

EXHIBIT 1

G6

Appendix G6

Defendants and Counterclaimants' Invalidity Contentions

Advanced Micro Devices, Inc., et al., v. Samsung Electronics Co., Ltd., et al., Case No. 3:08-CV-0986-SI

U.S. Patent No. 6,784,879 Invalidity Chart: U.S. Patent No. 5,838,386 (“‘386 Patent”), U.S. Patent No. 5,539,479 (“‘479 Patent”), U.S. Patent No. 5,790,124 (“‘124 Patent”), U.S. Patent No. 5,801,785 (“‘785 Patent”), U.S. Patent No. 5,528,304 (“‘304 Patent”), and U.S. Patent No. 5,506,628 (“‘628 Patent”)

All asserted claims are invalidated by the ‘386 Patent, the ‘479 Patent, the ‘124 Patent, the ‘785 Patent, the ‘304 Patent, and/or the ‘628 Patent either alone or in combination with each other and/or other prior art listed in Section I of Defendants’ and Counterclaimants’ Preliminary Invalidity Contentions and/or through modifications described below. Nothing in this invalidity chart should be construed as signifying or suggesting Defendants and Counterclaimants’ adoption of or acquiescence in any claim scope and/or claim construction positions taken by Plaintiffs and Counterdefendants in this litigation.

One of ordinary skill in the art would have been motivated to combine one or more of these references to arrive at the patented inventions for multiple reasons, including (1) because these patents all address the subject matter acknowledged as prior art in the ‘879 patent: “computer displays and providing control of background video”; (2) because these patents address similar problems as those purportedly addressed by the ‘879 patent: “providing control of background video”; (3) because there were similar improvements in similar prior art devices, as disclosed in these patents and in Defendants and Counterclaimants other claim charts for the ‘879 patent; (4) because the ‘879 patent discloses predictable variations of the inventions disclosed in these patents; (5) to address design incentives and react to market forces; and (6) based on the knowledge or common sense of one of ordinary skill in the art.

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Claim 11

Claim limitation	‘386 Patent, ‘479 Patent, ‘124 Patent, ‘785 Patent, ‘304 Patent, and/or ‘628 Patent
11. A video graphics processor comprising:	Assuming for present purposes (without admitting) that the preamble is a claim limitation: The ‘124 Patent discloses this limitation. <i>See, e.g.,</i> Fig. 3, Fig. 8, col. 8, ll. 41-52 (“In the preferred embodiment, playback computer 802 is an Indigo computer with Galileo and Cosmo boards. Graphics computer 806 is an Onyx Reality Engine2 computer equipped with a Sirius video option and a Vigna audio board (i.e., the puppet's voice from the face puppeteer). Both of these computers are available from Silicon Graphics Incorporated. Mountain View, Calif. The video output of the Indigo Galileo board is output to the Sirius video option of the Onyx Reality Engine. Graphics computer 806 also receives the inputs from blue screen camera 1004, a video telephone (not shown), body

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motion capture system 602 and tracking electronics 612.”)	The ‘479 patent discloses this limitation. <i>See, e.g.</i>, col. 6, ll. 56-65 (“The video processor 39 is a central element of the set top device. In addition to the elements recited above, the processor 39 is operatively connected with system memory 45, an analog audio control 46, a microprocessor 48 functioning as a central processing unit or CPU, flash memory 49, an I/O processor 50 including an infrared receiver/blaster, an expansion bus 51, a cable or telephone modem 52, and a Compact Disk (or CD) drive 54. Each of these elements serves functions to be described more fully hereinafter.”); col. 10, ll. 9-12 (“Referring now to FIGS. 3 through 5, the video processor 39 electronics are largely contained within one massive custom logic chip, known as an ASIC (Application Specific Integrated Circuit).”) The ‘386 Patent discloses this limitation. <i>See, e.g.</i>, col. 4, ll. 8-9 (“FIGS. 2A and 2B are block diagrams of an OSD circuit according to the present invention”), col. 5, ll. 39-50 (“In pointer horizontal position detector 23, up/down bi-directional counter 41 up/down-counts a clock (XMVCLK) which determines the speed of moving the pointer horizontally according to a left- or right-signal to transmit the counted value as a horizontal position value to central controller 8 (which may be a microcomputer or other data processing device) via a data bus, and reloadable down-counter 42 loads the horizontal position value by HSYNC and down-counts the horizontal position value by HSYNC and down-counts the horizontal position value according to the OSD clock to activate the horizontal detection signal when the counted value is zero.”)
a processing unit; and	The ‘124 Patent discloses this limitation. <i>See, e.g.</i>, Fig. 3, Fig. 8, col. 8, ll. 41-52 (referring to the Onyx Reality Engine 2, which contains an R4400 processor (<i>see</i> Onyx Reality Engine 2 data sheet)). The ‘479 Patent discloses this limitation. <i>See, e.g.</i>, col. 6, ll. 56-65 (“The video processor 39 is a central element of the set top device. In addition to the elements recited above, the processor 39 is operatively connected with

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	system memory 45, an analog audio control 46, a microprocessor 48 functioning as a central processing unit or CPU, flash memory 49, an I/O processor 50 including an infrared receiver/blaster, an expansion bus 51, a cable or telephone modem 52, and a Compact Disk (or CD) drive 54. Each of these elements serves functions to be described more fully hereinafter.”); col. 10, ll. 9-12 (“Referring now to FIGS. 3 through 5, the video processor 39 electronics are largely contained within one massive custom logic chip, known as an ASIC (Application Specific Integrated Circuit).”); col. 8, ll. 23-25 (“In the preferred embodiment, the CPU 48 is an 80376, manufactured by Intel Corp., 3065 Bowers Ave., Santa Clara, Calif., 95051. The 80376 is a variation of the well known 80386SX, which is well known in the art and also available from Intel Corp.”). The ‘386 Patent discloses this limitation. See, e.g., col. 4, ll. 8-9 (“FIGS. 2A and 2B are block diagrams of an OSD circuit according to the present invention”), col. 5, ll. 39-50 (“In pointer horizontal position detector 23, up/down bi-directional counter 41 up/down-counts a clock (XMVCLK) which determines the speed of moving the pointer horizontally according to a left- or right-signal to transmit the counted value as a horizontal position value to central controller 8 (which may be a microcomputer or other data processing device) via a data bus, and reloadable down-counter 42 loads the horizontal position value by HSYNC and down-counts the horizontal position value by HSYNC and down-counts the horizontal position value according to the OSD clock to activate the horizontal detection signal when the counted value is zero.”)
memory that stores programming instructions that, when read by the processing unit, causes the processing unit to	The ‘124 Patent discloses this limitation. See, e.g., Fig. 3, Fig. 8, col. 8, ll. 41-52 (referring to the Onyx Reality Engine 2, which contains 512 MB of RAM processor memory (see Onyx Reality Engine 2 data sheet)). The ‘479 Patent discloses this limitation. See, e.g., col. 8, ll. 34-57 (“The present inventions contemplate that the CPU may access control programs stored, for example, in the set top device system memory 45 so as to be accessible to the processor, for controlling the display of visual images by said video display device. As will be understood by persons of skill

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	in the design of program controlled digital devices, the processor accessing such a control program will be capable of loading the control program and operating under the control of the control program so as to accomplish the functions established by the author of the program. Such a control program may, for example in this disclosure, cause the command receiver circuitry associated with or embedded in the I/O processor 50 which receives command signals from the command transmitter circuitry of the remote control 20 to derive from the received command signals image directing signals directing modification of visual images displayed on the display device. Further, the control program will cause command processor circuitry in the video processor 39 which is coupled to the command receiver circuitry and to the video reception circuitry in the television receiver 10 to receive the image directing signals and modify the visual images displayed on the device 12 as directed by manipulation of the remote control by a human observer.”) The ‘386 Patent discloses this limitation: <i>See, e.g.</i>, Fig. 1, col. 1, ll. 30-33 (“OSD RAM 17 stores addresses and colors of characters to be displayed. The character (a character or a symbol icon, etc.) address and color are output by the RAM read address signal.”); Fig. 2B; col. 5, ll. 41-47 (“[W]hich determines the speed of moving the pointer horizontally according to a left- or right-signal to transmit the counted value as a horizontal position value to central controller 8 (which may be a microcomputer or other data processing device) via a data bus, and reloadable down-counter 42 loads the horizontal position value by HSYNC”); Fig. 6; col. 6, ll. 24-31 (“Pointer 65 is moved to select a menu for channel selection, UP (66) or DOWN (67), a button for volume increase (68) or volume decrease (69), or next menu, thereby knowing the selected indicative content by determination of the position value by the central controller. Thus, it is possible to control the device by a simple remote controller.”)
(a) provide a video control icon that is visible on the display, wherein the video control icon relates to live video that is being presented as a	The ‘124 Patent discloses this limitation. <i>See, e.g.</i>, Fig. 1; col. 12, ll. 18-19 (“Digital art elements visible on the screen can be clicked on by the performer.”); col. 1, ll. 18-22 (“The video segment can take on varying degrees of involvement in the performance. For example, a performer may treat the video segment as background and ignore it all together, she may narrate or comment on the video segment, or she may interact with the video segment.”); <i>see also</i> col. 2, ll. 35-39, col. 4, l. 63 - col. 5, l. 12.

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background on the display;	The '479 Patent discloses this limitation. <i>See, e.g.</i>, col. 41, ll. 27-31 ("Selection of the remote control functions enables use of the embodied icons such as the iconic representations of "channel up" or "channel down" found in remote control functionality for navigation among programming choices.") The '386 Patent discloses this limitation. <i>See, e.g.</i>, Abstract ("A method of remotely controlling a television receiver using the OSD circuit is performed such that a video signal applied to the television receiver is displayed on a screen, if there is a necessity/desire of controlling the television receiver, a control menu and a pointer are together displayed, the position of the pointer is moved to a desired menu by a remote controller, and then the desired menu is selected by a selection signal of the remote controller, thereby operating the television receiver in a desirable way.")
(b) detect selection of the video control icon;	The '124 Patent discloses this limitation. <i>See, e.g.</i>, Fig. 1; col. 12, ll. 18-19 ("Digital art elements visible on the screen can be clicked on by the performer."); col. 12, ll. 22-24 ("Thus, when a digital art element is "clicked" the corresponding Button node is notified of this interaction event."); col. 4, ll. 38-45 ("Furthermore, given the ability to point, the performer may interact with the images on the display screen much like a computer user interacts with a menu in a point-and-shoot type computer application. To accomplish this, pointer 118 provides a pointer signal 130 to media production system 104. This allows the user to have further control over the production of media images by media production system 104."); <i>see also</i> col. 9, ll. 62-65, col. 10, l. 65 - col. 11, l. 5. The '479 Patent discloses this limitation. <i>See, e.g.</i>, col. 35, l. 63 - col. 36, l. 11 ("A two axis device, in contrast, typically provides a separate control element for selection. Examples may be found in a conventional personal computer pointing device such as those known as a mouse, and in conventional remote controls as typically provided with such consumer

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(c) provide a control panel while the live video remains in the background and an application that was in focus remains in focus when the video control icon has been selected,	electronic devices as television receivers, video cassette recorders, audio amplifiers, compact disk players, video disc players, and the like. In both instances, one control element (a rolling ball in the case of the mouse and up-down or right-left rocker switches or stepping keys in the case of the conventional remote control) may direct movement of a selection display element, such as a highlighted band, across a displayed video image, and then a second control element (in the case of a mouse, a button; a conventional remote control, a push switch) is manipulated to make a selection of a display feature.”). The ‘386 Patent discloses this limitation. <i>See, e.g.</i>, col. 2, ll. 16-20 (“It is an object of the present invention to provide an on screen display (OSD) circuit for controlling a display device with a simple remote controller by additionally offering a pointer display and position detection function to a conventional OSD circuit.”) The ‘124 Patent discloses this limitation. <i>See, e.g.</i> Fig. 1; Fig. 2; col. 6, ll. 12-16 (“The cursor allows the performer to point to or highlight, for an audience, elements displayed on screen 108. The cursor also allows the performer to interact with graphics computer 806 to make menu selections.”); col. 12, ll. 18-19 (“Digital art elements visible on the screen can be clicked on by the performer.”); col. 1, ll. 18-22 (“The video segment can take on varying degrees of involvement in the performance. For example, a performer may treat the video segment as background and ignore it all together, she may narrate or comment on the video segment, or she may interact with the video segment.”); col. 7, l. 65 - col. 8, l. 8 (“Graphics computer 806 generates all real-time graphics (graphics layer 204) for image 122. Graphics computer 806 also texture maps the decompressed video elements from playback computer 802 and controls playback of video from laser disk player 810. Graphics computer 806 communicates with playback computer 802 via ethernet bus 305. Graphics computer 806 also receives input from a blue screen camera 1004 (see Fig. 10), a video telephone (not shown). Body motion capture system 602 and tracking electronics 612. Graphics computer 806 controls laser disk player 810 via a serial control line 809 (e.g., an RS-232).”)

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	The '479 Patent discloses this limitation. <i>See, e.g.,</i> Fig. 16, col 41, ll. 23-31 ("As indicated in the right hand portion of FIG. 16 (where menu selection elements are display as overlain onto a video stream image), the menu display may mimic functional controls provided as remote control functions in prior television receivers or video cassette recorder/players. Selection of the remote control functions enables use of the embodied icons such as the iconic representations of "channel up" or "channel down" found in remote control functionality for navigation among programming choices.") The '386 Patent discloses this limitation. <i>See, e.g.,</i> Fig. 6, col. 6, ll. 7-31 ("FIG. 6 illustrates an example of menu and point displayed on a display device (e.g., CRT, television screen, computer monitor, LCD or other display device) using an OSD circuit according to the present invention. According to the complicated functional capabilities and high-quality of the controlled device, such as a multi-screen television or television incorporating or coupled to video playback or receiver devices (VCRs, satellites, etc.) or having special audio functions, it is difficult to control the device, which necessitates many remote control keys, and it also is difficult to manipulate the device. An OSD circuit according to the present invention simplifies remote controller 61 such as a mouse for a personal computer or other remote control device, as illustrated in FIG. 6. That is to say, main channel CH0 and several sub-channels CH1, CH2 and CH3 may be displayed on screen 62 as illustrated, in a general OSD circuit, if remote controller 61 is operated to display menu 64. Pointer 65 is moved to select a menu for channel selection, UP (66) or DOWN (67), a button for volume increase (68) or volume decrease (69), or next menu, thereby knowing the selected indicative content by determination of the position value by the central controller. Thus, it is possible to control the device by a simple remote controller.")
wherein the control panel includes at least one of the following: a volume adjust icon, a mute icon, a pause icon, a rewind icon, and a	The '124 Patent discloses this limitation. <i>See, e.g.,</i> Fig. 2; col. 7, l. 65 - col. 8, l. 8 ("Graphics computer 806 generates all real-time graphics (graphics layer 204) for image 122. Graphics computer 806 also texture maps the decompressed video elements from playback computer 802 and controls playback of video from laser disk player 810. Graphics computer 806 communicates with playback computer 802 via ethernet bus 305. Graphics computer 806 also receives input from a blue screen camera 1004 (see Fig. 10), a video telephone (not shown). Body motion capture system 602

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fast-forward icon.

and tracking electronics 612. Graphics computer 806 controls laser disk player 810 via a serial control line 809 (e.g., an RS-232).")

To the extent the '124 Patent does not inherently disclose a pause icon, a rewind icon, or a fast-forward icon, these features are disclosed by reference to the laser disk player, which are known to one of ordinary skill in the art to possess these features. *See, e.g.,* User's Manual for Pioneer CLD V2600 and CLD V2400 Laser Disk Player.

This limitation is disclosed by the '479 Patent.

See e.g., Fig. 16 (disclosing volume adjust icon and mute icon); col. 41, ll. 23-31 ("As indicated in the right hand portion of FIG. 16 (where menu selection elements are display as overlain onto a video stream image), the menu display may mimic functional controls provided as remote control functions in prior television receivers or video cassette recorder/players. Selection of the remote control functions enables use of the embodied icons such as the iconic representations of "channel up" or "channel down" found in remote control functionality for navigation among programming choices.")

This limitation is disclosed by the '386 Patent.

See, e.g., Fig. 6; col. 6, ll. 7-31 ("FIG. 6 illustrates an example of menu and point displayed on a display device (e.g., CRT, television screen, computer monitor, LCD or other display device) using an OSD circuit according to the present invention. According to the complicated functional capabilities and high-quality of the controlled device, such as a multi-screen television or television incorporating or coupled to video playback or receiver devices (VCRs, satellites, etc.) or having special audio functions, it is difficult to control the device, which necessitates many remote control keys, and it also is difficult to manipulate the device. An OSD circuit according to the present invention simplifies remote controller 61 such as a mouse for a personal computer or other remote control device, as illustrated in FIG. 6. That is to say, main channel CH0 and several sub-channels CH1, CH2 and CH3 may be displayed on screen 62 as illustrated, in a general OSD circuit, if remote controller 61 is operated to display menu 64. Pointer 65 is moved to select a menu for channel selection, UP (66) or DOWN (67), a button for volume increase (68) or volume decrease (69), or next menu, thereby knowing the

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	selected indicative content by determination of the position value by the central controller. Thus, it is possible to control the device by a simple remote controller.”)
<u>Claim 12</u>	
The video graphics process of claim 11 further comprises,	See claim 11.
within the memory, programming instructions that, when read by the processing unit, causes the processing unit to provide, as the control panel, at least one of: volume adjust icon, mute icon, channel up icon, channel down icon, numerical channel display, and alpha-numeric channel display.	The ‘124 Patent discloses this limitation: <i>See, e.g.</i> Fig. 8; col. 12, ll. 1-7 (“To produce playback server 1302, the Dmplay demonstration program was modified using shared memory variables to include multi-speed playback and the ability to accept multi-casted commands from playback software 1104. Playback server 1102 runs on video playback computer 802.”); col. 3, ll. 4-7 (“Then, as the performer walks in front of a blue screen/camera set up, she may appear to walk in to the scene being displayed on the screen. She may also interact with the audio portion of the system.”); <i>see also, e.g.,</i> col. 4, ll. 46-54. To the extent the limitation requiring at least one of a volume adjust icon, a mute icon, a channel up icon, a channel down icon, a numerical channel display, or an alpha-numeric channel display is not inherently disclosed in the ‘124 Patent, the ‘124 patent renders this limitation obvious, either alone or in light of the ‘785, the ‘479 and/or the ‘386 Patents. The ‘785 Patent discloses this limitation. <i>See, e.g.,</i> col. 44, ll. 56 (“a video processor operatively coupled to said CPU”); col. 43, l. 62 - col. 44, . 7 (“The display controller may also modify displayed visual images by displaying the video stream image as a minor portion of the available field. Access to such a display is illustrated by the sequence of FIGS. 16 through 18. As indicated in the right hand portion of FIG. 16 (where menu selection elements are display [sic] as overlain onto a video stream image), the menu display may mimic functional controls provided as remote control

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	functions in prior television receivers or video cassette recorder/players. Selection of the remote control functions enables use of the embodied icons such as the iconic representations of “channel up” or “channel down” found in remote control functionality for navigation among programming choices.”) This limitation is disclosed by the ‘479 Patent. See, e.g., ‘479 Patent at col. 41, ll. 27-31 (“Selection of the remote control functions enables use of the embodied icons such as the iconic representations of ‘channel up’ or ‘channel down’ found in remote control functionality for navigation among programming choices.”) This limitation is disclosed by the ‘386 Patent. See, e.g., Fig. 6, col. 6, ll. 7-31 (“FIG. 6 illustrates an example of menu and point displayed on a display device (e.g., CRT, television screen, computer monitor, LCD or other display device) using an OSD circuit according to the present invention. According to the complicated functional capabilities and high-quality of the controlled device, such as a multi-screen television or television incorporating or coupled to video playback or receiver devices (VCRs, satellites, etc.) or having special audio functions, it is difficult to control the device, which necessitates many remote control keys, and it also is difficult to manipulate the device. An OSD circuit according to the present invention simplifies remote controller 61 such as a mouse for a personal computer or other remote control device, as illustrated in FIG. 6. That is to say, main channel CH0 and several sub-channels CH1, CH2 and CH3 may be displayed on screen 62 as illustrated, in a general OSD circuit, if remote controller 61 is operated to display menu 64. Pointer 65 is moved to select a menu for channel selection, UP (66) or DOWN (67), a button for volume increase (68) or volume decrease (69), or next menu, thereby knowing the selected indicative content by determination of the position value by the central controller. Thus, it is possible to control the device by a simple remote controller.”)
	<u>Claim 13</u>
The video graphics process of claim 11	See claim 11.

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comprises,	The '124 Patent discloses this limitation. <i>See, e.g.</i> col. 1, ll. 62-66 ("Second, the performer may use a pointer to high-light items in the images on the screen. The pointer acts like a virtual flashlight. The pointer may also be used to make selections from a menu displayed on the screen by, for example, pressing a button on the pointer."); col. 4, ll. 38-45 ("Furthermore, given the ability to point, the performer may interact with the images on the display screen much like a computer user interacts with a menu in a point-and-shoot type computer application. To accomplish this, pointer 118 provides a pointer signal 130 to media production system 104. This allows the user to have further control over the production of media images by media production system 104.") To the extent this limitation is not literally disclosed by the '124 Patent, it is rendered obvious by that patent, either alone or in combination with the '628, '785 and/or '304 Patents. The '628 Patent discloses this limitation. <i>See, e.g.</i>, col. 4, ll 44-57 ("If it is not in playback mode, it selects the blue screen as a main screen (707). If the tuner system is tuner 2, it will determine whether the present mode is playback mode or not (step 708). If it is in playback mode, it selects the playback screen as the main screen (step 706). If it is not in playback mode, it will determine whether it is a main screen or a sub-screen (step 710)."). [¶] If it is a main screen, it will check the existence of a synchronous signal (step 711). If no synchronous signal is detected, it selects the blue screen as the main screen (step 712). If the signal is a sub-screen (step 710), it reverses the mode of main/sub again (step 713) and selects a main screen according to the kind of input: tuner 1, tuner 2 or LINE (step 714)." The '785 Patent discloses this limitation. <i>See, e.g.</i> Fig. 15. The '304 Patent discloses this limitation.

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	<i>See, e.g.</i> Fig. 3, Fig. 5 & col. 5, ll. 9-30 (“To label a channel, starting from the menu list 46 of Fig. 3, the banner 47 is scanned to CH. LABELS by depressing the down arrow key 24c. The left or right arrow key 24b, 24d is then depressed. The menu depicted in FIG. 5 is called up from the memory module 13 as per above, and a list of labels 70 from which to make a selection is shown. The tuner 21 is also routed to the P-I-P circuitry and the main screen is blanked as per above. If a channel, denominated X, is a CBS channel and is to be so labeled, the television tuner 21 is set to channel X, as indicated, and the active television picture of channel X appears in the P-I-P window 60. The user scans the labels menu 70 to highlight CBS, indicated schematically by the underscore, using the arrow keys 24a-24d of the RCU 16. The channel label may be automatically established when the operator moves to the next channel number for additional channel labeling by depressing the menu key, or waiting ten seconds. Thereafter, whenever channel X appears in the channel indicator overlay 48 or during a regular television display, it will read “CH X CBS”. The menu screen 32 is restored when depressing the menu key 22, or waiting the time-out of ten seconds, after which the main screen display will appear.”) The ‘479 Patent discloses this limitation: <i>See, e.g.</i>, col. 38, ll. 40-44 (“This is a simple example of the user interface; a typical situation is much more complex. For instance, some menu cards only present information, and do not allow any action except exiting to the previous level after viewing the information.”) To the extent this limitation is not inherently disclosed by the ‘479 patent, it is rendered obvious by that patent, either alone or in combination with the ‘628, ‘785 and/or ‘304 Patents.
<u>Claim 14</u>	
A video graphics processor comprising:	Assuming for present purposes (without admitting) that the preamble is a claim limitation: The ‘124 Patent discloses this limitation. <i>See, e.g.</i>, Fig. 3, Fig. 8, col. 8, ll. 41-52 (“In the preferred embodiment, playback computer 802 is an Indigo computer with Galileo and Cosmo boards. Graphics computer 806 is an Onyx Reality Engine2 computer equipped with a Sirius video option and a Vigra audio board (i.e., the puppet's voice from the face puppeteer).

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Both of these computers are available from Silicon Graphics Incorporated. Mountain View. Calif. The video output of the Indigo Galileo board is output to the Sirius video option of the Onyx Reality Engine. Graphics computer 806 also receives the inputs from blue screen camera 1004, a video telephone (not shown), body motion capture system 602 and tracking electronics 612.”)

The ‘479 patent discloses this limitation.

See, e.g., col. 6, ll. 56-65 (“The video processor 39 is a central element of the set top device. In addition to the elements recited above, the processor 39 is operatively connected with system memory 45, an analog audio control 46, a microprocessor 48 functioning as a central processing unit or CPU, flash memory 49, an I/O processor 50 including an infrared receiver/blaster, an expansion bus 51, a cable or telephone modem 52, and a Compact Disk (or CD) drive 54. Each of these elements serves functions to be described more fully hereinafter.”); col. 10, ll. 9-12 (“Referring now to FIGS. 3 through 5, the video processor 39 electronics are largely contained within one massive custom logic chip, known as an ASIC (Application Specific Integrated Circuit).”)

The ‘386 Patent discloses this limitation.

See, e.g., col. 4, ll. 8-9 (“FIGS. 2A and 2B are block diagrams of an OSD circuit according to the present invention”), col. 5, ll. 39-50 (“In pointer horizontal position detector 23, up/down bi-directional counter 41 up/down-counts a clock (XMVCLK) which determines the speed of moving the pointer horizontally according to a left- or right-signal to transmit the counted value as a horizontal position value to central controller 8 (which may be a microcomputer or other data processing device) via a data bus, and reloadable down-counter 42 loads the horizontal position value by HSYNC and down-counts the horizontal position value by HSYNC and down-counts the horizontal position value according to the OSD clock to activate the horizontal detection signal when the counted value is zero.”)

The ‘124 Patent discloses this limitation.

See, e.g., Fig. 3, Fig. 8, col. 8, ll. 41-52 (referring to the Onyx Reality Engine 2, which contains an R4400

a processing unit; and

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	processor (see Onyx Reality Engine 2 data sheet). The '479 Patent discloses this limitation. <i>See, e.g.</i>, col. 6, ll. 56-65 ("The video processor 39 is a central element of the set top device. In addition to the elements recited above, the processor 39 is operatively connected with system memory 45, an analog audio control 46, a microprocessor 48 functioning as a central processing unit or CPU, flash memory 49, an I/O processor 50 including an infrared receiver/blaster, an expansion bus 51, a cable or telephone modem 52, and a Compact Disk (or CD) drive 54. Each of these elements serves functions to be described more fully hereinafter."); col. 10, ll. 9-12 ("Referring now to FIGS. 3 through 5, the video processor 39 electronics are largely contained within one massive custom logic chip, known as an ASIC (Application Specific Integrated Circuit)."); col. 8, ll. 23-25 ("In the preferred embodiment, the CPU 48 is an 80376, manufactured by Intel Corp., 3065 Bowers Ave., Santa Clara, Calif., 95051. The 80376 is a variation of the well known 80386SX, which is well known in the art and also available from Intel Corp."). The '386 Patent discloses this limitation. <i>See, e.g.</i>, col. 4, ll. 8-9 ("FIGS. 2A and 2B are block diagrams of an OSD circuit according to the present invention"), col. 5, ll. 39-50 ("In pointer horizontal position detector 23, up/down bi-directional counter 41 up/down-counts a clock (XMVCLK) which determines the speed of moving the pointer horizontally according to a left- or right-signal to transmit the counted value as a horizontal position value to central controller 8 (which may be a microcomputer or other data processing device) via a data bus, and reloadable down-counter 42 loads the horizontal position value by HSYNC and down-counts the horizontal position value by HSYNC and down-counts the horizontal position value according to the OSD clock to activate the horizontal detection signal when the counted value is zero.")
memory that stores programming instructions that, when read by the processing unit, causes the	The '124 Patent discloses this limitation. <i>See, e.g.</i>, Fig. 3, Fig. 8, col. 8, ll. 41-52 (referring to the Onyx Reality Engine 2, which contains 512 MB of RAM processor memory (see Onyx Reality Engine 2 data sheet)). The '479 Patent discloses this limitation.

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processing unit to <i>See, e.g.,</i> col. 8, ll. 34-57 (“The present inventions contemplate that the CPU may access control programs stored, for example, in the set top device system memory 45 so as to be accessible to the processor, for controlling the display of visual images by said video display device. As will be understood by persons of skill in the design of program controlled digital devices, the processor accessing such a control program will be capable of loading the control program and operating under the control of the control program so as to accomplish the functions established by the author of the program. Such a control program may, for example in this disclosure, cause the command receiver circuitry associated with or embedded in the I/O processor 50 which receives command signals from the command transmitter circuitry of the remote control 20 to derive from the received command signals image directing signals directing modification of visual images displayed on the display device. Further, the control program will cause command processor circuitry in the video processor 39 which is coupled to the command receiver circuitry and to the video reception circuitry in the television receiver 10 to receive the image directing signals and modify the visual images displayed on the device 12 as directed by manipulation of the remote control by a human observer.”) The ‘386 Patent discloses this limitation: <i>See, e.g.,</i> Fig. 1, col. 1, ll. 30-33 (“OSD RAM 17 stores addresses and colors of characters to be displayed. The character (a character or a symbol icon, etc.) address and color are output by the RAM read address signal.”); Fig. 2B; col. 5, ll. 41-47 (“[W]hich determines the speed of moving the pointer horizontally according to a left- or right-signal to transmit the counted value as a horizontal position value to central controller 8 (which may be a microcomputer or other data processing device) via a data bus, and reloadable down-counter 42 loads the horizontal position value by HSYNC”); Fig. 6; col. 6, ll. 24-31 (“Pointer 65 is moved to select a menu for channel selection, UP (66) or DOWN (67), a button for volume increase (68) or volume decrease (69), or next menu, thereby knowing the selected indicative content by determination of the position value by the central controller. Thus, it is possible to control the device by a simple remote controller.”)	(a) detect selection of a video control icon, wherein the video control icon relates to The ‘124 Patent discloses this limitation. <i>See, e.g.,</i> Fig. 1; col. 12, ll. 18-19 (“Digital art elements visible on the screen can be clicked on by the performer.”); col. 12, ll. 22-24 (“Thus, when a digital art element is “clicked” the corresponding Button node is

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live video that is being presented as a background on a display;	notified of this interaction event.”); col. 4, ll. 38-45 (“Furthermore, given the ability to point, the performer may interact with the images on the display screen much like a computer user interacts with a menu in a point-and-shoot type computer application. To accomplish this, pointer 118 provides a pointer signal 130 to media production system 104. This allows the user to have further control over the production of media images by media production system 104.”); <i>see also</i> col. 9, ll. 62-65, col. 10, l. 65 - col. 11, l. 5. The ‘479 Patent discloses this limitation. <i>See, e.g.</i>, col. 35, l. 63 - col. 36, l. 11 (“A two axis device, in contrast, typically provides a separate control element for selection. Examples may be found in a conventional personal computer pointing device such as those known as a mouse, and in conventional remote controls as typically provided with such consumer electronic devices as television receivers, video cassette recorders, audio amplifiers, compact disk players, video disc players, and the like. In both instances, one control element (a rolling ball in the case of the mouse and up-down or right-left rocker switches or stepping keys in the case of the conventional remote control) may direct movement of a selection display element, such as a highlighted band, across a displayed video image, and then a second control element (in the case of a mouse, a button; a conventional remote control, a push switch) is manipulated to make a selection of a display feature.”). The ‘386 Patent discloses this limitation. <i>See, e.g.</i>, col. 2, ll. 16-20 (“It is an object of the present invention to provide an on screen display (OSD) circuit for controlling a display device with a simple remote controller by additionally offering a pointer display and position detection function to a conventional OSD circuit.”)
(b) provide a control panel while the live video remain [sic] the background and an application that was in focus remains in focus	The ‘124 Patent discloses this limitation. <i>See, e.g.</i> Fig. 1; Fig. 2; col. 6, ll. 12-16 (“The cursor allows the performer to point to or highlight, for an audience, elements displayed on screen 108. The cursor also allows the performer to interact with graphics computer 806 to make menu selections.”); col. 12, ll. 18-19 (“Digital art elements visible on the screen can be clicked on by the performer.”); col. 1, ll. 18-22 (“The video segment can take on varying degrees of

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when the video control icon has been selected; and

involvement in the performance. For example, a performer may treat the video segment as background and ignore it all together, she may narrate or comment on the video segment, or she may interact with the video segment.”); col. 7, l. 65 - col. 8, l. 8 (“Graphics computer 806 generates all real-time graphics (graphics layer 204) for image 122. Graphics computer 806 also texture maps the decompressed video elements from playback computer 802 and controls playback of video from laser disk player 810. Graphics computer 806 communicates with playback computer 802 via ethernet bus 305. Graphics computer 806 also receives input from a blue screen camera 1004 (see Fig. 10), a video telephone (not shown). Body motion capture system 602 and tracking electronics 612. Graphics computer 806 controls laser disk player 810 via a serial control line 809 (e.g., an RS-232).”)

The ‘479 Patent discloses this limitation.

See, e.g., Fig. 16, col 41, ll. 23-31 (“As indicated in the right hand portion of FIG. 16 (where menu selection elements are display as overlain onto a video stream image), the menu display may mimic functional controls provided as remote control functions in prior television receivers or video cassette recorder/players. Selection of the remote control functions enables use of the embodied icons such as the iconic representations of “channel up” or “channel down” found in remote control functionality for navigation among programming choices.”)

The ‘386 Patent discloses this limitation.

See, e.g., Fig. 6, col. 6, ll. 7-31 (“FIG. 6 illustrates an example of menu and point displayed on a display device (e.g., CRT, television screen, computer monitor, LCD or other display device) using an OSD circuit according to the present invention. According to the complicated functional capabilities and high-quality of the controlled device, such as a multi-screen television or television incorporating or coupled to video playback or receiver devices (VCRs, satellites, etc.) or having special audio functions, it is difficult to control the device, which necessitates many remote control keys, and it also is difficult to manipulate the device. An OSD circuit according to the present invention simplifies remote controller 61 such as a mouse for a personal computer or other remote control device, as illustrated in FIG. 6. That is to say, main channel CH0 and several sub-channels CH1, CH2 and CH3 may be displayed on screen 62 as illustrated, in a general OSD circuit, if remote controller

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	61 is operated to display menu 64. Pointer 65 is moved to select a menu for channel selection, UP (66) or DOWN (67), a button for volume increase (68) or volume decrease (69), or next menu, thereby knowing the selected indicative content by determination of the position value by the central controller. Thus, it is possible to control the device by a simple remote controller.”)
(c) adjust at least one attribute of the live video based on an input received via the control panel, wherein the at least one attribute included: volume, mute, pause, rewind, and fast-forward.	The ‘124 Patent discloses this limitation. See, e.g., Fig. 2; col. 7, l. 65 - col. 8, l. 8 (“Graphics computer 806 generates all real-time graphics (graphics layer 204) for image 122. Graphics computer 806 also texture maps the decompressed video elements from playback computer 802 and controls playback of video from laser disk player 810. Graphics computer 806 communicates with playback computer 802 via ethernet bus 305. Graphics computer 806 also receives input from a blue screen camera 1004 (see Fig. 10), a video telephone (not shown). Body motion capture system 602 and tracking electronics 612. Graphics computer 806 controls laser disk player 810 via a serial control line 809 (e.g., an RS-232).”; col. 4, ll. 63-65 (“These components may be used, for example, as follows. During a performance, video playback layer 206 may be used to display a pre-recorded background video image 206.”); col. 4, ll. 38-45 (“Furthermore, given the ability to point, the performer may interact with the images on the display screen much like a computer user interacts with a menu in a point-and-shoot type computer application. To accomplish this, pointer 118 provides a pointer signal 130 to media production system 104. This allows the user to have further control over the production of media images by media production system 104.”); To the extent the ‘124 Patent does not inherently disclose a pause icon, a rewind icon, or a fast-forward icon, these features are disclosed by reference to the laser disk player, which are known to one of ordinary skill in the art to possess these features. See, e.g., User’s Manual for Pioneer CLD V2600 and CLD V2400 Laser Disk Player. This limitation is disclosed by the ‘479 Patent. See e.g., Fig. 16 (disclosing volume adjust icon and mute icon); col. 41, ll. 23-31 (“As indicated in the right hand portion of FIG. 16 (where menu selection elements are display as overlain onto a video stream image), the menu display may mimic functional controls provided as remote control functions in prior television receivers

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	or video cassette recorder/players. Selection of the remote control functions enables use of the embodied icons such as the iconic representations of “channel up” or “channel down” found in remote control functionality for navigation among programming choices.”) This limitation is disclosed by the ‘386 Patent. See, e.g., Fig. 6; col. 6, ll. 7-31 (“FIG. 6 illustrates an example of menu and point displayed on a display device (e.g., CRT, television screen, computer monitor, LCD or other display device) using an OSD circuit according to the present invention. According to the complicated functional capabilities and high-quality of the controlled device, such as a multi-screen television or television incorporating or coupled to video playback or receiver devices (VCRs, satellites, etc.) or having special audio functions, it is difficult to control the device, which necessitates many remote control keys, and it also is difficult to manipulate the device. An OSD circuit according to the present invention simplifies remote controller 61 such as a mouse for a personal computer or other remote control device, as illustrated in FIG. 6. That is to say, main channel CH0 and several sub-channels CH1, CH2 and CH3 may be displayed on screen 62 as illustrated, in a general OSD circuit, if remote controller 61 is operated to display menu 64. Pointer 65 is moved to select a menu for channel selection, UP (66) or DOWN (67), a button for volume increase (68) or volume decrease (69), or next menu, thereby knowing the selected indicative content by determination of the position value by the central controller. Thus, it is possible to control the device by a simple remote controller.”) The ‘304 Patent discloses this limitation. See, e.g., col. 3, ll 17-22 (“In controlling the operation of the television receiver 10, the microprocessor 12 interprets and processes the user commands entered from the RCU 16, and issues commands to the components of the television receiver 10; e.g., tuning, volume, channel selection, etc., in general, and specifically in controlling the functions according to the invention.”)
<u>Claim 15</u>	
The video graphics	See claim 14.

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processor of claim 14 further comprises,	The '124 Patent discloses this limitation. <i>See, e.g.,</i> Fig. 2; col. 7, l. 65 - col. 8, l. 8 ("Graphics computer 806 generates all real-time graphics (graphics layer 204) for image 122. Graphics computer 806 also texture maps the decompressed video elements from playback computer 802 and controls playback of video from laser disk player 810. Graphics computer 806 communicates with playback computer 802 via ethernet bus 305. Graphics computer 806 also receives input from a blue screen camera 1004 (see Fig. 10), a video telephone (not shown). Body motion capture system 602 and tracking electronics 612. Graphics computer 806 controls laser disk player 810 via a serial control line 809 (e.g., an RS-232).") To the extent the '124 Patent does not inherently disclose a volume icon, a mute icon, a channel-up icon, or a channel-down icon, this limitation would have been obvious in light of the '124 Patent, either alone or in light of the '479 Patent, the '386 Patent, and/or the '304 Patent. This limitation is disclosed by the '479 Patent. <i>See e.g.,</i> Fig. 16 (disclosing volume adjust icon and mute icon); col. 41, ll. 23-31 ("As indicated in the right hand portion of FIG. 16 (where menu selection elements are display as overlain onto a video stream image), the menu display may mimic functional controls provided as remote control functions in prior television receivers or video cassette recorder/players. Selection of the remote control functions enables use of the embodied icons such as the iconic representations of "channel up" or "channel down" found in remote control functionality for navigation among programming choices.") This limitation is disclosed by the '386 Patent. <i>See, e.g.,</i> Fig. 6; col. 6, ll. 7-31 ("FIG. 6 illustrates an example of menu and point displayed on a display device (e.g., CRT, television screen, computer monitor, LCD or other display device) using an OSD circuit according to the present invention. According to the complicated functional capabilities and high-quality of the controlled

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	device, such as a multi-screen television or television incorporating or coupled to video playback or receiver devices (VCRs, satellites, etc.) or having special audio functions, it is difficult to control the device, which necessitates many remote control keys, and it also is difficult to manipulate the device. An OSD circuit according to the present invention simplifies remote controller 61 such as a mouse for a personal computer or other remote control device, as illustrated in FIG. 6. That is to say, main channel CH0 and several sub-channels CH1, CH2 and CH3 may be displayed on screen 62 as illustrated, in a general OSD circuit, if remote controller 61 is operated to display menu 64. Pointer 65 is moved to select a menu for channel selection, UP (66) or DOWN (67), a button for volume increase (68) or volume decrease (69), or next menu, thereby knowing the selected indicative content by determination of the position value by the central controller. Thus, it is possible to control the device by a simple remote controller.”) The ‘304 Patent discloses this limitation. <i>See, e.g., col. 3, ll 17-22 (“In controlling the operation of the television receiver 10, the microprocessor 12 interprets and processes the user commands entered from the RCU 16, and issues commands to the components of the television receiver 10; e.g., tuning, volume, channel selection, etc., in general, and specifically in controlling the functions according to the invention.”).</i>
<u>Claim 16</u>	
The video graphics processor of claim 14 further comprises,	See claim 14.
within the memory, programming instructions that, when read by the processing unit, causes the processing unit to	The ‘124 Patent discloses this limitation. <i>See, e.g. col. 1, ll. 62-66 (“Second, the performer may use a pointer to high-light items in the images on the screen. The pointer acts like a virtual flashlight. The pointer may also be used to make selections from a menu displayed on the screen by, for example, pressing a button on the pointer.”); col. 4, ll. 38-45 (“Furthermore, given the ability to point, the performer may interact with the images on the display screen much like a</i>

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remove the control panel when another displayed element is selected.

computer user interacts with a menu in a point-and-shoot type computer application. To accomplish this, pointer 118 provides a pointer signal 130 to media production system 104. This allows the user to have further control over the production of media images by media production system 104.”)

To the extent this limitation is not literally disclosed by the ‘124 Patent, it is rendered obvious by that patent, either alone or in combination with the ‘628, ‘785 and/or ‘304 Patents.

The ‘628 Patent discloses this limitation.

See, e.g., col. 4, ll 44-57 (“If it is not in playback mode, it selects the blue screen as a main screen (707). If the tuner system is tuner 2, it will determine whether the present mode is playback mode or not (step 708). If it is in playback mode, it selects the playback screen as the main screen (step 706). If it is not in playback mode, it will determine whether it is a main screen or a sub-screen (step 710).”). ¶¶ If it is a main screen, it will check the existence of a synchronous signal (step 711). If no synchronous signal is detected, it selects the blue screen as the main screen (step 712). If the signal is a sub-screen (step 710), it reverses the mode of main/sub again (step 713) and selects a main screen according to the kind of input: tuner 1, tuner 2 or LINE (step 714).”

The ‘785 Patent discloses this limitation.

See, e.g. Fig. 15.

The ‘304 Patent discloses this limitation.

See, e.g. Fig. 3, Fig. 5 & col. 5, ll. 9-30 (“To label a channel, starting from the menu list 46 of Fig. 3, the banner 47 is scanned to CH. LABELS by depressing the down arrow key 24c. The left or right arrow key 24b, 24d is then depressed. The menu depicted in FIG. 5 is called up from the memory module 13 as per above, and a list of labels 70 from which to make a selection is shown. The tuner 21 is also routed to the P-I-P circuitry and the main screen is blanked as per above. If a channel, denominated X, is a CBS channel and is to be so labeled, the television tuner 21 is set to channel X, as indicated, and the active television picture of channel X appears in the P-I-P window 60. The user scans the labels menu 70 to highlight CBS, indicated schematically by the underscore, using the arrow keys 24a-24d of the RCU 16. The channel label may be automatically established

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	when the operator moves to the next channel number for additional channel labeling by depressing the menu key, or waiting ten seconds. Thereafter, whenever channel X appears in the channel indicator overlay 48 or during a regular television display, it will read "CH X CBS". The menu screen 32 is restored when depressing the menu key 22, or waiting the time-out of ten seconds, after which the main screen display will appear.") The '479 Patent discloses this limitation: <i>See, e.g.,</i> col. 38, ll. 40-44 ("This is a simple example of the user interface; a typical situation is much more complex. For instance, some menu cards only present information, and do not allow any action except exiting to the previous level after viewing the information.") To the extent this limitation is not inherently disclosed by the '479 patent, it is rendered obvious by that patent, either alone or in combination with the '628, '785 and/or '304 Patents.
<u>Claim 17</u>	
A digital storage device that stores programming instructions that, when read by a processing unit, causes the processing unit to provide control of background video, the digital storage device comprises:	Assuming for present purposes (without admitting) that the preamble is a claim limitation: The '124 Patent discloses this limitation. <i>See, e.g.,</i> Fig. 3, Fig. 8, col. 8, ll. 41-52 ("In the preferred embodiment, playback computer 802 is an Indigo computer with Galileo and Cosmo boards. Graphics computer 806 is an Onyx Reality Engine2 computer equipped with a Sirius video option and a Vigna audio board (i.e., the puppet's voice from the face puppeteer). Both of these computers are available from Silicon Graphics Incorporated. Mountain View. Calif. The video output of the Indigo Galileo board is output to the Sirius video option of the Onyx Reality Engine. Graphics computer 806 also receives the inputs from blue screen camera 1004, a video telephone (not shown), body motion capture system 602 and tracking electronics 612.") The '479 patent discloses this limitation. <i>See, e.g.,</i> col. 6, ll. 56-65 ("The video processor 39 is a central element of the set top device. In addition to the

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elements recited above, the processor 39 is operatively connected with system memory 45, an analog audio control 46, a microprocessor 48 functioning as a central processing unit or CPU, flash memory 49, an I/O processor 50 including an infrared receiver/blaster, an expansion bus 51, a cable or telephone modem 52, and a Compact Disk (or CD) drive 54. Each of these elements serves functions to be described more fully hereinafter.”); col. 10, ll. 9-12 (“Referring now to FIGS. 3 through 5, the video processor 39 electronics are largely contained within one massive custom logic chip, known as an ASIC (Application Specific Integrated Circuit).”)

The ‘386 Patent discloses this limitation.

See, e.g., col. 4, ll. 8-9 (“FIGS. 2A and 2B are block diagrams of an OSD circuit according to the present invention”), col. 5, ll. 39-50 (“In pointer horizontal position detector 23, up/down bi-directional counter 41 up/down-counts a clock (XMVCLK) which determines the speed of moving the pointer horizontally according to a left- or right-signal to transmit the counted value as a horizontal position value to central controller 8 (which may be a microcomputer or other data processing device) via a data bus, and reloadable down-counter 42 loads the horizontal position value by HSYNC and down-counts the horizontal position value by HSYNC and down-counts the horizontal position value according to the OSD clock to activate the horizontal detection signal when the counted value is zero.”)

The ‘124 Patent further discloses this limitation.

See, e.g., Fig. 3, Fig. 8, col. 8, ll. 41-52 (referring to the Onyx Reality Engine 2, which contains 512 MB of RAM processor memory (see Onyx Reality Engine 2 data sheet)).

The ‘479 Patent further discloses this limitation.

See, e.g., col. 8, ll. 34-57 (“The present inventions contemplate that the CPU may access control programs stored, for example, in the set top device system memory 45 so as to be accessible to the processor, for controlling the display of visual images by said video display device. As will be understood by persons of skill in the design of program controlled digital devices, the processor accessing such a control program will be

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	capable of loading the control program and operating under the control of the control program so as to accomplish the functions established by the author of the program. Such a control program may, for example in this disclosure, cause the command receiver circuitry associated with or embedded in the I/O processor 50 which receives command signals from the command transmitter circuitry of the remote control 20 to derive from the received command signals image directing signals directing modification of visual images displayed on the display device. Further, the control program will cause command processor circuitry in the video processor 39 which is coupled to the command receiver circuitry and to the video reception circuitry in the television receiver 10 to receive the image directing signals and modify the visual images displayed on the device 12 as directed by manipulation of the remote control by a human observer.”) The ‘386 Patent further discloses this limitation: <i>See, e.g.,</i> Fig. 1, col. 1, ll. 30-33 (“OSD RAM 17 stores addresses and colors of characters to be displayed. The character (a character or a symbol icon, etc.) address and color are output by the RAM read address signal.”); Fig. 2B; col. 5, ll. 41-47 (“[W]hich determines the speed of moving the pointer horizontally according to a left- or right-signal to transmit the counted value as a horizontal position value to central controller 8 (which may be a microcomputer or other data processing device) via a data bus, and reloadable down-counter 42 loads the horizontal position value by HSYNC . . .”); Fig. 6; col. 6, ll. 24-31 (“Pointer 65 is moved to select a menu for channel selection, UP (66) or DOWN (67), a button for volume increase (68) or volume decrease (69), or next menu, thereby knowing the selected indicative content by determination of the position value by the central controller. Thus, it is possible to control the device by a simple remote controller.”)
first storage means for storing programming instructions that, when read by the processing unit, causes the processing unit to provide a video control icon that is visible on	The ‘124 Patent discloses this limitation. <i>See, e.g.,</i> Fig. 1; col. 12, ll. 18-19 (“Digital art elements visible on the screen can be clicked on by the performer.”); col. 1, ll. 18-22 (“The video segment can take on varying degrees of involvement in the performance. For example, a performer may treat the video segment as background and ignore it all together, she may narrate or comment on the video segment, or she may interact with the video segment.”); <i>see also</i> col. 2, ll. 35-39, col. 4, l. 63 - col. 5, l. 12.

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the display, wherein the video control icon relates to live video that is being presented as a background on a display;	The '479 Patent discloses this limitation. <i>See, e.g.</i>, col. 41, ll. 27-31 ("Selection of the remote control functions enables use of the embodied icons such as the iconic representations of "channel up" or "channel down" found in remote control functionality for navigation among programming choices.") The '386 Patent discloses this limitation. <i>See, e.g.</i>, Abstract ("A method of remotely controlling a television receiver using the OSD circuit is performed such that a video signal applied to the television receiver is displayed on a screen, if there is a necessity/desire of controlling the television receiver, a control menu and a pointer are together displayed, the position of the pointer is moved to a desired menu by a remote controller, and then the desired menu is selected by a selection signal of the remote controller, thereby operating the television receiver in a desirable way.")
second storage means for storing programming instructions that, when read by the processing unit, causes the programming unit to detect selection of the video control icon; and	The '124 Patent discloses this limitation. <i>See, e.g.</i>, Fig. 1; col. 12, ll. 18-19 ("Digital art elements visible on the screen can be clicked on by the performer."); col. 12, ll. 22-24 ("Thus, when a digital art element is "clicked" the corresponding Button node is notified of this interaction event."); col. 4, ll. 38-45 ("Furthermore, given the ability to point, the performer may interact with the images on the display screen much like a computer user interacts with a menu in a point-and-shoot type computer application. To accomplish this, pointer 118 provides a pointer signal 130 to media production system 104. This allows the user to have further control over the production of media images by media production system 104."); <i>see also</i> col. 9, ll. 62-65, col. 10, l. 65 - col. 11, l. 5. The '479 Patent discloses this limitation. <i>See, e.g.</i>, col. 35, l. 63 - col. 36, l. 11 ("A two axis device, in contrast, typically provides a separate control element for selection. Examples may be found in a conventional personal computer pointing device such as those known as a mouse, and in conventional remote controls as typically provided with such consumer electronic devices as television receivers, video cassette recorders, audio amplifiers, compact disk players, video disc players, and the like. In both instances, one control element (a rolling ball in the case of the mouse

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	and up-down or right-left rocker switches or stepping keys in the case of the conventional remote control) may direct movement of a selection display element, such as a highlighted band, across a displayed video image, and then a second control element (in the case of a mouse, a button; a conventional remote control, a push switch) is manipulated to make a selection of a display feature.”). The ‘386 Patent discloses this limitation. <i>See, e.g.</i>, col. 2, ll. 16-20 (“It is an object of the present invention to provide an on screen display (OSD) circuit for controlling a display device with a simple remote controller by additionally offering a pointer display and position detection function to a conventional OSD circuit.”)
third storage means for storing programming instructions that, when read by the processing unit, causes the processing unit to provide a control panel while the live video remains in the background and an application that was in focus remains in focus when the video control icon has been selected.	The ‘124 Patent discloses this limitation. <i>See, e.g.</i> Fig. 1; Fig. 2; col. 6, ll. 12-16 (“The cursor allows the performer to point to or highlight, for an audience, elements displayed on screen 108. The cursor also allows the performer to interact with graphics computer 806 to make menu selections.”); col. 12, ll. 18-19 (“Digital art elements visible on the screen can be clicked on by the performer.”); col. 1, ll. 18-22 (“The video segment can take on varying degrees of involvement in the performance. For example, a performer may treat the video segment as background and ignore it all together, she may narrate or comment on the video segment, or she may interact with the video segment.”); col. 7, l. 65 - col. 8, l. 8 (“Graphics computer 806 generates all real-time graphics (graphics layer 204) for image 122. Graphics computer 806 also texture maps the decompressed video elements from playback computer 802 and controls playback of video from laser disk player 810. Graphics computer 806 communicates with playback computer 802 via ethernet bus 305. Graphics computer 806 also receives input from a blue screen camera 1004 (see Fig. 10), a video telephone (not shown). Body motion capture system 602 and tracking electronics 612. Graphics computer 806 controls laser disk player 810 via a serial control line 809 (e.g., an RS-232).”) The ‘479 Patent discloses this limitation.

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	<i>See, e.g.</i>, Fig. 16, col 41, ll. 23-31 (“As indicated in the right hand portion of FIG. 16 (where menu selection elements are display as overlain onto a video stream image), the menu display may mimic functional controls provided as remote control functions in prior television receivers or video cassette recorder/players. Selection of the remote control functions enables use of the embodied icons such as the iconic representations of “channel up” or “channel down” found in remote control functionality for navigation among programming choices.”) The ‘386 Patent discloses this limitation. <i>See, e.g.</i>, Fig. 6, col. 6, ll. 7-31 (“FIG. 6 illustrates an example of menu and point displayed on a display device (e.g., CRT, television screen, computer monitor, LCD or other display device) using an OSD circuit according to the present invention. According to the complicated functional capabilities and high-quality of the controlled device, such as a multi-screen television or television incorporating or coupled to video playback or receiver devices (VCRs, satellites, etc.) or having special audio functions, it is difficult to control the device, which necessitates many remote control keys, and it also is difficult to manipulate the device. An OSD circuit according to the present invention simplifies remote controller 61 such as a mouse for a personal computer or other remote control device, as illustrated in FIG. 6. That is to say, main channel CH0 and several sub-channels CH1, CH2 and CH3 may be displayed on screen 62 as illustrated, in a general OSD circuit, if remote controller 61 is operated to display menu 64. Pointer 65 is moved to select a menu for channel selection, UP (66) or DOWN (67), a button for volume increase (68) or volume decrease (69), or next menu, thereby knowing the selected indicative content by determination of the position value by the central controller. Thus, it is possible to control the device by a simple remote controller.”)
u The digital storage device of claim 17 further comprises	See claim 17.
means for storing programming	The ‘124 Patent discloses this limitation.

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instructions that, when read by the processing unit, causes the processing unit to provide, as the control panel, at least one of: volume adjust icon, mute icon, pause icon, rewind icon, and fast-forward icon.

See, e.g., Fig. 2; col. 7, l. 65 - col. 8, l. 8 ("Graphics computer 806 generates all real-time graphics (graphics layer 204) for image 122. Graphics computer 806 also texture maps the decompressed video elements from playback computer 802 and controls playback of video from laser disk player 810. Graphics computer 806 communicates with playback computer 802 via ethernet bus 305. Graphics computer 806 also receives input from a blue screen camera 1004 (see Fig. 10), a video telephone (not shown). Body motion capture system 602 and tracking electronics 612. Graphics computer 806 controls laser disk player 810 via a serial control line 809 (e.g., an RS-232).")

To the extent the '124 Patent does not inherently disclose a pause icon, a rewind icon, or a fast-forward icon, these features are inherently anticipated by reference to the laser disk player, which are known to one of ordinary skill in the art to possess these features. *See, e.g., User's Manual for Pioneer CLD V2600 and CLD V2400 Laser Disk Player.*

This limitation is disclosed by the '479 Patent.

See e.g., Fig. 16 (disclosing volume adjust icon and mute icon); *col. 41, ll. 23-31* ("As indicated in the right hand portion of FIG. 16 (where menu selection elements are display as overlain onto a video stream image), the menu display may mimic functional controls provided as remote control functions in prior television receivers or video cassette recorder/players. Selection of the remote control functions enables use of the embodied icons such as the iconic representations of "channel up" or "channel down" found in remote control functionality for navigation among programming choices.")

This limitation is disclosed by the '386 Patent.

See, e.g., Fig. 6; col. 6, ll. 7-31 ("FIG. 6 illustrates an example of menu and point displayed on a display device (e.g., CRT, television screen, computer monitor, LCD or other display device) using an OSD circuit according to the present invention. According to the complicated functional capabilities and high-quality of the controlled device, such as a multi-screen television or television incorporating or coupled to video playback or receiver devices (VCRs, satellites, etc.) or having special audio functions, it is difficult to control the device, which necessitates many remote control keys, and it also is difficult to manipulate the device. An OSD circuit

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	according to the present invention simplifies remote controller 61 such as a mouse for a personal computer or other remote control device, as illustrated in FIG. 6. That is to say, main channel CH0 and several sub-channels CH1, CH2 and CH3 may be displayed on screen 62 as illustrated, in a general OSD circuit, if remote controller 61 is operated to display menu 64. Pointer 65 is moved to select a menu for channel selection, UP (66) or DOWN (67), a button for volume increase (68) or volume decrease (69), or next menu, thereby knowing the selected indicative content by determination of the position value by the central controller. Thus, it is possible to control the device by a simple remote controller.”)
<u>Claim 19</u>	
The digital storage device of claim 17 further comprises	See claim 17.
means for storing programming instructions that, when read by the processing unit, causes the processing unit to provide, as the control panel, at least on of: volume adjust icon, mute icon, channel up icon, channel down icon, numerical channel display, and alpha-numeric channel display.	The ‘124 Patent discloses this limitation: <i>See, e.g.</i> Fig. 8; col. 12, ll. 1-7 (“To produce playback server 1302, the Dmplay demonstration program was modified using shared memory variables to include multi-speed playback and the ability to accept multi-casted commands from playback software 1104. Playback server 1102 runs on video playback computer 802.”); col. 3, ll. 4-7 (“Then, as the performer walks in front of a blue screen/camera set up, she may appear to walk in to the scene being displayed on the screen. She may also interact with the audio portion of the system.”); <i>see also</i>, <i>e.g.</i>, col. 4, ll. 46-54. To the extent the limitation requiring at least one of a volume adjust icon, a mute icon, a channel up icon, a channel down icon, a numerical channel display, or a alpha-numeric channel display is not inherently disclosed in the ‘124 Patent, the ‘124 patent renders this limitation obvious, either alone or in light of the ‘785, the ‘479 and/or the ‘386 Patents. The ‘785 Patent discloses this limitation.

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See, e.g., col. 44, ll. 56 (“a video processor operatively coupled to said CPU”); col. 43, l. 62 - col. 44, . 7 (“The display controller may also modify displayed visual images by displaying the video stream image as a minor portion of the available field. Access to such a display is illustrated by the sequence of FIGS. 16 through 18. As indicated in the right hand portion of FIG. 16 (where menu selection elements are display [sic] as overlain onto a video stream image), the menu display may mimic functional controls provided as remote control functions in prior television receivers or video cassette recorder/players. Selection of the remote control functions enables use of the embodied icons such as the iconic representations of “channel up” or “channel down” found in remote control functionality for navigation among programming choices.”)

This limitation is disclosed by the ‘479 Patent.

See, e.g., ‘479 Patent at col. 41, ll. 27-31 (“Selection of the remote control functions enables use of the embodied icons such as the iconic representations of ‘channel up’ or ‘channel down’ found in remote control functionality for navigation among programming choices.”)

This limitation is disclosed by the ‘386 Patent.

See, e.g., Fig. 6, col. 6, ll. 7-31 (“FIG. 6 illustrates an example of menu and point displayed on a display device (e.g., CRT, television screen, computer monitor, LCD or other display device) using an OSD circuit according to the present invention. According to the complicated functional capabilities and high-quality of the controlled device, such as a multi-screen television or television incorporating or coupled to video playback or receiver devices (VCRs, satellites, etc.) or having special audio functions, it is difficult to control the device, which necessitates many remote control keys, and it also is difficult to manipulate the device. An OSD circuit according to the present invention simplifies remote controller 61 such as a mouse for a personal computer or other remote control device, as illustrated in FIG. 6. That is to say, main channel CH0 and several sub-channels CH1, CH2 and CH3 may be displayed on screen 62 as illustrated, in a general OSD circuit, if remote controller 61 is operated to display menu 64. Pointer 65 is moved to select a menu for channel selection, UP (66) or DOWN (67), a button for volume increase (68) or volume decrease (69), or next menu, thereby knowing the selected indicative content by determination of the position value by the central controller. Thus, it is possible to

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	control the device by a simple remote controller.”)
<u>Claim 20</u>	
The digital storage device of claim 17 further comprises	See claim 17.
means for storing programming instructions that, when read by the processing unit, causes the processing unit to remove the control panel when another displayed element is selected.	The ‘124 Patent discloses this limitation. <i>See, e.g.</i> col. 1, ll. 62-66 (“Second, the performer may use a pointer to high-light items in the images on the screen. The pointer acts like a virtual flashlight. The pointer may also be used to make selections from a menu displayed on the screen by, for example, pressing a button on the pointer.”); col. 4, ll. 38-45 (“Furthermore, given the ability to point, the performer may interact with the images on the display screen much like a computer user interacts with a menu in a point-and-shoot type computer application. To accomplish this, pointer 118 provides a pointer signal 130 to media production system 104. This allows the user to have further control over the production of media images by media production system 104.”) To the extent this limitation is not literally disclosed by the ‘124 Patent, it is rendered obvious by that patent, either alone or in combination with the ‘628, ‘785 and/or ‘304 Patents. The ‘628 Patent discloses this limitation. <i>See, e.g.</i>, col. 4, ll 44-57 (“If it is not in playback mode, it selects the blue screen as a main screen (707). If the tuner system is tuner 2, it will determine whether the present mode is playback mode or not (step 708). If it is in playback mode, it selects the playback screen as the main screen (step 706). If it is not in playback mode, it will determine whether it is a main screen or a sub-screen (step 710).”). [¶] If it is a main screen, it will check the existence of a synchronous signal (step 711). If no synchronous signal is detected, it selects the blue screen as the main screen (step 712). If the signal is a sub-screen (step 710), it reverses the mode of main/sub again (step 713) and selects a main screen according to the kind of input: tuner 1, tuner 2 or LINE (step 714).”)

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The '785 Patent discloses this limitation.

See, e.g. Fig. 15.

The '304 Patent discloses this limitation.

See, e.g. Fig. 3, Fig. 5 & col. 5, ll. 9-30 ("To label a channel, starting from the menu list 46 of Fig. 3, the banner 47 is scanned to CH. LABELS by depressing the down arrow key 24c. The left or right arrow key 24b, 24d is then depressed. The menu depicted in FIG. 5 is called up from the memory module 13 as per above, and a list of labels 70 from which to make a selection is shown. The tuner 21 is also routed to the P-I-P circuitry and the main screen is blanked as per above. If a channel, denominated X, is a CBS channel and is to be so labeled, the television tuner 21 is set to channel X, as indicated, and the active television picture of channel X appears in the P-I-P window 60. The user scans the labels menu 70 to highlight CBS, indicated schematically by the underscore, using the arrow keys 24a-24d of the RCU 16. The channel label may be automatically established when the operator moves to the next channel number for additional channel labeling by depressing the menu key, or waiting ten seconds. Thereafter, whenever channel X appears in the channel indicator overlay 48 or during a regular television display, it will read "CH X CBS". The menu screen 32 is restored when depressing the menu key 22, or waiting the time-out of ten seconds, after which the main screen display will appear.")

The '479 Patent discloses this limitation:

See, e.g., col. 38, ll. 40-44 ("This is a simple example of the user interface; a typical situation is much more complex. For instance, some menu cards only present information, and do not allow any action except exiting to the previous level after viewing the information.")

To the extent this limitation is not inherently disclosed by the '479 patent, it is rendered obvious by that patent, either alone or in combination with the '628, '785 and/or '304 Patents.

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Claim 21

A digital storage device that stores programming instructions that, when read by a processing unit, causes the processing unit to provide control of background video, the digital storage device comprises:

Assuming for present purposes (without admitting) that the preamble is a claim limitation:

The '124 Patent discloses this limitation.

See, e.g., Fig. 3, Fig. 8, col. 8, ll. 41-52 ("In the preferred embodiment, playback computer 802 is an Indigo computer with Galileo and Cosmo boards. Graphics computer 806 is an Onyx Reality Engine2 computer equipped with a Sirius video option and a Vigna audio board (i.e., the puppet's voice from the face puppeteer). Both of these computers are available from Silicon Graphics Incorporated. Mountain View. Calif. The video output of the Indigo Galileo board is output to the Sirius video option of the Onyx Reality Engine. Graphics computer 806 also receives the inputs from blue screen camera 1004, a video telephone (not shown), body motion capture system 602 and tracking electronics 612.")

The '479 patent discloses this limitation.

See, e.g., col. 6, ll. 56-65 ("The video processor 39 is a central element of the set top device. In addition to the elements recited above, the processor 39 is operatively connected with system memory 45, an analog audio control 46, a microprocessor 48 functioning as a central processing unit or CPU, flash memory 49, an I/O processor 50 including an infrared receiver/blaster, an expansion bus 51, a cable or telephone modem 52, and a Compact Disk (or CD) drive 54. Each of these elements serves functions to be described more fully hereinafter."); col. 10, ll. 9-12 ("Referring now to FIGS. 3 through 5, the video processor 39 electronics are largely contained within one massive custom logic chip, known as an ASIC (Application Specific Integrated Circuit).")

The '386 Patent discloses this limitation.

See, e.g., col. 4, ll. 8-9 ("FIGS. 2A and 2B are block diagrams of an OSD circuit according to the present invention"), col. 5, ll. 39-50 ("In pointer horizontal position detector 23, up/down bi-directional counter 41 up/down-counts a clock (XMVCLK) which determines the speed of moving the pointer horizontally according

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to a left- or right-signal to transmit the counted value as a horizontal position value to central controller 8 (which may be a microcomputer or other data processing device) via a data bus, and reloadable down-counter 42 loads the horizontal position value by HSYNC and down-counts the horizontal position value by HSYNC and down-counts the horizontal position value according to the OSD clock to activate the horizontal detection signal when the counted value is zero.”)

The ‘124 Patent further discloses this limitation.

See, e.g., Fig. 3, Fig. 8, col. 8, ll. 41-52 (referring to the Onyx Reality Engine 2, which contains 512 MB of RAM processor memory (*see* Onyx Reality Engine 2 data sheet)).

The ‘479 Patent further discloses this limitation.

See, e.g., col. 8, ll. 34-57 (“The present inventions contemplate that the CPU may access control programs stored, for example, in the set top device system memory 45 so as to be accessible to the processor, for controlling the display of visual images by said video display device. As will be understood by persons of skill in the design of program controlled digital devices, the processor accessing such a control program will be capable of loading the control program and operating under the control of the control program so as to accomplish the functions established by the author of the program. Such a control program may, for example in this disclosure, cause the command receiver circuitry associated with or embedded in the I/O processor 50 which receives command signals from the command transmitter circuitry of the remote control 20 to derive from the received command signals image directing signals directing modification of visual images displayed on the display device. Further, the control program will cause command processor circuitry in the video processor 39 which is coupled to the command receiver circuitry and to the video reception circuitry in the television receiver 10 to receive the image directing signals and modify the visual images displayed on the device 12 as directed by manipulation of the remote control by a human observer.”)

The ‘386 Patent further discloses this limitation:

See, e.g., Fig. 1, col. 1, ll. 30-33 (“OSD RAM 17 stores addresses and colors of characters to be displayed. The character (a character or a symbol icon, etc.) address and color are output by the RAM read address signal.”);

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	Fig. 2B; col. 5, ll. 41-47 (“[W]hich determines the speed of moving the pointer horizontally according to a left- or right-signal to transmit the counted value as a horizontal position value to central controller 8 (which may be a microcomputer or other data processing device) via a data bus, and reloadable down-counter 42 loads the horizontal position value by HSYNC”); Fig. 6; col. 6, ll. 24-31 (“Pointer 65 is moved to select a menu for channel selection, UP (66) or DOWN (67), a button for volume increase (68) or volume decrease (69), or next menu, thereby knowing the selected indicative content by determination of the position value by the central controller. Thus, it is possible to control the device by a simple remote controller.”)
first storage means for storing programming instructions that, when read by the processing unit, causes the processing unit to detect selection of a video control icon, wherein the video control icon relates to live video that is being presented as a background on a display;	The ‘124 Patent discloses this limitation. <i>See, e.g.</i>, Fig. 1; col. 12, ll. 18-19 (“Digital art elements visible on the screen can be clicked on by the performer.”); col. 1, ll. 18-22 (“The video segment can take on varying degrees of involvement in the performance. For example, a performer may treat the video segment as background and ignore it all together, she may narrate or comment on the video segment, or she may interact with the video segment.”); <i>see also</i> col. 2, ll. 35-39, col. 4, l. 63 - col. 5, l. 12. The ‘479 Patent discloses this limitation. <i>See, e.g.</i>, col. 41, ll. 27-31 (“Selection of the remote control functions enables use of the embodied icons such as the iconic representations of “channel up” or “channel down” found in remote control functionality for navigation among programming choices.”) The ‘386 Patent discloses this limitation. <i>See, e.g.</i>, Abstract (“A method of remotely controlling a television receiver using the OSD circuit is performed such that a video signal applied to the television receiver is displayed on a screen, if there is a necessity/desire of controlling the television receiver, a control menu and a pointer are together displayed, the position of the pointer is moved to a desired menu by a remote controller, and then the desired menu is selected by a selection signal of the remote controller, thereby operating the television receiver in a desirable way.”)

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second storage means for storing programming instructions that, when read by the processing unit, causes the processing unit to provide a control panel while the live video remains in the background and an application that was in focus remains in focus when the video control icon has been selected; and

The '124 Patent discloses this limitation.

See, e.g. Fig. 1; Fig. 2; col. 6, ll. 12-16 ("The cursor allows the performer to point to or highlight, for an audience, elements displayed on screen 108. The cursor also allows the performer to interact with graphics computer 806 to make menu selections."); col. 12, ll. 18-19 ("Digital art elements visible on the screen can be clicked on by the performer."); col. 1, ll. 18-22 ("The video segment can take on varying degrees of involvement in the performance. For example, a performer may treat the video segment as background and ignore it all together, she may narrate or comment on the video segment, or she may interact with the video segment."); col. 7, l. 65 - col. 8, l. 8 ("Graphics computer 806 generates all real-time graphics (graphics layer 204) for image 122. Graphics computer 806 also texture maps the decompressed video elements from playback computer 802 and controls playback of video from laser disk player 810. Graphics computer 806 communicates with playback computer 802 via ethernet bus 305. Graphics computer 806 also receives input from a blue screen camera 1004 (see Fig. 10), a video telephone (not shown). Body motion capture system 602 and tracking electronics 612. Graphics computer 806 controls laser disk player 810 via a serial control line 809 (e.g., an RS-232).")

The '479 Patent discloses this limitation.

See, e.g., Fig. 16, col 41, ll. 23-31 ("As indicated in the right hand portion of FIG. 16 (where menu selection elements are display as overlain onto a video stream image), the menu display may mimic functional controls provided as remote control functions in prior television receivers or video cassette recorder/players. Selection of the remote control functions enables use of the embodied icons such as the iconic representations of "channel up" or "channel down" found in remote control functionality for navigation among programming choices.").

The '386 Patent discloses this limitation.

See, e.g., Fig. 6, col. 6, ll. 7-31 ("FIG. 6 illustrates an example of menu and point displayed on a display device (e.g., CRT, television screen, computer monitor, LCD or other display device) using an OSD circuit according to the present invention. According to the complicated functional capabilities and high-quality of the controlled

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	device, such as a multi-screen television or television incorporating or coupled to video playback or receiver devices (VCRs, satellites, etc.) or having special audio functions, it is difficult to control the device, which necessitates many remote control keys, and it also is difficult to manipulate the device. An OSD circuit according to the present invention simplifies remote controller 61 such as a mouse for a personal computer or other remote control device, as illustrated in FIG. 6. That is to say, main channel CH0 and several sub-channels CH1, CH2 and CH3 may be displayed on screen 62 as illustrated, in a general OSD circuit, if remote controller 61 is operated to display menu 64. Pointer 65 is moved to select a menu for channel selection, UP (66) or DOWN (67), a button for volume increase (68) or volume decrease (69), or next menu, thereby knowing the selected indicative content by determination of the position value by the central controller. Thus, it is possible to control the device by a simple remote controller.”)
second storage means for storing programming instructions that, when read by the processing unit, causes the processing unit to adjust at least one attribute of the live video based on an input received via the control panel.	The ‘124 Patent discloses this limitation. See, e.g., Fig. 2; col. 7, l. 65 - col. 8, l. 8 (“Graphics computer 806 generates all real-time graphics (graphics layer 204) for image 122. Graphics computer 806 also texture maps the decompressed video elements from playback computer 802 and controls playback of video from laser disk player 810. Graphics computer 806 communicates with playback computer 802 via ethernet bus 305. Graphics computer 806 also receives input from a blue screen camera 1004 (see Fig. 10), a video telephone (not shown). Body motion capture system 602 and tracking electronics 612. Graphics computer 806 controls laser disk player 810 via a serial control line 809 (e.g., an RS-232).”) This limitation is disclosed by the ‘479 Patent. See e.g., Fig. 16 (disclosing volume adjust icon and mute icon); col. 41, ll. 23-31 (“As indicated in the right hand portion of FIG. 16 (where menu selection elements are display as overlain onto a video stream image), the menu display may mimic functional controls provided as remote control functions in prior television receivers or video cassette recorder/players. Selection of the remote control functions enables use of the embodied icons such as the iconic representations of “channel up” or “channel down” found in remote control functionality for navigation among programming choices.”)

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	This limitation is disclosed by the '386 Patent. <i>See, e.g.,</i> Fig. 6; col. 6, ll. 7-31 ("FIG. 6 illustrates an example of menu and point displayed on a display device (e.g., CRT, television screen, computer monitor, LCD or other display device) using an OSD circuit according to the present invention. According to the complicated functional capabilities and high-quality of the controlled device, such as a multi-screen television or television incorporating or coupled to video playback or receiver devices (VCRs, satellites, etc.) or having special audio functions, it is difficult to control the device, which necessitates many remote control keys, and it also is difficult to manipulate the device. An OSD circuit according to the present invention simplifies remote controller 61 such as a mouse for a personal computer or other remote control device, as illustrated in FIG. 6. That is to say, main channel CH0 and several sub-channels CH1, CH2 and CH3 may be displayed on screen 62 as illustrated, in a general OSD circuit, if remote controller 61 is operated to display menu 64. Pointer 65 is moved to select a menu for channel selection, UP (66) or DOWN (67), a button for volume increase (68) or volume decrease (69), or next menu, thereby knowing the selected indicative content by determination of the position value by the central controller. Thus, it is possible to control the device by a simple remote controller.") The '304 Patent discloses this limitation. <i>See, e.g.,</i> col. 3, ll 17-22 ("In controlling the operation of the television receiver 10, the microprocessor 12 interprets and processes the user commands entered from the RCU 16, and issues commands to the components of the television receiver 10; e.g., tuning, volume, channel selection, etc., in general, and specifically in controlling the functions according to the invention.")
<u>Claim 22</u>	
The digital storage device of claim 21 further comprises	See claim 21.
means for storing	The '124 Patent discloses this limitation.

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programming instructions that, when read by the processing unit, causes the processing unit to adjust the at least one attribute by adjusting at least one of: volume, mute, pause, rewind, and fast-forward.	See, e.g., Fig. 2; col. 7, l. 65 - col. 8, l. 8 (“Graphics computer 806 generates all real-time graphics (graphics layer 204) for image 122. Graphics computer 806 also texture maps the decompressed video elements from playback computer 802 and controls playback of video from laser disk player 810. Graphics computer 806 communicates with playback computer 802 via ethernet bus 305. Graphics computer 806 also receives input from a blue screen camera 1004 (see Fig. 10), a video telephone (not shown). Body motion capture system 602 and tracking electronics 612. Graphics computer 806 controls laser disk player 810 via a serial control line 809 (e.g., an RS-232).”) To the extent the ‘124 Patent does not inherently disclose a pause icon, a rewind icon, or a fast-forward icon, these features are disclosed by reference to the laser disk player, which are known to one of ordinary skill in the art to possess these features. See, e.g., User’s Manual for Pioneer CLD V2600 and CLD V2400 Laser Disk Player. This limitation is disclosed by the ‘479 Patent. See e.g., Fig. 16 (disclosing volume adjust icon and mute icon); col. 41, ll. 23-31 (“As indicated in the right hand portion of FIG. 16 (where menu selection elements are display as overlain onto a video stream image), the menu display may mimic functional controls provided as remote control functions in prior television receivers or video cassette recorder/players. Selection of the remote control functions enables use of the embodied icons such as the iconic representations of “channel up” or “channel down” found in remote control functionality for navigation among programming choices.”) This limitation is disclosed by the ‘386 Patent. See, e.g., Fig. 6; col. 6, ll. 7-31 (“FIG. 6 illustrates an example of menu and point displayed on a display device (e.g., CRT, television screen, computer monitor, LCD or other display device) using an OSD circuit according to the present invention. According to the complicated functional capabilities and high-quality of the controlled device, such as a multi-screen television or television incorporating or coupled to video playback or receiver devices (VCRs, satellites, etc.) or having special audio functions, it is difficult to control the device, which necessitates many remote control keys, and it also is difficult to manipulate the device. An OSD circuit

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	according to the present invention simplifies remote controller 61 such as a mouse for a personal computer or other remote control device, as illustrated in FIG. 6. That is to say, main channel CH0 and several sub-channels CH1, CH2 and CH3 may be displayed on screen 62 as illustrated, in a general OSD circuit, if remote controller 61 is operated to display menu 64. Pointer 65 is moved to select a menu for channel selection, UP (66) or DOWN (67), a button for volume increase (68) or volume decrease (69), or next menu, thereby knowing the selected indicative content by determination of the position value by the central controller. Thus, it is possible to control the device by a simple remote controller.”) The ‘304 Patent discloses this limitation. <i>See, e.g., col. 3, ll 17-22 (“In controlling the operation of the television receiver 10, the microprocessor 12 interprets and processes the user commands entered from the RCU 16, and issues commands to the components of the television receiver 10; e.g., tuning, volume, channel selection, etc., in general, and specifically in controlling the functions according to the invention.”)</i>
<u>Claim 23</u>	
The digital storage device of claim 21 further comprises	See claim 21.
means for storing programming instructions that, when read by the processing unit, causes the processing unit to adjust the at least one attribute by adjusting at least one of: volume, mute,	The ‘124 Patent discloses this limitation: <i>See, e.g. Fig. 8; col. 12, ll. 1-7 (“To produce playback server 1302, the Dmplay demonstration program was modified using shared memory variables to include multi-speed playback and the ability to accept multi-casted commands from playback software 1104. Playback server 1102 runs on video playback computer 802.”); col. 3, ll. 4-7 (“Then, as the performer walks in front of a blue screen/camera set up, she may appear to walk in to the scene being displayed on the screen. She may also interact with the audio portion of the system.”); <i>see also</i>, e.g., col. 4, ll. 46-54.</i>

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channel up, and channel down.

To the extent the limitation requiring at least one of a volume adjust icon, a mute icon, a channel up icon, a channel down icon, a numerical channel display, or an alpha-numeric channel display is not inherently disclosed in the '124 Patent, the '124 patent renders this limitation obvious, either alone or in light of the '785, the '479 and/or the '386 Patents.

The '785 Patent discloses this limitation.

See, e.g., col. 44, ll. 56 ("a video processor operatively coupled to said CPU"); col. 43, l. 62 - col. 44, . 7 ("The display controller may also modify displayed visual images by displaying the video stream image as a minor portion of the available field. Access to such a display is illustrated by the sequence of FIGS. 16 through 18. As indicated in the right hand portion of FIG. 16 (where menu selection elements are display [sic] as overlain onto a video stream image), the menu display may mimic functional controls provided as remote control functions in prior television receivers or video cassette recorder/players. Selection of the remote control functions enables use of the embodied icons such as the iconic representations of "channel up" or "channel down" found in remote control functionality for navigation among programming choices.")

This limitation is disclosed by the '479 Patent.

See, e.g., '479 Patent at col. 41, ll. 27-31 ("Selection of the remote control functions enables use of the embodied icons such as the iconic representations of 'channel up' or 'channel down' found in remote control functionality for navigation among programming choices.")

This limitation is disclosed by the '386 Patent.

See, e.g., Fig. 6, col. 6, ll. 7-31 ("FIG. 6 illustrates an example of menu and point displayed on a display device (e.g., CRT, television screen, computer monitor, LCD or other display device) using an OSD circuit according to the present invention. According to the complicated functional capabilities and high-quality of the controlled device, such as a multi-screen television or television incorporating or coupled to video playback or receiver devices (VCRs, satellites, etc.) or having special audio functions, it is difficult to control the device, which necessitates many remote control keys, and it also is difficult to manipulate the device. An OSD circuit according to the present invention simplifies remote controller 61 such as a mouse for a personal computer or

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	other remote control device, as illustrated in FIG. 6. That is to say, main channel CH0 and several sub-channels CH1, CH2 and CH3 may be displayed on screen 62 as illustrated, in a general OSD circuit, if remote controller 61 is operated to display menu 64. Pointer 65 is moved to select a menu for channel selection, UP (66) or DOWN (67), a button for volume increase (68) or volume decrease (69), or next menu, thereby knowing the selected indicative content by determination of the position value by the central controller. Thus, it is possible to control the device by a simple remote controller.”)
<u>Claim 24</u>	
The digital storage device of claim 21 further comprises	See claim 21.
means for storing programming instructions that, when read by the processing unit, causes the processing unit to remove the control panel when another displayed element is selected.	The ‘124 Patent discloses this limitation. <i>See, e.g.</i> col. 1, ll. 62-66 (“Second, the performer may use a pointer to high-light items in the images on the screen. The pointer acts like a virtual flashlight. The pointer may also be used to make selections from a menu displayed on the screen by, for example, pressing a button on the pointer.”); col. 4, ll. 38-45 (“Furthermore, given the ability to point, the performer may interact with the images on the display screen much like a computer user interacts with a menu in a point-and-shoot type computer application. To accomplish this, pointer 118 provides a pointer signal 130 to media production system 104. This allows the user to have further control over the production of media images by media production system 104.”) To the extent this limitation is not literally disclosed by the ‘124 Patent, it is rendered obvious by that patent, either alone or in combination with the ‘628, ‘785 and/or ‘304 Patents. The ‘628 Patent discloses this limitation. <i>See, e.g.</i>, col. 4, ll 44-57 (“If it is not in playback mode, it selects the blue screen as a main screen (707). If the tuner system is tuner 2, it will determine whether the present mode is playback mode or not (step 708). If it is in playback mode, it selects the playback screen as the main screen (step 706). If it is not in playback mode, it

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	will determine whether it is a main screen or a sub-screen (step 710).”). [¶] If it is a main screen, it will check the existence of a synchronous signal (step 711). If no synchronous signal is detected, it selects the blue screen as the main screen (step 712). If the signal is a sub-screen (step 710), it reverses the mode of main/sub again (step 713) and selects a main screen according to the kind of input: tuner 1, tuner 2 or LINE (step 714).” The ‘785 Patent discloses this limitation. <i>See, e.g.</i> Fig. 15. The ‘304 Patent discloses this limitation. <i>See, e.g.</i> Fig. 3, Fig. 5 & col. 5, ll. 9-30 (“To label a channel, starting from the menu list 46 of Fig. 3, the banner 47 is scanned to CH. LABELS by depressing the down arrow key 24c. The left or right arrow key 24b, 24d is then depressed. The menu depicted in FIG. 5 is called up from the memory module 13 as per above, and a list of labels 70 from which to make a selection is shown. The tuner 21 is also routed to the P-I-P circuitry and the main screen is blanked as per above. If a channel, denominated X, is a CBS channel and is to be so labeled, the television tuner 21 is set to channel X, as indicated, and the active television picture of channel X appears in the P-I-P window 60. The user scans the labels menu 70 to highlight CBS, indicated schematically by the underscore, using the arrow keys 24a-24d of the RCU 16. The channel label may be automatically established when the operator moves to the next channel number for additional channel labeling by depressing the menu key, or waiting ten seconds. Thereafter, whenever channel X appears in the channel indicator overlay 48 or during a regular television display, it will read “CH X CBS”. The menu screen 32 is restored when depressing the menu key 22, or waiting the time-out of ten seconds, after which the main screen display will appear.”) The ‘479 Patent discloses this limitation: <i>See, e.g.</i>, col. 38, ll. 40-44 (“This is a simple example of the user interface; a typical situation is much more complex. For instance, some menu cards only present information, and do not allow any action except exiting to the previous level after viewing the information.”) To the extent this limitation is not inherently disclosed by the ‘479 patent, it is rendered obvious by that patent,
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