file download, VPN and Internet gaming. Advantageously, when the mobile terminal is near a higher quality display (e.g., a TV screen), the mobile terminal relays its video data to the external display device as well as to its internal display. This enables the operator of the mobile terminal to view the information on the higher quality display device, and to share the displayed information with other people at the same location, e.g., in a video conference call, or watching the latest broadcasting and streaming of News or events of common interests. Note that in the latter example, the source of information could be a remote Internet web server instead of a conventional TV broadcasting station. A remote Internet web server does not have the same geographical coverage limit as a conventional TV broadcasting station. In the case of group video conferencing using, for example, a digital camera phone, it would be more practical and ergonomically correct to have the received video data displayed on an external screen, while the phone camera captures and transmits the local user images.

Tee '758 at ¶ 20

Mobile terminal 110 is capable of communicating with one or more types of wireless wide-area networks (WANs), including conventional cellular networks and wireless local area networks (WLANs). By way of example, mobile terminal 110 may communicate with base station (BS) 120, which may be associated with a CDMA2000/1xEV-DO/1xEV-DV network, a GSM/GPRS/EDGE network, an IEEE-802.16x network, or the like. In other embodiments, base station 120 may communicate according to such wireless interface standards, or their evolutions, as 1xEV-DO, 1xEV-DV, GSM/GPRS/EDGE, 3GPP UTRAN, HSDPA/HSUPA, 3GPP EUTRAN, TD-CDMA, WiBro, WiMAX, IEEE-802.20, or IEEE-802.11x, among others. Base station 120 provides mobile terminal 110 with access to voice networks, such as the public switched telephone network (PSTN), and to data networks, including, for example, the Internet or proprietary Internet protocol (IP) networks. In the illustrated embodiment, BS 120 provides mobile terminal 110 with access to server 150 via IP network 140.

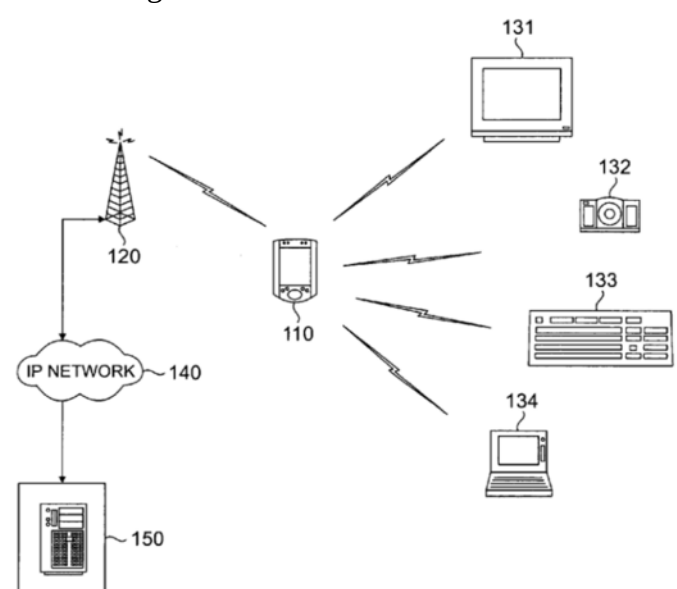
Tee '758 at ¶ 21

Mobile terminal 110 is also capable of communicating with one or more types of external (or remote) devices via a short-range wireless interface standard, such as IEEE-802.11x, ultra-wideband (UWB), IEEE-802.15.3x, MB-OFDM, Wireless USB, or a Bluetooth standard that supports high throughput applications, among others. It is assumed for the purposes of this disclosure that any such remote device

'590 Patent Claim Limitation	Tee '758 Exemplary Disclosure
	comprises a wireless transceiver that can communicate with mobile terminal 110 in order to establish a personal area network (PAN) connection. By way of example, mobile terminal 110 may communicate with television 131 (or computer monitor 131), projector 132, keyboard 133, and laptop (or handheld) personal computer (PC) 134. If the remote device is capable of displaying video (e.g., television 131), it is assumed that the wireless transceiver of the remote device supports a relatively high data rate that is suitable for video applications and/or multimedia applications. Tee '758 at ¶ 22 According to an advantageous embodiment, mobile terminal 110 may relay a video stream to a remote device in order to allow the operator of mobile terminal 110 to view the video on a better display. By way of example, mobile terminal 110 may be receiving streaming video data from server 150 via IP network 140 and base station 120. The streaming video is displayed on the display of mobile terminal 110. At some point, mobile terminal 110 may be located near to television 131 and establish a wireless communication link via the short-range wireless protocol (e.g., IEEE-802.11x/802.15.3x) with television 131. Mobile terminal 110 may then request information from television 131 regarding the capabilities of the display screen of television 131. Tee '758 at ¶ 24 Advantageously, mobile terminal 110 is also capable of establishing a communication link with keyboard 133 (or another input device such as an electronic notepad) via the short-range PAN connection in order to allow the operator of mobile terminal 110 to use keyboard 133 (or the other input device) in lieu of the keyboard or other control buttons on mobile terminal 110. By way of example, mobile terminal 110 may establish a Bluetooth connection to keyboard 133 in order to allow the operator to use keyboard 133 to control mobile terminal 110. In this scenario, the external keyboard, external display and the mobile terminal are connected in the form of a conventional computer, with air interface 1 connecting the computer (with the MT playing the role of the computing unit) to the Internet, and air interface 2 or 3 connecting the computer to the external keyboard and display. If air interface 2 can support both connections between the MT and keyboard or display simultaneously, it is not necessary to have air interface 3. Tee '758 at ¶ 25 FIG. 2 illustrates exemplary mobile terminal 110 in greater detail according to an exemplary embodiment of the disclosure. Mobile terminal 110 comprises wide-area network (WAN) transceiver (X-CVR) 201, wireless local area network (WLAN) transceiver (X-CVR) 202, and personal area network (PAN) transceiver (X-CVR) 203. In an embodiment, only one of WLAN transceiver 202 and PAN transceiver

'590 Patent Claim Limitation	Tee '758 Exemplary Disclosure
	203 may be employed. Mobile terminal 110 also comprises control processor 210, memory 215, speaker 225, microphone 230, input/output interface (I/O IF) 235, keypad 240 and display 245. Memory 215 stores basic operating system (OS) program 250, display select program 260, video conversion program 270, video/multimedia file 280, and one or more video application programs 290. Display select program 260 comprises local display parameters file 261 and remote display parameters file 262. Tee '758 at ¶ 26 Control processor 210 and memory 215 function as a controller that controls the overall operation of mobile terminal 110. Control processor 210 executes basic OS program 250 in order to control, among other things, transceivers 201, 202 and 203. Control processor 210 receives operator inputs from keypad 240 or another user input device (not shown) and displays data on display 245. If mobile terminal 110 is, for example, a cell phone, control processor 210 can receive a voice signal from microphone 230 and can send voice signals to speaker 225. I/O interface 235 allows control processor 210 to be coupled to, and communicate with, another device, including, for example, a docking station, a data cord, an operator input device, or the like. Tee '758 at ¶ 27 In the exemplary embodiment, control processor 210 uses WAN transceiver 201 to communicate over a wide area network. For example, WAN transceiver 201 may be a GSM/GPRS/EDGE transceiver, a CDMA2000/1xEV-DO transceiver, or an IEEE-802.16x transceiver that communicates with base station 120 of a wide-area network. Control processor 210 may use WLAN transceiver 202 to communicate in a wireless local area network (WLAN) environment, such as an office WLAN that may have a coverage area or range of several hundred feet. By way of example, WLAN transceiver 202 may be an IEEE-802.11x transceiver. Control processor 210 may use PAN transceiver 203 to communicate in a personal area network (PAN) environment, such as a Bluetooth or IEEE-802.15.3 communication link that may have a coverage area or range around 10-20 meters. Tee '758 at ¶ 28 In the illustrated embodiment in FIG. 2, three distinct transceivers are shown. However, this is by way of example only. Tee '758 at ¶ 28 In an alternate embodiment, mobile terminal 110 may communicate with BS 120 via a first air interface (or wireless interface) and with an external device that has a display screen via a second air interface (or wireless interface). Thus, mobile terminal 110 may comprise only two transceivers. Advantageously, one

'590 Patent Claim Limitation	Tee '758 Exemplary Disclosure
	or more of transceivers 201-203 may be based on software-defined radio (SDR) technology and therefore may be capable of communicating according to more than one wireless interface standard. Tee '758 at ¶ 36 Under control of display select program 260, control processor 210 compares the parameters in remote display parameters file 262 to the parameters in local display parameters file 261 and selects the display best suited to video/multimedia application program 290. If the display of the external device is selected, control processor 210 transfers the video/multimedia data to the appropriate one of transceivers 202 and 203. Control processor 210 may prompt the operator of mobile terminal 110 for permission to transmit video/multimedia data to the remote display device. Control processor 210 may also continue to send video/multimedia data to display 245 for simultaneous display. In an alternate embodiment, it may be assumed that the remote display is better than display 245. In such an embodiment, control processor 210 may select the remote display (with or without operator permission) without comparing parameters associated with display 245 and the remote display. Tee '758 at claim 1 1. A mobile terminal comprising: a local display capable of displaying multimedia data; a controller capable of transmitting the multimedia data to the local display; and a first transceiver capable of communicating with a remote display device, wherein the controller is capable of comparing display parameter information associated with the remote display device to display parameter information associated with the local display and, in response to the comparison, transmitting the multimedia data to the remote display device via the first transceiver. Tee '758 at claims 15–17 15. The mobile terminal as set forth in claim 9, wherein the first transceiver comprises a personal area network transceiver. 16. The mobile terminal as set forth in claim 15, wherein the personal area network transceiver comprises one of: an IEEE-802.15.3x transceiver, an MB-OFDM transceiver, a UWB transceiver, a wireless USB transceiver, an IEEE-802.11x transceiver, and a Bluetooth transceiver. 17. The mobile terminal as set forth in claim 9, wherein the second transceiver comprises one of an IS-2000 transceiver, a 1xEV-DO transceiver, a 1xEV-DV transceiver, a GSM/GPRS/EDGE transceiver, a 3GPP UTRAN transceiver, an HSDPA/HSUPA transceiver, a 3GPP EUTRAN transceiver, a TD-CDMA transceiver, a WiBro transceiver, a WiMAX transceiver, an IEEE-802.16x transceiver, an IEEE-802.20 transceiver, and an IEEE-802.11x transceiver.

'590 Patent Claim Limitation	Tee '758 Exemplary Disclosure
	To the extent Maxell contends Tee '758 does not disclose this limitation, a person of ordinary skill in the art would have readily arrived at this limitation by combining or modifying it in view of their general knowledge and/or the prior art references disclosed in the corresponding section of Samsung's Invalidity Contentions.
[23b] a second radio communication circuit implementing a second transmission scheme having a second modulation scheme different from the first modulation scheme and a second transmission frequency band different from the first transmission frequency band, the second radio communication circuit capable of connecting by radio to an internet or a home network to transmit and receive information using the second transmission frequency band;	Tee '758 discloses “a second radio communication circuit implementing a second transmission scheme having a second modulation scheme different from the first modulation scheme and a second transmission frequency band different from the first transmission frequency band, the second radio communication circuit capable of connecting by radio to an internet or a home network to transmit and receive information using the second transmission frequency band.” For example: Tee '758 at Figure 1  FIG. 1

Tee '758 at Figure 2

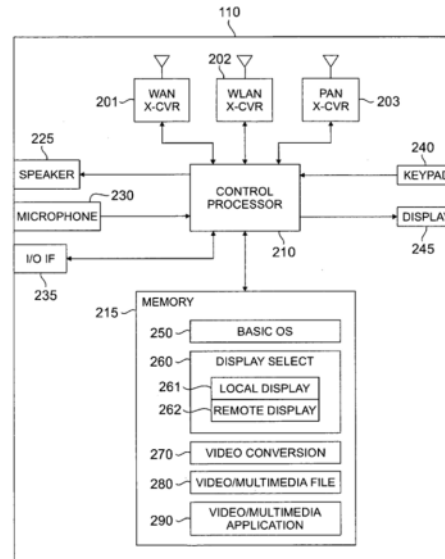


FIG. 2

Tee '758 at ¶ 17

Generally, the first wireless interface supports mobile wireless communications, including, but not limited to IS-2000, 1xEV-DO, 1xEV-DV, GSM/GPRS/EDGE, 3GPP UTRAN, HSDPA/HSUPA, 3GPP EUTRAN, TD-CDMA, WiBro, WiMAX, IEEE-802.16x, IEEE-802.20, and IEEE-802.11x (e.g., WiFi) in a hotspot environment. The second wireless interface typically supports shorter range wireless communications, including, but not limited to IEEE-802.15.3x, MB-OFDM, UWB, Wireless USB, IEEE-802.11x (or WiFi), and a Bluetooth standard that supports high throughput applications

Tee '758 at ¶ 18

An exemplary mobile terminal may be used for mobile communications and as a gateway for a short-range wireless network, also called a personal area network (PAN). The mobile terminal may support a variety of mobile applications, including voice, multimedia (i.e., video, graphics, text, and audio downloads), video conferencing, web browsing, file download, VPN and Internet gaming. Advantageously, when the mobile terminal is near a higher quality display (e.g., a TV screen), the mobile terminal relays its video data to the external display device as well as to its internal display. This enables the operator of the mobile terminal to view the information on the higher quality display device, and to share the displayed information with other people at the same location, e.g., in a video conference call, or

'590 Patent Claim Limitation	Tee '758 Exemplary Disclosure
	watching the latest broadcasting and streaming of News or events of common interests. Note that in the latter example, the source of information could be a remote Internet web server instead of a conventional TV broadcasting station. A remote Internet web server does not have the same geographical coverage limit as a conventional TV broadcasting station. In the case of group video conferencing using, for example, a digital camera phone, it would be more practical and ergonomically correct to have the received video data displayed on an external screen, while the phone camera captures and transmits the local user images. Tee '758 at ¶ 20 Mobile terminal 110 is capable of communicating with one or more types of wireless wide-area networks (WANs), including conventional cellular networks and wireless local area networks (WLANs). By way of example, mobile terminal 110 may communicate with base station (BS) 120, which may be associated with a CDMA2000/1xEV-DO/1xEV-DV network, a GSM/GPRS/EDGE network, an IEEE-802.16x network, or the like. In other embodiments, base station 120 may communicate according to such wireless interface standards, or their evolutions, as 1xEV-DO, 1xEV-DV, GSM/GPRS/EDGE, 3GPP UTRAN, HSDPA/HSUPA, 3GPP EUTRAN, TD-CDMA, WiBro, WiMAX, IEEE-802.20, or IEEE-802.11x, among others. Base station 120 provides mobile terminal 110 with access to voice networks, such as the public switched telephone network (PSTN), and to data networks, including, for example, the Internet or proprietary Internet protocol (IP) networks. In the illustrated embodiment, BS 120 provides mobile terminal 110 with access to server 150 via IP network 140. Tee '758 at ¶ 21 Mobile terminal 110 is also capable of communicating with one or more types of external (or remote) devices via a short-range wireless interface standard, such as IEEE-802.11x, ultra-wideband (UWB), IEEE-802.15.3x, MB-OFDM, Wireless USB, or a Bluetooth standard that supports high throughput applications, among others. It is assumed for the purposes of this disclosure that any such remote device comprises a wireless transceiver that can communicate with mobile terminal 110 in order to establish a personal area network (PAN) connection. By way of example, mobile terminal 110 may communicate with television 131 (or computer monitor 131), projector 132, keyboard 133, and laptop (or handheld) personal computer (PC) 134. If the remote device is capable of displaying video (e.g., television 131), it is assumed that the wireless transceiver of the remote device supports a relatively high data rate that is suitable for video applications and/or multimedia applications.

Tee '758 at ¶ 24

Advantageously, mobile terminal 110 is also capable of establishing a communication link with keyboard 133 (or another input device such as an electronic notepad) via the short-range PAN connection in order to allow the operator of mobile terminal 110 to use keyboard 133 (or the other input device) in lieu of the keyboard or other control buttons on mobile terminal 110. By way of example, mobile terminal 110 may establish a Bluetooth connection to keyboard 133 in order to allow the operator to use keyboard 133 to control mobile terminal 110. In this scenario, the external keyboard, external display and the mobile terminal are connected in the form of a conventional computer, with air interface 1 connecting the computer (with the MT playing the role of the computing unit) to the Internet, and air interface 2 or 3 connecting the computer to the external keyboard and display. If air interface 2 can support both connections between the MT and keyboard or display simultaneously, it is not necessary to have air interface 3.

Tee '758 at ¶ 25

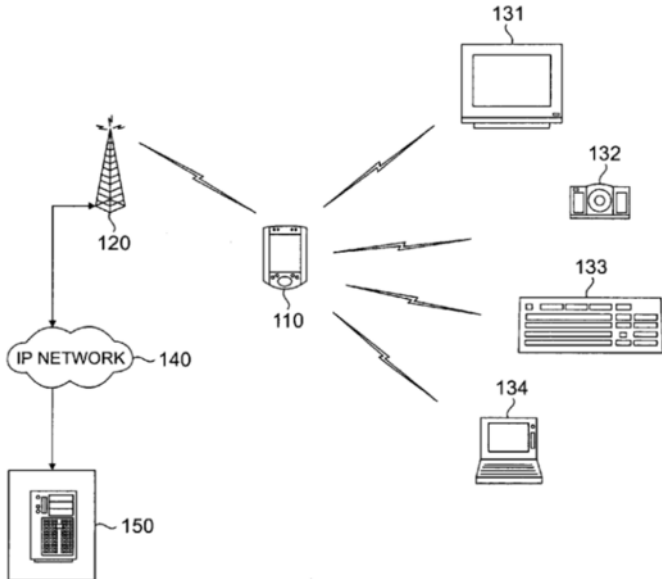
FIG. 2 illustrates exemplary mobile terminal 110 in greater detail according to an exemplary embodiment of the disclosure. Mobile terminal 110 comprises wide-area network (WAN) transceiver (X-CVR) 201, wireless local area network (WLAN) transceiver (X-CVR) 202, and personal area network (PAN) transceiver (X-CVR) 203. In an embodiment, only one of WLAN transceiver 202 and PAN transceiver 203 may be employed. Mobile terminal 110 also comprises control processor 210, memory 215, speaker 225, microphone 230, input/output interface (I/O IF) 235, keypad 240 and display 245. Memory 215 stores basic operating system (OS) program 250, display select program 260, video conversion program 270, video/multimedia file 280, and one or more video application programs 290. Display select program 260 comprises local display parameters file 261 and remote display parameters file 262.

Tee '758 at ¶ 26

Control processor 210 and memory 215 function as a controller that controls the overall operation of mobile terminal 110. Control processor 210 executes basic OS program 250 in order to control, among other things, transceivers 201, 202 and 203. Control processor 210 receives operator inputs from keypad 240 or another user input device (not shown) and displays data on display 245. If mobile terminal 110 is, for example, a cell phone, control processor 210 can receive a voice signal from microphone 230 and can send voice signals to speaker 225. I/O interface 235 allows control processor 210 to be coupled to, and communicate with, another device, including, for example, a docking station, a data cord, an operator input device, or the like.

Tee '758 at ¶ 27

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	In the exemplary embodiment, control processor 210 uses WAN transceiver 201 to communicate over a wide area network. For example, WAN transceiver 201 may be a GSM/GPRS/EDGE transceiver, a CDMA2000/1xEV-DO transceiver, or an IEEE-802.16x transceiver that communicates with base station 120 of a wide-area network. Control processor 210 may use WLAN transceiver 202 to communicate in a wireless local area network (WLAN) environment, such as an office WLAN that may have a coverage area or range of several hundred feet. By way of example, WLAN transceiver 202 may be an IEEE-802.11x transceiver. Control processor 210 may use PAN transceiver 203 to communicate in a personal area network (PAN) environment, such as a Bluetooth or IEEE-802.15.3 communication link that may have a coverage area or range around 10-20 meters. Tee '758 at ¶ 28 In the illustrated embodiment in FIG. 2, three distinct transceivers are shown. However, this is by way of example only. Tee '758 at ¶ 28 In an alternate embodiment, mobile terminal 110 may communicate with BS 120 via a first air interface (or wireless interface) and with an external device that has a display screen via a second air interface (or wireless interface). Thus, mobile terminal 110 may comprise only two transceivers. Advantageously, one or more of transceivers 201-203 may be based on software-defined radio (SDR) technology and therefore may be capable of communicating according to more than one wireless interface standard. Tee '758 at claim 9 9. The mobile terminal as set forth in claim 1, further comprising a second transceiver capable of communicating with a wireless network. Tee '758 at claims 15–17 15. The mobile terminal as set forth in claim 9, wherein the first transceiver comprises a personal area network transceiver. 16. The mobile terminal as set forth in claim 15, wherein the personal area network transceiver comprises one of: an IEEE-802.15.3x transceiver, an MB-OFDM transceiver, a UWB transceiver, a wireless USB transceiver, an IEEE-802.11x transceiver, and a Bluetooth transceiver. 17. The mobile terminal as set forth in claim 9, wherein the second transceiver comprises one of an IS-2000 transceiver, a 1xEV-DO transceiver, a 1xEV-DV transceiver, a GSM/GPRS/EDGE transceiver, a 3GPP UTRAN transceiver, an HSDPA/HSUPA transceiver, a 3GPP EUTRAN transceiver, a TD-CDMA

'590 Patent Claim Limitation	Tee '758 Exemplary Disclosure
	transceiver, a WiBro transceiver, a WiMAX transceiver, an IEEE-802.16x transceiver, an IEEE-802.20 transceiver, and an IEEE-802.11x transceiver. To the extent Maxell contends Tee '758 does not disclose this limitation, a person of ordinary skill in the art would have readily arrived at this limitation by combining or modifying it in view of their general knowledge and/or the prior art references disclosed in the corresponding section of Samsung's Invalidity Contentions.
[23c] a third radio communication circuit capable of transmitting information using a third transmission frequency band;	Tee '758 discloses “a third radio communication circuit capable of transmitting information using a third transmission frequency band.” For example: Tee '758 at Figure 1  FIG. 1

Tee '758 at Figure 2

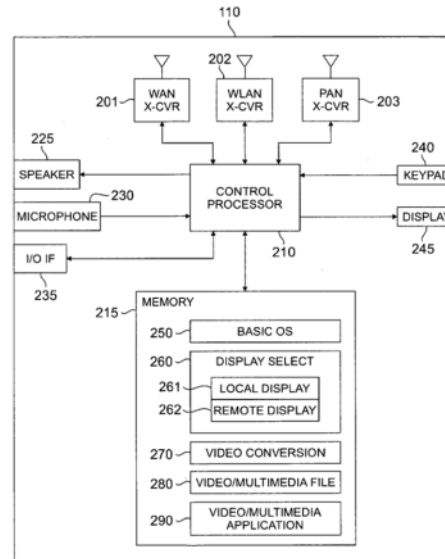


FIG. 2

Tee '758 at ¶ 17

Generally, the first wireless interface supports mobile wireless communications, including, but not limited to IS-2000, 1xEV-DO, 1xEV-DV, GSM/GPRS/EDGE, 3GPP UTRAN, HSDPA/HSUPA, 3GPP EUTRAN, TD-CDMA, WiBro, WiMAX, IEEE-802.16x, IEEE-802.20, and IEEE-802.11x (e.g., WiFi) in a hotspot environment. The second wireless interface typically supports shorter range wireless communications, including, but not limited to IEEE-802.15.3x, MB-OFDM, UWB, Wireless USB, IEEE-802.11x (or WiFi), and a Bluetooth standard that supports high throughput applications

Tee '758 at ¶ 20

Mobile terminal 110 is capable of communicating with one or more types of wireless wide-area networks (WANs), including conventional cellular networks and wireless local area networks (WLANs). By way of example, mobile terminal 110 may communicate with base station (BS) 120, which may be associated with a CDMA2000/1xEV-DO/1xEV-DV network, a GSM/GPRS/EDGE network, an IEEE-802.16x network, or the like. In other embodiments, base station 120 may communicate according to such wireless interface standards, or their evolutions, as 1xEV-DO, 1xEV-DV, GSM/GPRS/EDGE, 3GPP UTRAN, HSDPA/HSUPA, 3GPP EUTRAN, TD-CDMA, WiBro, WiMAX, IEEE-802.20, or IEEE-802.11x, among others. Base station 120 provides mobile terminal 110 with access to voice networks,

'590 Patent Claim Limitation	Tee '758 Exemplary Disclosure
	such as the public switched telephone network (PSTN), and to data networks, including, for example, the Internet or proprietary Internet protocol (IP) networks. In the illustrated embodiment, BS 120 provides mobile terminal 110 with access to server 150 via IP network 140. Tee '758 at ¶ 21 Mobile terminal 110 is also capable of communicating with one or more types of external (or remote) devices via a short-range wireless interface standard, such as IEEE-802.11x, ultra-wideband (UWB), IEEE-802.15.3x, MB-OFDM, Wireless USB, or a Bluetooth standard that supports high throughput applications, among others. It is assumed for the purposes of this disclosure that any such remote device comprises a wireless transceiver that can communicate with mobile terminal 110 in order to establish a personal area network (PAN) connection. By way of example, mobile terminal 110 may communicate with television 131 (or computer monitor 131), projector 132, keyboard 133, and laptop (or handheld) personal computer (PC) 134. If the remote device is capable of displaying video (e.g., television 131), it is assumed that the wireless transceiver of the remote device supports a relatively high data rate that is suitable for video applications and/or multimedia applications. Tee '758 at ¶ 24 Advantageously, mobile terminal 110 is also capable of establishing a communication link with keyboard 133 (or another input device such as an electronic notepad) via the short-range PAN connection in order to allow the operator of mobile terminal 110 to use keyboard 133 (or the other input device) in lieu of the keyboard or other control buttons on mobile terminal 110. By way of example, mobile terminal 110 may establish a Bluetooth connection to keyboard 133 in order to allow the operator to use keyboard 133 to control mobile terminal 110. In this scenario, the external keyboard, external display and the mobile terminal are connected in the form of a conventional computer, with air interface 1 connecting the computer (with the MT playing the role of the computing unit) to the Internet, and air interface 2 or 3 connecting the computer to the external keyboard and display. If air interface 2 can support both connections between the MT and keyboard or display simultaneously, it is not necessary to have air interface 3. Tee '758 at ¶ 25 FIG. 2 illustrates exemplary mobile terminal 110 in greater detail according to an exemplary embodiment of the disclosure. Mobile terminal 110 comprises wide-area network (WAN) transceiver (X-CVR) 201, wireless local area network (WLAN) transceiver (X-CVR) 202, and personal area network (PAN) transceiver (X-CVR) 203. In an embodiment, only one of WLAN transceiver 202 and PAN transceiver 203 may be employed. Mobile terminal 110 also comprises control processor 210, memory 215, speaker

'590 Patent Claim Limitation	Tee '758 Exemplary Disclosure
	225, microphone 230, input/output interface (I/O IF) 235, keypad 240 and display 245. Memory 215 stores basic operating system (OS) program 250, display select program 260, video conversion program 270, video/multimedia file 280, and one or more video application programs 290. Display select program 260 comprises local display parameters file 261 and remote display parameters file 262. Tee '758 at ¶ 26 Control processor 210 and memory 215 function as a controller that controls the overall operation of mobile terminal 110. Control processor 210 executes basic OS program 250 in order to control, among other things, transceivers 201, 202 and 203. Control processor 210 receives operator inputs from keypad 240 or another user input device (not shown) and displays data on display 245. If mobile terminal 110 is, for example, a cell phone, control processor 210 can receive a voice signal from microphone 230 and can send voice signals to speaker 225. I/O interface 235 allows control processor 210 to be coupled to, and communicate with, another device, including, for example, a docking station, a data cord, an operator input device, or the like. Tee '758 at ¶ 27 In the exemplary embodiment, control processor 210 uses WAN transceiver 201 to communicate over a wide area network. For example, WAN transceiver 201 may be a GSM/GPRS/EDGE transceiver, a CDMA2000/1xEV-DO transceiver, or an IEEE-802.16x transceiver that communicates with base station 120 of a wide-area network. Control processor 210 may use WLAN transceiver 202 to communicate in a wireless local area network (WLAN) environment, such as an office WLAN that may have a coverage area or range of several hundred feet. By way of example, WLAN transceiver 202 may be an IEEE-802.11x transceiver. Control processor 210 may use PAN transceiver 203 to communicate in a personal area network (PAN) environment, such as a Bluetooth or IEEE-802.15.3 communication link that may have a coverage area or range around 10-20 meters. Tee '758 at ¶ 28 In the illustrated embodiment in FIG. 2, three distinct transceivers are shown. However, this is by way of example only. Tee '758 at ¶ 28 In an alternate embodiment, mobile terminal 110 may communicate with BS 120 via a first air interface (or wireless interface) and with an external device that has a display screen via a second air interface (or wireless interface). Thus, mobile terminal 110 may comprise only two transceivers. Advantageously, one

'590 Patent Claim Limitation	Tee '758 Exemplary Disclosure
	or more of transceivers 201-203 may be based on software-defined radio (SDR) technology and therefore may be capable of communicating according to more than one wireless interface standard. Tee '758 at claims 15–17 15. The mobile terminal as set forth in claim 9, wherein the first transceiver comprises a personal area network transceiver. 16. The mobile terminal as set forth in claim 15, wherein the personal area network transceiver comprises one of: an IEEE-802.15.3x transceiver, an MB-OFDM transceiver, a UWB transceiver, a wireless USB transceiver, an IEEE-802.11x transceiver, and a Bluetooth transceiver. 17. The mobile terminal as set forth in claim 9, wherein the second transceiver comprises one of an IS-2000 transceiver, a 1xEV-DO transceiver, a 1xEV-DV transceiver, a GSM/GPRS/EDGE transceiver, a 3GPP UTRAN transceiver, an HSDPA/HSUPA transceiver, a 3GPP EUTRAN transceiver, a TD-CDMA transceiver, a WiBro transceiver, a WiMAX transceiver, an IEEE-802.16x transceiver, an IEEE-802.20 transceiver, and an IEEE-802.11x transceiver. To the extent Maxell contends Tee '758 does not disclose this limitation, a person of ordinary skill in the art would have readily arrived at this limitation by combining or modifying it in view of their general knowledge and/or the prior art references disclosed in the corresponding section of Samsung's Invalidity Contentions.
[23d] a fourth radio communication circuit capable of transmitting information using a fourth transmission frequency band;	Tee '758 discloses “a fourth radio communication circuit capable of transmitting information using a fourth transmission frequency band.” For example: Tee '758 at ¶ 17 Generally, the first wireless interface supports mobile wireless communications, including, but not limited to IS-2000, 1xEV-DO, 1xEV-DV, GSM/GPRS/EDGE, 3GPP UTRAN, HSDPA/HSUPA, 3GPP EUTRAN, TD-CDMA, WiBro, WiMAX, IEEE-802.16x, IEEE-802.20, and IEEE-802.11x (e.g., WiFi) in a hotspot environment. The second wireless interface typically supports shorter range wireless communications, including, but not limited to IEEE-802.15.3x, MB-OFDM, UWB, Wireless USB, IEEE-802.11x (or WiFi), and a Bluetooth standard that supports high throughput applications Tee '758 at ¶ 25 FIG. 2 illustrates exemplary mobile terminal 110 in greater detail according to an exemplary embodiment of the disclosure. Mobile terminal 110 comprises wide-area network (WAN) transceiver (X-CVR) 201, wireless local area network (WLAN) transceiver (X-CVR) 202, and personal area network (PAN)

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	transceiver (X-CVR) 203. In an embodiment, only one of WLAN transceiver 202 and PAN transceiver 203 may be employed. Mobile terminal 110 also comprises control processor 210, memory 215, speaker 225, microphone 230, input/output interface (I/O IF) 235, keypad 240 and display 245. Memory 215 stores basic operating system (OS) program 250, display select program 260, video conversion program 270, video/multimedia file 280, and one or more video application programs 290. Display select program 260 comprises local display parameters file 261 and remote display parameters file 262. Tee '758 at ¶ 26 Control processor 210 and memory 215 function as a controller that controls the overall operation of mobile terminal 110. Control processor 210 executes basic OS program 250 in order to control, among other things, transceivers 201, 202 and 203. Control processor 210 receives operator inputs from keypad 240 or another user input device (not shown) and displays data on display 245. If mobile terminal 110 is, for example, a cell phone, control processor 210 can receive a voice signal from microphone 230 and can send voice signals to speaker 225. I/O interface 235 allows control processor 210 to be coupled to, and communicate with, another device, including, for example, a docking station, a data cord, an operator input device, or the like. Tee '758 at ¶ 27 In the exemplary embodiment, control processor 210 uses WAN transceiver 201 to communicate over a wide area network. For example, WAN transceiver 201 may be a GSM/GPRS/EDGE transceiver, a CDMA2000/1xEV-DO transceiver, or an IEEE-802.16x transceiver that communicates with base station 120 of a wide-area network. Control processor 210 may use WLAN transceiver 202 to communicate in a wireless local area network (WLAN) environment, such as an office WLAN that may have a coverage area or range of several hundred feet. By way of example, WLAN transceiver 202 may be an IEEE-802.11x transceiver. Control processor 210 may use PAN transceiver 203 to communicate in a personal area network (PAN) environment, such as a Bluetooth or IEEE-802.15.3 communication link that may have a coverage area or range around 10-20 meters. Tee '758 at ¶ 28 In the illustrated embodiment in FIG. 2, three distinct transceivers are shown. However, this is by way of example only. Tee '758 at ¶ 28 In an alternate embodiment, mobile terminal 110 may communicate with BS 120 via a first air interface (or wireless interface) and with an external device that has a display screen via a second air interface (or

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	wireless interface). Thus, mobile terminal 110 may comprise only two transceivers. Advantageously, one or more of transceivers 201-203 may be based on software-defined radio (SDR) technology and therefore may be capable of communicating according to more than one wireless interface standard. Tee '758 at ¶ 29 Additionally, depending on the distances involved, mobile terminal 110 may receive an incoming video and/or multimedia stream from any one of WAN transceiver 201, WLAN transceiver 202, and PAN transceiver 203 and may relay the video and/or multimedia stream to an external device using, for example, WLAN transceiver 202 or PAN transceiver 203. Essentially, this air interface functions similarly to I/O interface 235, but over the wireless link. Tee '758 at ¶ 30 In one example, mobile terminal 201 may receive a video stream from BS 120 via WAN transceiver 201 and may relay the video stream over a short distance to a remote display device via WLAN transceiver 202 or PAN transceiver 203. This may occur when mobile terminal 201 communicates with BS 120 in a cellular network and the remote display communicates with mobile terminal 110 using, for example, an IEEE-802.11x transceiver (i.e., communicates with WLAN transceiver 202) or a Bluetooth or IEEE-802.15.3x transceiver (i.e., communicates with PAN transceiver 203). Tee '758 at ¶ 37 FIG. 3 depicts flow diagram 300, which illustrates the operation of exemplary mobile terminal 110 and a remote display device according to one embodiment of the disclosure. Initially, mobile terminal 110 accesses base station 120 via an air interface (e.g., transceiver 201 or 202) and initiates a video/multimedia download from server 150 (process step 305). Alternatively, mobile terminal 110 may play back video/multimedia data stored in video/multimedia file 280. At some point, mobile terminal 110 detects the presence of a remote display device (e.g., television 131) via another air interface (e.g., transceiver 202 or 203) and establishes a wireless link with the remote display device (process step 310), with the authorization of the mobile terminal user. Tee '758 at ¶ 38 Mobile terminal 110 then requests the capabilities of the remote display device and compares the capabilities of the remote display device and local display 245 (process step 315). Mobile terminal 110 may prompt the operator to select the remote display device (process step 320). Assuming the remote display device is selected, mobile terminal 110 then forwards (or relays or re-transmits) the video stream from base station 120 (or video/multimedia file 280) to the remote display device (process step 325).

'590 Patent Claim Limitation	Tee '758 Exemplary Disclosure
	Optionally, mobile terminal 110 may wirelessly communicate with a remote user input device, such as keyboard 133 (process step 330). Optionally, if video/multimedia application program 290 is a video conferencing application, mobile terminal 110 receives via the short-range air interface video/multimedia data from a remote video camera and relays the camera video data to base station 120 (process step 335). Tee '758 at claims 15–17 15. The mobile terminal as set forth in claim 9, wherein the first transceiver comprises a personal area network transceiver. 16. The mobile terminal as set forth in claim 15, wherein the personal area network transceiver comprises one of: an IEEE-802.15.3x transceiver, an MB-OFDM transceiver, a UWB transceiver, a wireless USB transceiver, an IEEE-802.11x transceiver, and a Bluetooth transceiver. 17. The mobile terminal as set forth in claim 9, wherein the second transceiver comprises one of an IS-2000 transceiver, a 1xEV-DO transceiver, a 1xEV-DV transceiver, a GSM/GPRS/EDGE transceiver, a 3GPP UTRAN transceiver, an HSDPA/HSUPA transceiver, a 3GPP EUTRAN transceiver, a TD-CDMA transceiver, a WiBro transceiver, a WiMAX transceiver, an IEEE-802.16x transceiver, an IEEE-802.20 transceiver, and an IEEE-802.11x transceiver. To the extent Maxell contends Tee '758 does not disclose this limitation, a person of ordinary skill in the art would have readily arrived at this limitation by combining or modifying it in view of their general knowledge and/or the prior art references disclosed in the corresponding section of Samsung's Invalidity Contentions.
[23e] an imaging circuit capable of receiving video information and still picture information via an optical system;	Tee '758 discloses “an imaging circuit capable of receiving video information and still picture information via an optical system.” For example: Tee '758 at ¶ 18 An exemplary mobile terminal may be used for mobile communications and as a gateway for a short-range wireless network, also called a personal area network (PAN). The mobile terminal may support a variety of mobile applications, including voice, multimedia (i.e., video, graphics, text, and audio downloads), video conferencing, web browsing, file download, VPN and Internet gaming. Advantageously, when the mobile terminal is near a higher quality display (e.g., a TV screen), the mobile terminal relays its video data to the external display device as well as to its internal display. This enables the operator of the mobile terminal to view the information on the higher quality display device, and to share the displayed information with other people at the same location, e.g., in a video conference call, or watching the latest broadcasting and streaming of News or events of common interests. Note that in the

'590 Patent Claim Limitation	Tee '758 Exemplary Disclosure
	latter example, the source of information could be a remote Internet web server instead of a conventional TV broadcasting station. A remote Internet web server does not have the same geographical coverage limit as a conventional TV broadcasting station. In the case of group video conferencing using, for example, a digital camera phone, it would be more practical and ergonomically correct to have the received video data displayed on an external screen, while the phone camera captures and transmits the local user images. Tee '758 at ¶ 35 Under control of display select program 260, control processor 210 is capable of querying the remote device (e.g., television 131) to determine the quality of the display associated with the remote device, for example, by requesting the remote device to transmit parameters or attributes describing the capabilities of the remote device. If the attributes of the external display device are available, the data can be formatted accordingly before transmission through the second interface to the display device. However, it is not always necessary for the remote device to have the capability to respond to such an inquiry. Any standard protocol that is supported by the air interface would be sufficient for the mobile terminal to transmit the video data, and the similar air interface of the display device to receive, demodulate and decode the data. Nevertheless, it is assumed that the external display device has the capability to decode the received data and convert it to a signal/pixel format that is supported by the display mechanism, e.g., a MPEG4 decoder, and/or a Digital-to-Analog converter. Control processor 210 receives the display parameters associated with the remote device and stores these parameters in remote display parameters file 262. The parameters associated with display 245 are stored in local display parameters file 261. The parameter data may include, for example, display size, display type (CRT, LED, etc.), pixel size, refresh rate, and the like. Tee '758 at ¶ 38 Mobile terminal 110 then requests the capabilities of the remote display device and compares the capabilities of the remote display device and local display 245 (process step 315). Mobile terminal 110 may prompt the operator to select the remote display device (process step 320). Assuming the remote display device is selected, mobile terminal 110 then forwards (or relays or re-transmits) the video stream from base station 120 (or video/multimedia file 280) to the remote display device (process step 325). Optionally, mobile terminal 110 may wirelessly communicate with a remote user input device, such as keyboard 133 process step 330). Optionally, if video/multimedia application program 290 is a video conferencing application, mobile terminal 110 receives via the short-range air interface video/multimedia data from a remote video camera and relays the camera video data to base station 120 (process step 335).

'590 Patent Claim Limitation	Tee '758 Exemplary Disclosure
	To the extent Maxell contends Tee '758 does not disclose this limitation, a person of ordinary skill in the art would have readily arrived at this limitation by combining or modifying it in view of their general knowledge and/or the prior art references disclosed in the corresponding section of Samsung's Invalidity Contentions.
[23f] a compression circuit compressing the still picture information using a first type of compression method and the video information using a second type of compression method;	Tee '758 discloses “a compression circuit compressing the still picture information using a first type of compression method and the video information using a second type of compression method.” For example: Tee '758 at ¶ 18 An exemplary mobile terminal may be used for mobile communications and as a gateway for a short-range wireless network, also called a personal area network (PAN). The mobile terminal may support a variety of mobile applications, including voice, multimedia (i.e., video, graphics, text, and audio downloads), video conferencing, web browsing, file download, VPN and Internet gaming. Advantageously, when the mobile terminal is near a higher quality display (e.g., a TV screen), the mobile terminal relays its video data to the external display device as well as to its internal display. This enables the operator of the mobile terminal to view the information on the higher quality display device, and to share the displayed information with other people at the same location, e.g., in a video conference call, or watching the latest broadcasting and streaming of News or events of common interests. Note that in the latter example, the source of information could be a remote Internet web server instead of a conventional TV broadcasting station. A remote Internet web server does not have the same geographical coverage limit as a conventional TV broadcasting station. In the case of group video conferencing using, for example, a digital camera phone, it would be more practical and ergonomically correct to have the received video data displayed on an external screen, while the phone camera captures and transmits the local user images. Tee '758 at ¶ 35 Under control of display select program 260, control processor 210 is capable of querying the remote device (e.g., television 131) to determine the quality of the display associated with the remote device, for example, by requesting the remote device to transmit parameters or attributes describing the capabilities of the remote device. If the attributes of the external display device are available, the data can be formatted accordingly before transmission through the second interface to the display device. However, it is not always necessary for the remote device to have the capability to respond to such an inquiry. Any standard protocol that is supported by the air interface would be sufficient for the mobile terminal to transmit the video data, and the similar air interface of the display device to receive, demodulate and

'590 Patent Claim Limitation	Tee '758 Exemplary Disclosure
	decode the data. Nevertheless, it is assumed that the external display device has the capability to decode the received data and convert it to a signal/pixel format that is supported by the display mechanism, e.g., a MPEG4 decoder, and/or a Digital-to-Analog converter. Control processor 210 receives the display parameters associated with the remote device and stores these parameters in remote display parameters file 262. The parameters associated with display 245 are stored in local display parameters file 261. The parameter data may include, for example, display size, display type (CRT, LED, etc.), pixel size, refresh rate, and the like. Tee '758 at ¶ 38 Mobile terminal 110 then requests the capabilities of the remote display device and compares the capabilities of the remote display device and local display 245 (process step 315). Mobile terminal 110 may prompt the operator to select the remote display device (process step 320). Assuming the remote display device is selected, mobile terminal 110 then forwards (or relays or re-transmits) the video stream from base station 120 (or video/multimedia file 280) to the remote display device (process step 325). Optionally, mobile terminal 110 may wirelessly communicate with a remote user input device, such as keyboard 133 process step 330). Optionally, if video/multimedia application program 290 is a video conferencing application, mobile terminal 110 receives via the short-range air interface video/multimedia data from a remote video camera and relays the camera video data to base station 120 (process step 335). To the extent Maxell contends Tee '758 does not disclose this limitation, a person of ordinary skill in the art would have readily arrived at this limitation by combining or modifying it in view of their general knowledge and/or the prior art references disclosed in the corresponding section of Samsung's Invalidity Contentions.
[23g] a microphone receiving audio information corresponding to the video information received via the imaging circuit;	Tee '758 discloses "a microphone receiving audio information corresponding to the video information received via the imaging circuit." For example:

Tee '758 at Figure 2

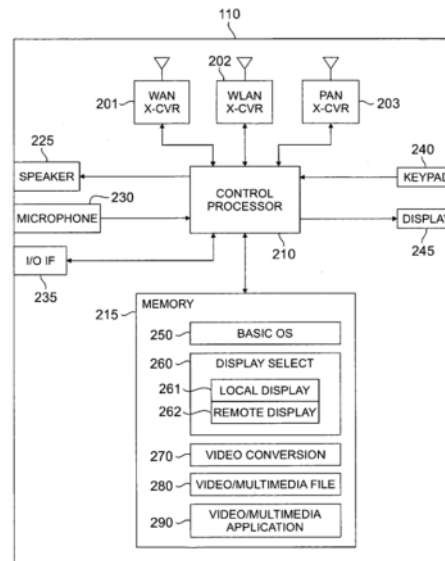


FIG. 2

Tee '758 at ¶ 18

An exemplary mobile terminal may be used for mobile communications and as a gateway for a short-range wireless network, also called a personal area network (PAN). The mobile terminal may support a variety of mobile applications, including voice, multimedia (i.e., video, graphics, text, and audio downloads), video conferencing, web browsing, file download, VPN and Internet gaming. Advantageously, when the mobile terminal is near a higher quality display (e.g., a TV screen), the mobile terminal relays its video data to the external display device as well as to its internal display. This enables the operator of the mobile terminal to view the information on the higher quality display device, and to share the displayed information with other people at the same location, e.g., in a video conference call, or watching the latest broadcasting and streaming of News or events of common interests. Note that in the latter example, the source of information could be a remote Internet web server instead of a conventional TV broadcasting station. A remote Internet web server does not have the same geographical coverage limit as a conventional TV broadcasting station. In the case of group video conferencing using, for example, a digital camera phone, it would be more practical and ergonomically correct to have the received video data displayed on an external screen, while the phone camera captures and transmits the local user images.

'590 Patent Claim Limitation	Tee '758 Exemplary Disclosure
	Tee '758 at ¶ 25 FIG. 2 illustrates exemplary mobile terminal 110 in greater detail according to an exemplary embodiment of the disclosure. Mobile terminal 110 comprises wide-area network (WAN) transceiver (X-CVR) 201, wireless local area network (WLAN) transceiver (X-CVR) 202, and personal area network (PAN) transceiver (X-CVR) 203. In an embodiment, only one of WLAN transceiver 202 and PAN transceiver 203 may be employed. Mobile terminal 110 also comprises control processor 210, memory 215, speaker 225, microphone 230, input/output interface (I/O IF) 235, keypad 240 and display 245. Memory 215 stores basic operating system (OS) program 250, display select program 260, video conversion program 270, video/multimedia file 280, and one or more video application programs 290. Display select program 260 comprises local display parameters file 261 and remote display parameters file 262. To the extent Maxell contends Tee '758 does not disclose this limitation, a person of ordinary skill in the art would have readily arrived at this limitation by combining or modifying it in view of their general knowledge and/or the prior art references disclosed in the corresponding section of Samsung's Invalidity Contentions.
[23h] an accumulation circuit capable of accumulating video information received by the imaging circuit and audio information received by the microphone, wherein the first radio communication circuit can transmit video information accumulated in the accumulation circuit to an external device by radio;	Tee '758 discloses “an accumulation circuit capable of accumulating video information received by the imaging circuit and audio information received by the microphone, wherein the first radio communication circuit can transmit video information accumulated in the accumulation circuit to an external device by radio.” For example: Tee '758 at ¶ 6 A mobile terminal is provided. According to an advantageous embodiment, the mobile terminal comprises a local display capable of displaying multimedia data, a controller capable of transmitting the multimedia data to the local display, and a first transceiver capable of communicating with a remote display device. The controller is capable of comparing display parameter information associated with the external display device to display parameter information associated with the local display and, in response to the comparison, transmitting the multimedia data to the external display device via the first transceiver. Tee '758 at ¶ 17 Generally, the first wireless interface supports mobile wireless communications, including, but not limited to IS-2000, 1xEV-DO, 1xEV-DV, GSM/GPRS/EDGE, 3GPP UTRAN, HSDPA/HSUPA, 3GPP EUTRAN, TD-CDMA, WiBro, WiMAX, IEEE-802.16x, IEEE-802.20, and IEEE-802.11x (e.g., WiFi)

'590 Patent Claim Limitation	Tee '758 Exemplary Disclosure
	in a hotspot environment. The second wireless interface typically supports shorter range wireless communications, including, but not limited to IEEE-802.15.3x, MB-OFDM, UWB, Wireless USB, IEEE-802.11x (or WiFi), and a Bluetooth standard that supports high throughput applications Tee '758 at ¶ 21 Mobile terminal 110 is also capable of communicating with one or more types of external (or remote) devices via a short-range wireless interface standard, such as IEEE-802.11x, ultra-wideband (UWB), IEEE-802.15.3x, MB-OFDM, Wireless USB, or a Bluetooth standard that supports high throughput applications, among others. It is assumed for the purposes of this disclosure that any such remote device comprises a wireless transceiver that can communicate with mobile terminal 110 in order to establish a personal area network (PAN) connection. By way of example, mobile terminal 110 may communicate with television 131 (or computer monitor 131), projector 132, keyboard 133, and laptop (or handheld) personal computer (PC) 134. If the remote device is capable of displaying video (e.g., television 131), it is assumed that the wireless transceiver of the remote device supports a relatively high data rate that is suitable for video applications and/or multimedia applications. Tee '758 at ¶ 22 According to an advantageous embodiment, mobile terminal 110 may relay a video stream to a remote device in order to allow the operator of mobile terminal 110 to view the video on a better display. By way of example, mobile terminal 110 may be receiving streaming video data from server 150 via IP network 140 and base station 120. The streaming video is displayed on the display of mobile terminal 110. At some point, mobile terminal 110 may be located near to television 131 and establish a wireless communication link via the short-range wireless protocol (e.g., IEEE-802.11x/802.15.3x) with television 131. Mobile terminal 110 may then request information from television 131 regarding the capabilities of the display screen of television 131. Tee '758 at ¶ 24 Advantageously, mobile terminal 110 is also capable of establishing a communication link with keyboard 133 (or another input device such as an electronic notepad) via the short-range PAN connection in order to allow the operator of mobile terminal 110 to use keyboard 133 (or the other input device) in lieu of the keyboard or other control buttons on mobile terminal 110. By way of example, mobile terminal 110 may establish a Bluetooth connection to keyboard 133 in order to allow the operator to use keyboard 133 to control mobile terminal 110. In this scenario, the external keyboard, external display and the mobile terminal are connected in the form of a conventional computer, with air interface 1 connecting the computer (with the MT playing the role of the computing unit) to the Internet, and air interface 2 or 3

'590 Patent Claim Limitation	Tee '758 Exemplary Disclosure
	connecting the computer to the external keyboard and display. If air interface 2 can support both connections between the MT and keyboard or display simultaneously, it is not necessary to have air interface 3. Tee '758 at ¶ 25 FIG. 2 illustrates exemplary mobile terminal 110 in greater detail according to an exemplary embodiment of the disclosure. Mobile terminal 110 comprises wide-area network (WAN) transceiver (X-CVR) 201, wireless local area network (WLAN) transceiver (X-CVR) 202, and personal area network (PAN) transceiver (X-CVR) 203. In an embodiment, only one of WLAN transceiver 202 and PAN transceiver 203 may be employed. Mobile terminal 110 also comprises control processor 210, memory 215, speaker 225, microphone 230, input/output interface (I/O IF) 235, keypad 240 and display 245. Memory 215 stores basic operating system (OS) program 250, display select program 260, video conversion program 270, video/multimedia file 280, and one or more video application programs 290. Display select program 260 comprises local display parameters file 261 and remote display parameters file 262. Tee '758 at ¶ 28 In an alternate embodiment, mobile terminal 110 may communicate with BS 120 via a first air interface (or wireless interface) and with an external device that has a display screen via a second air interface (or wireless interface). Thus, mobile terminal 110 may comprise only two transceivers. Advantageously, one or more of transceivers 201-203 may be based on software-defined radio (SDR) technology and therefore may be capable of communicating according to more than one wireless interface standard. Tee '758 at ¶ 29 Additionally, depending on the distances involved, mobile terminal 110 may receive an incoming video and/or multimedia stream from any one of WAN transceiver 201, WLAN transceiver 202, and PAN transceiver 203 and may relay the video and/or multimedia stream to an external device using, for example, WLAN transceiver 202 or PAN transceiver 203. Essentially, this air interface functions similarly to I/O interface 235, but over the wireless link. Tee '758 at ¶ 35 Under control of display select program 260, control processor 210 is capable of querying the remote device (e.g., television 131) to determine the quality of the display associated with the remote device, for example, by requesting the remote device to transmit parameters or attributes describing the capabilities of the remote device. If the attributes of the external display device are available, the data can be formatted accordingly before transmission through the second interface to the display device. However, it

'590 Patent Claim Limitation	Tee '758 Exemplary Disclosure
	is not always necessary for the remote device to have the capability to respond to such an inquiry. Any standard protocol that is supported by the air interface would be sufficient for the mobile terminal to transmit the video data, and the similar air interface of the display device to receive, demodulate and decode the data. Nevertheless, it is assumed that the external display device has the capability to decode the received data and convert it to a signal/pixel format that is supported by the display mechanism, e.g., a MPEG4 decoder, and/or a Digital-to-Analog converter. Control processor 210 receives the display parameters associated with the remote device and stores these parameters in remote display parameters file 262. The parameters associated with display 245 are stored in local display parameters file 261. The parameter data may include, for example, display size, display type (CRT, LED, etc.), pixel size, refresh rate, and the like. Tee '758 at ¶ 38 Mobile terminal 110 then requests the capabilities of the remote display device and compares the capabilities of the remote display device and local display 245 (process step 315). Mobile terminal 110 may prompt the operator to select the remote display device (process step 320). Assuming the remote display device is selected, mobile terminal 110 then forwards (or relays or re-transmits) the video stream from base station 120 (or video/multimedia file 280) to the remote display device (process step 325). Optionally, mobile terminal 110 may wirelessly communicate with a remote user input device, such as keyboard 133 process step 330). Optionally, if video/multimedia application program 290 is a video conferencing application, mobile terminal 110 receives via the short-range air interface video/multimedia data from a remote video camera and relays the camera video data to base station 120 (process step 335). Tee '758 at claim 1 1. A mobile terminal comprising: a local display capable of displaying multimedia data; a controller capable of transmitting the multimedia data to the local display; and a first transceiver capable of communicating with a remote display device, wherein the controller is capable of comparing display parameter information associated with the remote display device to display parameter information associated with the local display and, in response to the comparison, transmitting the multimedia data to the remote display device via the first transceiver. To the extent Maxell contends Tee '758 does not disclose this limitation, a person of ordinary skill in the art would have readily arrived at this limitation by combining or modifying it in view of their general knowledge and/or the prior art references disclosed in the corresponding section of Samsung's Invalidity Contentions.

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[23i] a display displaying the video information received by the first radio communication circuit and displaying information received by the second radio communication circuit via the internet or home network;

Tee '758 Exemplary Disclosure

Tee '758 discloses “a display displaying the video information received by the first radio communication circuit and displaying information received by the second radio communication circuit via the internet or home network.” For example:

Tee '758 at Figure 1

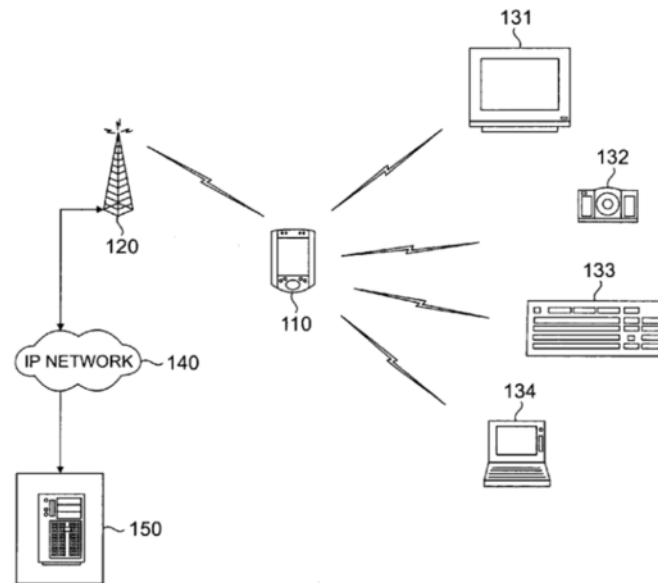


FIG. 1

Tee '758 at Figure 2

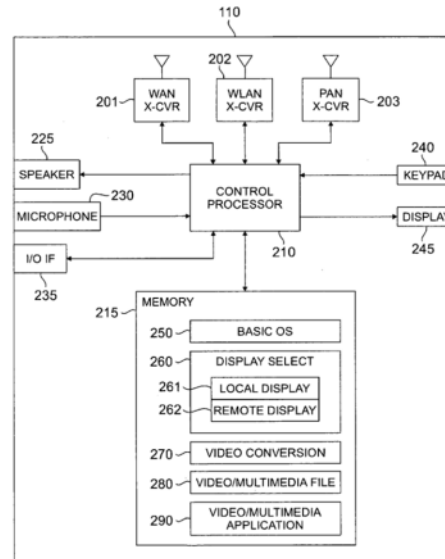


FIG. 2

Tee '758 at ¶ 6

A mobile terminal is provided. According to an advantageous embodiment, the mobile terminal comprises a local display capable of displaying multimedia data, a controller capable of transmitting the multimedia data to the local display, and a first transceiver capable of communicating with a remote display device. The controller is capable of comparing display parameter information associated with the external display device to display parameter information associated with the local display and, in response to the comparison, transmitting the multimedia data to the external display device via the first transceiver.

Tee '758 at ¶ 25

FIG. 2 illustrates exemplary mobile terminal 110 in greater detail according to an exemplary embodiment of the disclosure. Mobile terminal 110 comprises wide-area network (WAN) transceiver (X-CVR) 201, wireless local area network (WLAN) transceiver (X-CVR) 202, and personal area network (PAN) transceiver (X-CVR) 203. In an embodiment, only one of WLAN transceiver 202 and PAN transceiver 203 may be employed. Mobile terminal 110 also comprises control processor 210, memory 215, speaker 225, microphone 230, input/output interface (I/O IF) 235, keypad 240 and display 245. Memory 215 stores basic operating system (OS) program 250, display select program 260, video conversion program

'590 Patent Claim Limitation	Tee '758 Exemplary Disclosure
	270, video/multimedia file 280, and one or more video application programs 290. Display select program 260 comprises local display parameters file 261 and remote display parameters file 262. Tee '758 at ¶ 26 Control processor 210 and memory 215 function as a controller that controls the overall operation of mobile terminal 110. Control processor 210 executes basic OS program 250 in order to control, among other things, transceivers 201, 202 and 203. Control processor 210 receives operator inputs from keypad 240 or another user input device (not shown) and displays data on display 245. If mobile terminal 110 is, for example, a cell phone, control processor 210 can receive a voice signal from microphone 230 and can send voice signals to speaker 225. I/O interface 235 allows control processor 210 to be coupled to, and communicate with, another device, including, for example, a docking station, a data cord, an operator input device, or the like. Tee '758 at claim 1 1. A mobile terminal comprising: a local display capable of displaying multimedia data; a controller capable of transmitting the multimedia data to the local display; and a first transceiver capable of communicating with a remote display device, wherein the controller is capable of comparing display parameter information associated with the remote display device to display parameter information associated with the local display and, in response to the comparison, transmitting the multimedia data to the remote display device via the first transceiver. To the extent Maxell contends Tee '758 does not disclose this limitation, a person of ordinary skill in the art would have readily arrived at this limitation by combining or modifying it in view of their general knowledge and/or the prior art references disclosed in the corresponding section of Samsung's Invalidity Contentions.
[23j] a controller controlling assignment of connection of each of the first, second, third, and fourth radio communication circuits,	Tee '758 discloses "a controller controlling assignment of connection of each of the first, second, third, and fourth radio communication circuits." For example:

Tee '758 at Figure 1

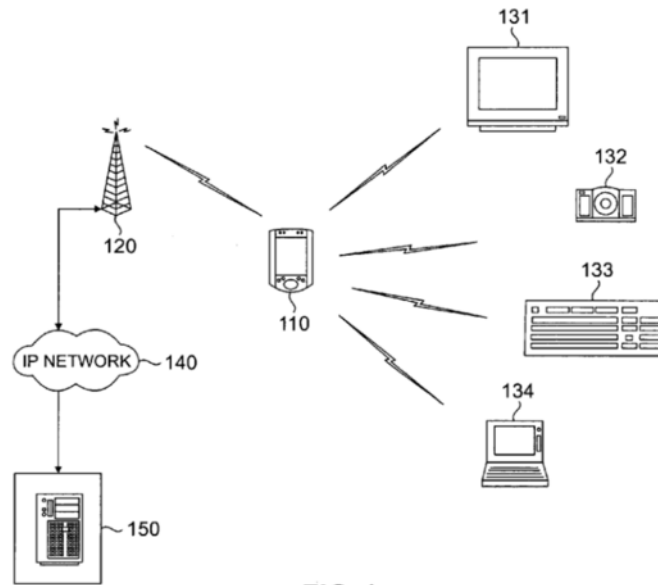


FIG. 1

Tee '758 at Figure 2

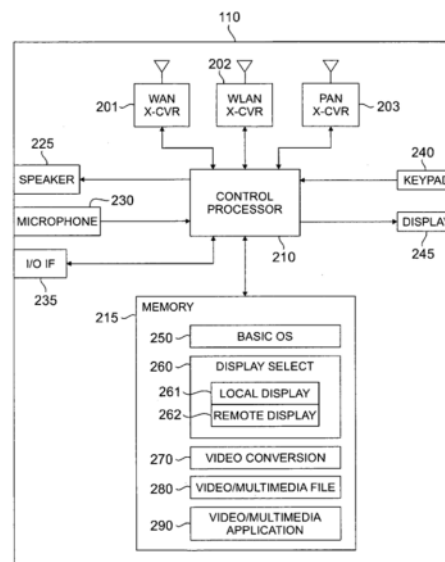


FIG. 2

Tee '758 at ¶ 6

A mobile terminal is provided. According to an advantageous embodiment, the mobile terminal comprises a local display capable of displaying multimedia data, a controller capable of transmitting the multimedia data to the local display, and a first transceiver capable of communicating with a remote display device. The controller is capable of comparing display parameter information associated with the external display device to display parameter information associated with the local display and, in response to the comparison, transmitting the multimedia data to the external display device via the first transceiver.

Tee '758 at ¶ 16

In some instances, the determination of whether the remote device has a better display may depend on the requirements of the video application executed by the mobile terminal. For many applications, it may be assumed that displays that are larger and have higher resolutions are better displays. The mobile terminal user may also make the decision as to which display to use.

Tee '758 at ¶ 17

Generally, the first wireless interface supports mobile wireless communications, including, but not limited to IS-2000, 1xEV-DO, 1xEV-DV, GSM/GPRS/EDGE, 3GPP UTRAN, HSDPA/HSUPA, 3GPP EUTRAN, TD-CDMA, WiBro, WiMAX, IEEE-802.16x, IEEE-802.20, and IEEE-802.11x (e.g., WiFi) in a hotspot environment. The second wireless interface typically supports shorter range wireless communications, including, but not limited to IEEE-802.15.3x, MB-OFDM, UWB, Wireless USB, IEEE-802.11x (or WiFi), and a Bluetooth standard that supports high throughput applications

Tee '758 at ¶ 25

FIG. 2 illustrates exemplary mobile terminal 110 in greater detail according to an exemplary embodiment of the disclosure. Mobile terminal 110 comprises wide-area network (WAN) transceiver (X-CVR) 201, wireless local area network (WLAN) transceiver (X-CVR) 202, and personal area network (PAN) transceiver (X-CVR) 203. In an embodiment, only one of WLAN transceiver 202 and PAN transceiver 203 may be employed. Mobile terminal 110 also comprises control processor 210, memory 215, speaker 225, microphone 230, input/output interface (I/O IF) 235, keypad 240 and display 245. Memory 215 stores basic operating system (OS) program 250, display select program 260, video conversion program 270, video/multimedia file 280, and one or more video application programs 290. Display select program 260 comprises local display parameters file 261 and remote display parameters file 262.

Tee '758 at ¶ 26

'590 Patent Claim Limitation	Tee '758 Exemplary Disclosure
	Control processor 210 and memory 215 function as a controller that controls the overall operation of mobile terminal 110. Control processor 210 executes basic OS program 250 in order to control, among other things, transceivers 201, 202 and 203. Control processor 210 receives operator inputs from keypad 240 or another user input device (not shown) and displays data on display 245. If mobile terminal 110 is, for example, a cell phone, control processor 210 can receive a voice signal from microphone 230 and can send voice signals to speaker 225. I/O interface 235 allows control processor 210 to be coupled to, and communicate with, another device, including, for example, a docking station, a data cord, an operator input device, or the like. Tee '758 at ¶ 27 In the exemplary embodiment, control processor 210 uses WAN transceiver 201 to communicate over a wide area network. For example, WAN transceiver 201 may be a GSM/GPRS/EDGE transceiver, a CDMA2000/1xEV-DO transceiver, or an IEEE-802.16x transceiver that communicates with base station 120 of a wide-area network. Control processor 210 may use WLAN transceiver 202 to communicate in a wireless local area network (WLAN) environment, such as an office WLAN that may have a coverage area or range of several hundred feet. By way of example, WLAN transceiver 202 may be an IEEE-802.11x transceiver. Control processor 210 may use PAN transceiver 203 to communicate in a personal area network (PAN) environment, such as a Bluetooth or IEEE-802.15.3 communication link that may have a coverage area or range around 10-20 meters. Tee '758 at ¶ 28 In an alternate embodiment, mobile terminal 110 may communicate with BS 120 via a first air interface (or wireless interface) and with an external device that has a display screen via a second air interface (or wireless interface). Thus, mobile terminal 110 may comprise only two transceivers. Advantageously, one or more of transceivers 201-203 may be based on software-defined radio (SDR) technology and therefore may be capable of communicating according to more than one wireless interface standard. Tee '758 at ¶ 33 Control processor 210 executes video/multimedia application program 290 in order to display video data on display 245. Control processor 210 executes video conversion program 270 in order to re-format (if necessary) the video data downloaded from server 150 through the one wireless interface (e.g., WAN transceiver 201) to a suitable format for re-transmission via another wireless interface (e.g., WLAN transceiver 202 or PAN transceiver 203). Additionally, video/multimedia application program 290 may retrieve video/multimedia data from video/multimedia file 280 and transmit a video stream to a remote device via a wireless interface. Advantageously, the wireless interface may have more than one

'590 Patent Claim Limitation	Tee '758 Exemplary Disclosure
	connection at the same time. For example, PAN transceiver 203 may transmit video to television 131 while simultaneously communicating with wireless keyboard 240. Tee '758 at ¶ 36 Under control of display select program 260, control processor 210 compares the parameters in remote display parameters file 262 to the parameters in local display parameters file 261 and selects the display best suited to video/multimedia application program 290. If the display of the external device is selected, control processor 210 transfers the video/multimedia data to the appropriate one of transceivers 202 and 203. Control processor 210 may prompt the operator of mobile terminal 110 for permission to transmit video/multimedia data to the remote display device. Control processor 210 may also continue to send video/multimedia data to display 245 for simultaneous display. In an alternate embodiment, it may be assumed that the remote display is better than display 245. In such an embodiment, control processor 210 may select the remote display (with or without operator permission) without comparing parameters associated with display 245 and the remote display. Tee '758 at ¶ 37 FIG. 3 depicts flow diagram 300, which illustrates the operation of exemplary mobile terminal 110 and a remote display device according to one embodiment of the disclosure. Initially, mobile terminal 110 accesses base station 120 via an air interface (e.g., transceiver 201 or 202) and initiates a video/multimedia download from server 150 (process step 305). Alternatively, mobile terminal 110 may play back video/multimedia data stored in video/multimedia file 280. At some point, mobile terminal 110 detects the presence of a remote display device (e.g., television 131) via another air interface (e.g., transceiver 202 or 203) and establishes a wireless link with the remote display device (process step 310), with the authorization of the mobile terminal user. Tee '758 at ¶ 38 Mobile terminal 110 then requests the capabilities of the remote display device and compares the capabilities of the remote display device and local display 245 (process step 315). Mobile terminal 110 may prompt the operator to select the remote display device (process step 320). Assuming the remote display device is selected, mobile terminal 110 then forwards (or relays or re-transmits) the video stream from base station 120 (or video/multimedia file 280) to the remote display device (process step 325). Optionally, mobile terminal 110 may wirelessly communicate with a remote user input device, such as keyboard 133 process step 330). Optionally, if video/multimedia application program 290 is a video conferencing application, mobile terminal 110 receives via the short-range air interface video/multimedia data from a remote video camera and relays the camera video data to base station 120 (process step 335).

'590 Patent Claim Limitation	Tee '758 Exemplary Disclosure
	Tee '758 at claim 1 1. A mobile terminal comprising: a local display capable of displaying multimedia data; a controller capable of transmitting the multimedia data to the local display; and a first transceiver capable of communicating with a remote display device, wherein the controller is capable of comparing display parameter information associated with the remote display device to display parameter information associated with the local display and, in response to the comparison, transmitting the multimedia data to the remote display device via the first transceiver. Tee '758 at claim 6 6. The mobile terminal as set forth in claim 4, wherein the controller is capable of prompting an operator of the mobile terminal for permission to transmit the multimedia data to the remote display device via the first transceiver. Tee '758 at claims 12–14 12. The mobile terminal as set forth in claim 11, wherein the controller is capable of communicating with a remote user input device via the first transceiver. 13. The mobile terminal as set forth in claim 12, wherein the remote user input device comprises a wireless keyboard. 14. The mobile terminal as set forth in claim 12, wherein the controller is capable of prompting an operator of the mobile terminal for permission to transmit the multimedia data to the remote display device via the first transceiver. To the extent Maxell contends Tee '758 does not disclose this limitation, a person of ordinary skill in the art would have readily arrived at this limitation by combining or modifying it in view of their general knowledge and/or the prior art references disclosed in the corresponding section of Samsung's Invalidity Contentions.
[23k] wherein the controller controls assignment of connection for each of the first and second radio communication circuit in response to receiving an indication from a user such that when an	Tee '758 discloses “wherein the controller controls assignment of connection for each of the first and second radio communication circuit in response to receiving an indication from a user such that when an indication from the user indicates to transmit video information using the first radio communication circuit the controller assigns a connection to the first radio communication circuit for transmitting the video information.” For example:

'590 Patent Claim Limitation	Tee '758 Exemplary Disclosure
indication from the user indicates to transmit video information using the first radio communication circuit the controller assigns a connection to the first radio communication circuit for transmitting the video information,	Tee '758 at ¶ 16 In some instances, the determination of whether the remote device has a better display may depend on the requirements of the video application executed by the mobile terminal. For many applications, it may be assumed that displays that are larger and have higher resolutions are better displays. The mobile terminal user may also make the decision as to which display to use. Tee '758 at ¶ 25 FIG. 2 illustrates exemplary mobile terminal 110 in greater detail according to an exemplary embodiment of the disclosure. Mobile terminal 110 comprises wide-area network (WAN) transceiver (X-CVR) 201, wireless local area network (WLAN) transceiver (X-CVR) 202, and personal area network (PAN) transceiver (X-CVR) 203. In an embodiment, only one of WLAN transceiver 202 and PAN transceiver 203 may be employed. Mobile terminal 110 also comprises control processor 210, memory 215, speaker 225, microphone 230, input/output interface (I/O IF) 235, keypad 240 and display 245. Memory 215 stores basic operating system (OS) program 250, display select program 260, video conversion program 270, video/multimedia file 280, and one or more video application programs 290. Display select program 260 comprises local display parameters file 261 and remote display parameters file 262. Tee '758 at ¶ 26 Control processor 210 and memory 215 function as a controller that controls the overall operation of mobile terminal 110. Control processor 210 executes basic OS program 250 in order to control, among other things, transceivers 201, 202 and 203. Control processor 210 receives operator inputs from keypad 240 or another user input device (not shown) and displays data on display 245. If mobile terminal 110 is, for example, a cell phone, control processor 210 can receive a voice signal from microphone 230 and can send voice signals to speaker 225. I/O interface 235 allows control processor 210 to be coupled to, and communicate with, another device, including, for example, a docking station, a data cord, an operator input device, or the like. Tee '758 at ¶ 27 In the exemplary embodiment, control processor 210 uses WAN transceiver 201 to communicate over a wide area network. For example, WAN transceiver 201 may be a GSM/GPRS/EDGE transceiver, a CDMA2000/1xEV-DO transceiver, or an IEEE-802.16x transceiver that communicates with base station 120 of a wide-area network. Control processor 210 may use WLAN transceiver 202 to communicate in a wireless local area network (WLAN) environment, such as an office WLAN that may have a coverage area or range of several hundred feet. By way of example, WLAN transceiver 202 may be an IEEE-

'590 Patent Claim Limitation	Tee '758 Exemplary Disclosure
	802.11x transceiver. Control processor 210 may use PAN transceiver 203 to communicate in a personal area network (PAN) environment, such as a Bluetooth or IEEE-802.15.3 communication link that may have a coverage area or range around 10-20 meters. Tee '758 at ¶ 28 In an alternate embodiment, mobile terminal 110 may communicate with BS 120 via a first air interface (or wireless interface) and with an external device that has a display screen via a second air interface (or wireless interface). Thus, mobile terminal 110 may comprise only two transceivers. Advantageously, one or more of transceivers 201-203 may be based on software-defined radio (SDR) technology and therefore may be capable of communicating according to more than one wireless interface standard. Tee '758 at ¶ 29 Additionally, depending on the distances involved, mobile terminal 110 may receive an incoming video and/or multimedia stream from any one of WAN transceiver 201, WLAN transceiver 202, and PAN transceiver 203 and may relay the video and/or multimedia stream to an external device using, for example, WLAN transceiver 202 or PAN transceiver 203. Essentially, this air interface functions similarly to I/O interface 235, but over the wireless link. Tee '758 at ¶ 30 In one example, mobile terminal 201 may receive a video stream from BS 120 via WAN transceiver 201 and may relay the video stream over a short distance to a remote display device via WLAN transceiver 202 or PAN transceiver 203. This may occur when mobile terminal 201 communicates with BS 120 in a cellular network and the remote display communicates with mobile terminal 110 using, for example, an IEEE-802.11x transceiver (i.e., communicates with WLAN transceiver 202) or a Bluetooth or IEEE-802.15.3x transceiver (i.e., communicates with PAN transceiver 203). Tee '758 at ¶ 34 Control processor 210 executes display select program 260 in order to determine whether the quality of the display of the remote device (e.g., television 131) is superior to the quality of display 245 in mobile terminal 110. Control processor 210 may execute display select program 260 automatically in response to detection of wireless signals transmitted by the remote device. For example, PAN transceiver 203 may detect a pilot (or similar beacon) signal transmitted by the wireless transceiver associated with television 131 and may send a notification signal to control processor 210. The pilot/beacon signal may be a signal broadcast by a device, such as television 131, for example, to provide notification of the presence and capabilities of the device and the services provided by the device. Upon receipt of the notification signal,

'590 Patent Claim Limitation	Tee '758 Exemplary Disclosure
	control processor 210 may launch display select application program 260. In another embodiment, PAN transceiver 203 broadcasts a signal to discover and interrogate neighboring nodes that may have the ability to display the information. As an example, the wireless transceiver associated with television 131 may acquire the transmission from PAN transceiver 203 and may transmit a signal in response to the inquiry, using the protocol supported by the air interface standard. Alternatively, control processor 210 may execute display select program 260 in response to manual inputs entered by the operator of mobile terminal 110. Tee '758 at ¶ 36 Under control of display select program 260, control processor 210 compares the parameters in remote display parameters file 262 to the parameters in local display parameters file 261 and selects the display best suited to video/multimedia application program 290. If the display of the external device is selected, control processor 210 transfers the video/multimedia data to the appropriate one of transceivers 202 and 203. Control processor 210 may prompt the operator of mobile terminal 110 for permission to transmit video/multimedia data to the remote display device. Control processor 210 may also continue to send video/multimedia data to display 245 for simultaneous display. In an alternate embodiment, it may be assumed that the remote display is better than display 245. In such an embodiment, control processor 210 may select the remote display (with or without operator permission) without comparing parameters associated with display 245 and the remote display. Tee '758 at ¶ 37 FIG. 3 depicts flow diagram 300, which illustrates the operation of exemplary mobile terminal 110 and a remote display device according to one embodiment of the disclosure. Initially, mobile terminal 110 accesses base station 120 via an air interface (e.g., transceiver 201 or 202) and initiates a video/multimedia download from server 150 (process step 305). Alternatively, mobile terminal 110 may play back video/multimedia data stored in video/multimedia file 280. At some point, mobile terminal 110 detects the presence of a remote display device (e.g., television 131) via another air interface (e.g., transceiver 202 or 203) and establishes a wireless link with the remote display device (process step 310), with the authorization of the mobile terminal user. Tee '758 at ¶ 38 Mobile terminal 110 then requests the capabilities of the remote display device and compares the capabilities of the remote display device and local display 245 (process step 315). Mobile terminal 110 may prompt the operator to select the remote display device (process step 320). Assuming the remote display device is selected, mobile terminal 110 then forwards (or relays or re-transmits) the video stream

'590 Patent Claim Limitation	Tee '758 Exemplary Disclosure
	from base station 120 (or video/multimedia file 280) to the remote display device (process step 325). Optionally, mobile terminal 110 may wirelessly communicate with a remote user input device, such as keyboard 133 process step 330). Optionally, if video/multimedia application program 290 is a video conferencing application, mobile terminal 110 receives via the short-range air interface video/multimedia data from a remote video camera and relays the camera video data to base station 120 (process step 335). Tee '758 at claim 6 6. The mobile terminal as set forth in claim 4, wherein the controller is capable of prompting an operator of the mobile terminal for permission to transmit the multimedia data to the remote display device via the first transceiver. Tee '758 at claims 12–14 12. The mobile terminal as set forth in claim 11, wherein the controller is capable of communicating with a remote user input device via the first transceiver. 13. The mobile terminal as set forth in claim 12, wherein the remote user input device comprises a wireless keyboard. 14. The mobile terminal as set forth in claim 12, wherein the controller is capable of prompting an operator of the mobile terminal for permission to transmit the multimedia data to the remote display device via the first transceiver. To the extent Maxell contends Tee '758 does not disclose this limitation, a person of ordinary skill in the art would have readily arrived at this limitation by combining or modifying it in view of their general knowledge and/or the prior art references disclosed in the corresponding section of Samsung's Invalidity Contentions.
[231] wherein the controller controls each of the first and second radio communication circuit so that the first radio communication circuit transmits video information and the second radio communication circuit connects to the internet or the home network simultaneously, and	Tee '758 discloses “wherein the controller controls each of the first and second radio communication circuit so that the first radio communication circuit transmits video information and the second radio communication circuit connects to the internet or the home network simultaneously.” For example: Tee '758 at ¶ 18 An exemplary mobile terminal may be used for mobile communications and as a gateway for a short-range wireless network, also called a personal area network (PAN). The mobile terminal may support a variety of mobile applications, including voice, multimedia (i.e., video, graphics, text, and audio downloads), video conferencing, web browsing, file download, VPN and Internet gaming. Advantageously, when the mobile terminal is near a higher quality display (e.g., a TV screen), the mobile

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	terminal relays its video data to the external display device as well as to its internal display. This enables the operator of the mobile terminal to view the information on the higher quality display device, and to share the displayed information with other people at the same location, e.g., in a video conference call, or watching the latest broadcasting and streaming of News or events of common interests. Note that in the latter example, the source of information could be a remote Internet web server instead of a conventional TV broadcasting station. A remote Internet web server does not have the same geographical coverage limit as a conventional TV broadcasting station. In the case of group video conferencing using, for example, a digital camera phone, it would be more practical and ergonomically correct to have the received video data displayed on an external screen, while the phone camera captures and transmits the local user images. Tee '758 at ¶ 25 FIG. 2 illustrates exemplary mobile terminal 110 in greater detail according to an exemplary embodiment of the disclosure. Mobile terminal 110 comprises wide-area network (WAN) transceiver (X-CVR) 201, wireless local area network (WLAN) transceiver (X-CVR) 202, and personal area network (PAN) transceiver (X-CVR) 203. In an embodiment, only one of WLAN transceiver 202 and PAN transceiver 203 may be employed. Mobile terminal 110 also comprises control processor 210, memory 215, speaker 225, microphone 230, input/output interface (I/O IF) 235, keypad 240 and display 245. Memory 215 stores basic operating system (OS) program 250, display select program 260, video conversion program 270, video/multimedia file 280, and one or more video application programs 290. Display select program 260 comprises local display parameters file 261 and remote display parameters file 262. Tee '758 at ¶ 26 Control processor 210 and memory 215 function as a controller that controls the overall operation of mobile terminal 110. Control processor 210 executes basic OS program 250 in order to control, among other things, transceivers 201, 202 and 203. Control processor 210 receives operator inputs from keypad 240 or another user input device (not shown) and displays data on display 245. If mobile terminal 110 is, for example, a cell phone, control processor 210 can receive a voice signal from microphone 230 and can send voice signals to speaker 225. I/O interface 235 allows control processor 210 to be coupled to, and communicate with, another device, including, for example, a docking station, a data cord, an operator input device, or the like. Tee '758 at ¶ 27 In the exemplary embodiment, control processor 210 uses WAN transceiver 201 to communicate over a wide area network. For example, WAN transceiver 201 may be a GSM/GPRS/EDGE transceiver, a

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	CDMA2000/1xEV-DO transceiver, or an IEEE-802.16x transceiver that communicates with base station 120 of a wide-area network. Control processor 210 may use WLAN transceiver 202 to communicate in a wireless local area network (WLAN) environment, such as an office WLAN that may have a coverage area or range of several hundred feet. By way of example, WLAN transceiver 202 may be an IEEE-802.11x transceiver. Control processor 210 may use PAN transceiver 203 to communicate in a personal area network (PAN) environment, such as a Bluetooth or IEEE-802.15.3 communication link that may have a coverage area or range around 10-20 meters. Tee '758 at ¶ 28 In an alternate embodiment, mobile terminal 110 may communicate with BS 120 via a first air interface (or wireless interface) and with an external device that has a display screen via a second air interface (or wireless interface). Thus, mobile terminal 110 may comprise only two transceivers. Advantageously, one or more of transceivers 201-203 may be based on software-defined radio (SDR) technology and therefore may be capable of communicating according to more than one wireless interface standard. Tee '758 at ¶ 29 Additionally, depending on the distances involved, mobile terminal 110 may receive an incoming video and/or multimedia stream from any one of WAN transceiver 201, WLAN transceiver 202, and PAN transceiver 203 and may relay the video and/or multimedia stream to an external device using, for example, WLAN transceiver 202 or PAN transceiver 203. Essentially, this air interface functions similarly to I/O interface 235, but over the wireless link. Tee '758 at ¶ 30 In one example, mobile terminal 201 may receive a video stream from BS 120 via WAN transceiver 201 and may relay the video stream over a short distance to a remote display device via WLAN transceiver 202 or PAN transceiver 203. This may occur when mobile terminal 201 communicates with BS 120 in a cellular network and the remote display communicates with mobile terminal 110 using, for example, an IEEE-802.11x transceiver (i.e., communicates with WLAN transceiver 202) or a Bluetooth or IEEE-802.15.3x transceiver (i.e., communicates with PAN transceiver 203). Tee '758 at ¶ 33 Control processor 210 executes video/multimedia application program 290 in order to display video data on display 245. Control processor 210 executes video conversion program 270 in order to re-format (if necessary) the video data downloaded from server 150 through the one wireless interface (e.g., WAN transceiver 201) to a suitable format for re-transmission via another wireless interface (e.g., WLAN

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	transceiver 202 or PAN transceiver 203). Additionally, video/multimedia application program 290 may retrieve video/multimedia data from video/multimedia file 280 and transmit a video stream to a remote device via a wireless interface. Advantageously, the wireless interface may have more than one connection at the same time. For example, PAN transceiver 203 may transmit video to television 131 while simultaneously communicating with wireless keyboard 240. Tee '758 at ¶ 36 Under control of display select program 260, control processor 210 compares the parameters in remote display parameters file 262 to the parameters in local display parameters file 261 and selects the display best suited to video/multimedia application program 290. If the display of the external device is selected, control processor 210 transfers the video/multimedia data to the appropriate one of transceivers 202 and 203. Control processor 210 may prompt the operator of mobile terminal 110 for permission to transmit video/multimedia data to the remote display device. Control processor 210 may also continue to send video/multimedia data to display 245 for simultaneous display. In an alternate embodiment, it may be assumed that the remote display is better than display 245. In such an embodiment, control processor 210 may select the remote display (with or without operator permission) without comparing parameters associated with display 245 and the remote display. Tee '758 at ¶ 37 FIG. 3 depicts flow diagram 300, which illustrates the operation of exemplary mobile terminal 110 and a remote display device according to one embodiment of the disclosure. Initially, mobile terminal 110 accesses base station 120 via an air interface (e.g., transceiver 201 or 202) and initiates a video/multimedia download from server 150 (process step 305). Alternatively, mobile terminal 110 may play back video/multimedia data stored in video/multimedia file 280. At some point, mobile terminal 110 detects the presence of a remote display device (e.g., television 131) via another air interface (e.g., transceiver 202 or 203) and establishes a wireless link with the remote display device (process step 310), with the authorization of the mobile terminal user. Tee '758 at ¶ 38 Mobile terminal 110 then requests the capabilities of the remote display device and compares the capabilities of the remote display device and local display 245 (process step 315). Mobile terminal 110 may prompt the operator to select the remote display device (process step 320). Assuming the remote display device is selected, mobile terminal 110 then forwards (or relays or re-transmits) the video stream from base station 120 (or video/multimedia file 280) to the remote display device (process step 325). Optionally, mobile terminal 110 may wirelessly communicate with a remote user input device, such as

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	keyboard 133 process step 330). Optionally, if video/multimedia application program 290 is a video conferencing application, mobile terminal 110 receives via the short-range air interface video/multimedia data from a remote video camera and relays the camera video data to base station 120 (process step 335). To the extent Maxell contends Tee '758 does not disclose this limitation, a person of ordinary skill in the art would have readily arrived at this limitation by combining or modifying it in view of their general knowledge and/or the prior art references disclosed in the corresponding section of Samsung's Invalidity Contentions.
[23m] wherein the second or third radio communication circuits receive a signal from the internet indicating that an update for an operating system of the cellular phone is available, and the cellular phone executes an update process such that an updated operating system of the cellular phone is stored in the cellular phone after execution of the update process.	Tee '758 discloses “wherein the second or third radio communication circuits receive a signal from the internet indicating that an update for an operating system of the cellular phone is available, and the cellular phone executes an update process such that an updated operating system of the cellular phone is stored in the cellular phone after execution of the update process.” For example: Tee '758 at ¶ 25 FIG. 2 illustrates exemplary mobile terminal 110 in greater detail according to an exemplary embodiment of the disclosure. Mobile terminal 110 comprises wide-area network (WAN) transceiver (X-CVR) 201, wireless local area network (WLAN) transceiver (X-CVR) 202, and personal area network (PAN) transceiver (X-CVR) 203. In an embodiment, only one of WLAN transceiver 202 and PAN transceiver 203 may be employed. Mobile terminal 110 also comprises control processor 210, memory 215, speaker 225, microphone 230, input/output interface (I/O IF) 235, keypad 240 and display 245. Memory 215 stores basic operating system (OS) program 250, display select program 260, video conversion program 270, video/multimedia file 280, and one or more video application programs 290. Display select program 260 comprises local display parameters file 261 and remote display parameters file 262. To the extent Maxell contends Tee '758 does not disclose this limitation, a person of ordinary skill in the art would have readily arrived at this limitation by combining or modifying it in view of their general knowledge and/or the prior art references disclosed in the corresponding section of Samsung's Invalidity Contentions.
[24pre] 24. The cellular phone of claim 23,	Tee '758 discloses “[t]he cellular phone of claim 23.” See above.
[24a] wherein the second or third radio communication circuits receive a signal from the internet	Tee '758 discloses “wherein the second or third radio communication circuits receive a signal from the internet indicating that an update for an application of the cellular phone is available, and the cellular phone

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indicating that an update for an application of the cellular phone is available, and the cellular phone executes an application update process such that an updated application of the cellular phone is stored in the cellular phone after execution of the application update process.	executes an application update process such that an updated application of the cellular phone is stored in the cellular phone after execution of the application update process.” For example: Tee '758 at ¶ 3 Wireless mobile terminals are being used in an ever-increasing variety of applications. This is particularly true of hand-held devices, such as cell phones, personal digital assistant (PDA) devices with wireless capability, and wireless hand-held (or palm top) computers. More and more, these applications include video and/or audio applications or multimedia applications that rely heavily on graphics. Previous generations of hand-held mobile terminals were capable of supporting multimedia and video/audio applications, but this capability was diminished by the relatively low data rates that conventional wireless networks could achieve. This problem is being addressed by new wireless communications standards and equipment that provide much higher data rates. Tee '758 at ¶ 4 However, even if network bottlenecks are removed, the usefulness of small mobile terminals may be limited nonetheless by the human interface problems associated with handheld devices. The small display screens of wireless mobile terminals diminish the capabilities of some applications, particularly video applications. For example, the small screens of hand-held mobile terminals are a well-known hindrance to the display of website information in Internet browser applications. As a practical matter, the display of a mobile terminal (e.g., a cell phone or PDA) typically has size limitations imposed by form-factor, power consumption and cost. Thus, handheld mobile terminals may not be an attractive device for some video and multimedia applications. Tee '758 at ¶ 5 Therefore, there is a need in the art for small mobile terminals that are better suited to video applications and to multimedia applications. In particular, there is a need for a mobile terminal that can overcome the limitations of a small display screen to provide improved viewing of video and multimedia applications. Tee '758 at ¶ 18 An exemplary mobile terminal may be used for mobile communications and as a gateway for a short-range wireless network, also called a personal area network (PAN). The mobile terminal may support a variety of mobile applications, including voice, multimedia (i.e., video, graphics, text, and audio downloads), video conferencing, web browsing, file download, VPN and Internet gaming. Advantageously, when the mobile terminal is near a higher quality display (e.g., a TV screen), the mobile terminal relays its video data to the external display device as well as to its internal display. This enables

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	the operator of the mobile terminal to view the information on the higher quality display device, and to share the displayed information with other people at the same location, e.g., in a video conference call, or watching the latest broadcasting and streaming of News or events of common interests. Note that in the latter example, the source of information could be a remote Internet web server instead of a conventional TV broadcasting station. A remote Internet web server does not have the same geographical coverage limit as a conventional TV broadcasting station. In the case of group video conferencing using, for example, a digital camera phone, it would be more practical and ergonomically correct to have the received video data displayed on an external screen, while the phone camera captures and transmits the local user images. Tee '758 at ¶ 24 It is not required that mobile terminal 110 receive an incoming video stream from base station 120. In an alternate scenario, mobile terminal 110 may execute a video application and/or a multimedia application that plays back a video file and/or multimedia file stored in memory in mobile terminal 110. Mobile terminal 110 then transmits the video (or multimedia) stream from the stored file to television 131 (or another device) for viewing. Tee '758 at ¶ 25 FIG. 2 illustrates exemplary mobile terminal 110 in greater detail according to an exemplary embodiment of the disclosure. Mobile terminal 110 comprises wide-area network (WAN) transceiver (X-CVR) 201, wireless local area network (WLAN) transceiver (X-CVR) 202, and personal area network (PAN) transceiver (X-CVR) 203. In an embodiment, only one of WLAN transceiver 202 and PAN transceiver 203 may be employed. Mobile terminal 110 also comprises control processor 210, memory 215, speaker 225, microphone 230, input/output interface (I/O IF) 235, keypad 240 and display 245. Memory 215 stores basic operating system (OS) program 250, display select program 260, video conversion program 270, video/multimedia file 280, and one or more video application programs 290. Display select program 260 comprises local display parameters file 261 and remote display parameters file 262. Tee '758 at ¶ 33 Control processor 210 executes video/multimedia application program 290 in order to display video data on display 245. Control processor 210 executes video conversion program 270 in order to re-format (if necessary) the video data downloaded from server 150 through the one wireless interface (e.g., WAN transceiver 201) to a suitable format for re-transmission via another wireless interface (e.g., WLAN transceiver 202 or PAN transceiver 203). Additionally, video/multimedia application program 290 may retrieve video/multimedia data from video/multimedia file 280 and transmit a video stream to a remote

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	device via a wireless interface. Advantageously, the wireless interface may have more than one connection at the same time. For example, PAN transceiver 203 may transmit video to television 131 while simultaneously communicating with wireless keyboard 240. Tee '758 at ¶ 34 Control processor 210 executes display select program 260 in order to determine whether the quality of the display of the remote device (e.g., television 131) is superior to the quality of display 245 in mobile terminal 110. Control processor 210 may execute display select program 260 automatically in response to detection of wireless signals transmitted by the remote device. For example, PAN transceiver 203 may detect a pilot (or similar beacon) signal transmitted by the wireless transceiver associated with television 131 and may send a notification signal to control processor 210. The pilot/beacon signal may be a signal broadcast by a device, such as television 131, for example, to provide notification of the presence and capabilities of the device and the services provided by the device. Upon receipt of the notification signal, control processor 210 may launch display select application program 260. In another embodiment, PAN transceiver 203 broadcasts a signal to discover and interrogate neighboring nodes that may have the ability to display the information. As an example, the wireless transceiver associated with television 131 may acquire the transmission from PAN transceiver 203 and may transmit a signal in response to the inquiry, using the protocol supported by the air interface standard. Alternatively, control processor 210 may execute display select program 260 in response to manual inputs entered by the operator of mobile terminal 110. To the extent Maxell contends Tee '758 does not disclose this limitation, a person of ordinary skill in the art would have readily arrived at this limitation by combining or modifying it in view of their general knowledge and/or the prior art references disclosed in the corresponding section of Samsung's Invalidity Contentions.
[25pre] 25. The cellular phone of claim 23,	Tee '758 discloses "[t]he cellular phone of claim 23." See above.
[25a] wherein the first modulation scheme comprises shift keying modulation and the second modulation scheme comprises quadrature amplitude modulation (QAM).	Tee '758 discloses "wherein the first modulation scheme comprises shift keying modulation and the second modulation scheme comprises quadrature amplitude modulation (QAM)." For example: Tee '758 at ¶ 17 Generally, the first wireless interface supports mobile wireless communications, including, but not limited to IS-2000, 1xEV-DO, 1xEV-DV, GSM/GPRS/EDGE, 3GPP UTRAN, HSDPA/HSUPA, 3GPP

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	EUTRAN, TD-CDMA, WiBro, WiMAX, IEEE-802.16x, IEEE-802.20, and IEEE-802.11x (e.g., WiFi) in a hotspot environment. The second wireless interface typically supports shorter range wireless communications, including, but not limited to IEEE-802.15.3x, MB-OFDM, UWB, Wireless USB, IEEE-802.11x (or WiFi), and a Bluetooth standard that supports high throughput applications To the extent Maxell contends Tee '758 does not disclose this limitation, a person of ordinary skill in the art would have readily arrived at this limitation by combining or modifying it in view of their general knowledge and/or the prior art references disclosed in the corresponding section of Samsung's Invalidity Contentions.