United States District Court,
E.D. Texas, Texarkana Division.

LG ELECTRONICS, INC,
Plaintiff.
v.
HITACHI, LTD., et al,
Defendants.

Civil Action No. 5:07-CV-90 (DF)

Dec. 8, 2008.

Background: Holder of patents relating to digital display systems brought action against competitor, alleging infringement.

Holding: The District Court, Folsom, J., held that terms relating to patented method for displaying selectable keys in optical disc reproducing system would be construed.

So ordered.

6,404,418. Construed.

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CLAIM CONSTRUCTION ORDER (1 OF 4) REGARDING U.S. PATENT NO. 6,404,418

DAVID FOLSOM**, District Judge.**

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I. Introduction

LG Electronics, Inc. ("LG") alleges, *inter alia,* that Hitachi Automotive Products (USA), Inc., Hitachi, Ltd., Clarion Co., Ltd, Clarion Corp. of America, and Xanavi Informatics Corporation (collectively, "Hitachi") have infringed claims of the following patents:

1. U.S. Patent No. 6,404,418 entitled "Method For Displaying Selectable Keys In An Optical Disc Reproducing System and An Apparatus Thereof" ("the ' 418 Patent");

2. U.S. Patent No. 7,158,456 entitled "Optical Disc Player and Method For Reproducing Thereof" ("the '456 Patent");

3. U.S. Patent No. 6,721,709 entitled "Digital Data Player, and Data Processing Method and Data Storage Medium for the Same" ("the '709 Patent"); and

4. U.S. Patent No. 5,790,096 entitled "Automated Flat Panel Display Control System for Accommodating Broad Range of Video Types and Formats" ("the '096 Patent").

On March 18, 2008, the parties filed their Joint Claim Construction Chart Pursuant to LPR 4.2 (Dkt. No. 42). FN1 On May 9, 2008, LG filed Opening Claim Construction Brief of LG Electronics' Inc., (Dkt. No. 47). On May 30, 2008, Hitachi filed Defendants' Opening Claim Construction Brief, (Dkt. Nos.48-52). On June 14, LG filed a Reply Claim-Construction Brief (Dkt. No. 55). On June 27, Hitachi filed a Sur-Reply Claim Construction Brief (Dkt. No. 61). On July 7, 2008, the parties filed a Joint Patent Rule 4-5(D) Claim Chart, (Dkt. No. 64). The Court held a technology tutorial on July 16, 2008. *See* Dkt. No. 72. The Court held a claim-construction hearing on July 17, 2008. *See* Dkt. No. 73. After the *Markman* hearing, LG submitted a Supplemental Claim-Construction Brief (Dkt. No. 74) and Hitachi submitted a Responsive Claim-Construction Brief (Dkt. No. 77). Hitachi also submitted file wrappers for the patents-at-issue on July 18, 2008 (Dkt.Nos.68-70).

FN1. All pinpoint citations in the claim-construction orders to the parties' briefing refers to the page numbers supplied by the parties, as opposed to the Court's docket header pagination.

For purposes of clarity, each patent asserted by LG is addressed in a separate order. This order will construe the disputed terms of the '418 Patent as well as provide the requisite background and legal principles. The disputed terms of the other patents will be construed in subsequent orders. After reviewing the briefing, presentation materials, and argument of counsel, the Court will construe the disputed claim terms as noted herein.

II. Claim Construction Principles

A determination of patent infringement involves two steps. First, the patent claims are construed; second, the claims are compared to the allegedly infringing device. Cybor Corp. v. FAS Techs., Inc., 138 F.3d 1448, 1455 (Fed.Cir.1998) (en banc). The legal principles of claim construction were extensively reexamined by the Federal Circuit in Phillips v. AWH Corp., 415 F.3d 1303 (Fed.Cir.2005) (en banc). The Federal Circuit in *Phillips* expressly reaffirmed the principles of claim construction set forth in Markman v. Westview Instruments, Inc., 52 F.3d 967 (Fed.Cir.1995) (en banc), *aff'd,* 517 U.S. 370, 116 S.Ct. 1384, 134 L.Ed.2d 577 (1996), Vitronics Corp. v. Conceptronic, Inc., 90 F.3d 1576 (Fed.Cir.1996), and Innova/Pure Water, Inc. v. Safari Water Filtration Systems, Inc., 381 F.3d 1111 (Fed.Cir.2004). These decisions continue to guide claim construction, which is a legal question for the courts. Markman, 52 F.3d at 979.

The Court, in accordance with the doctrines of claim construction which it has outlined in the past, construes the claims of the LG patents below. *See Pioneer v. Samsung,* No. 2:07-CV-170, Dkt. No. 94, at 2-8 (E.D.Tex. Mar. 10, 2008) (claim construction order).

III. U.S. Patent No. 6,404,418

The '418 Patent entitled, "Method for Displaying Selectable Keys in an Optical Disc Reproducing System and an Apparatus Thereof," issued on June 11, 2002, to Geon-Hoa Leem, from Application No. 08/997,850, filed on December 24, 1997. The '418 Patent claims priority to a Korean patent application filed September 24, 1997. On its face, the '418 Patent is assigned to LG Electronics, Inc.

A. Overview

The '418 Patent "relates to a method and apparatus for allowing a user to visually recognize selectable keys in a disc reproducing apparatus capable of performing interactive playback control, and more particularly to a method apparatus for generating a display based on the existence of offset values corresponding to keys of a key input unit during playback control in a disc reproducing apparatus capable of performing interactive playback control." ' 418 Patent, col. 1, lines 7-14. According to the abstract:

A method and apparatus that uses offset information stored with respect to selectable keys to identify the selectable keys that are enabled during respective states of a playback operation. Once identified, the enabled selectable keys may be distinguished from non-enabled selectable keys visually, or otherwise. The enabled selectable keys may be identified and/or distinguished in at least three circumstances: (1) when a predetermined portion of a playback operation has been reached, (2) when a user input representing a non-enabled selectable key is received, and (3) when a user input representing an information acquisition key for requesting identification of enabled selectable keys is received.

1. Background

The '418 Patent explains by way of background that "when a user listens to a piece of music on a compact disc (CD), all keys relating to the CD (e.g., music selecting keys such as " and ", a play key and a key for program memory if necessary) are illuminated to allow the user to visibly recognize selectable keys in the current state. When a user inadvertently presses a key not included among the selectable keys, the user is informed of a selection error" by, *e.g.,* a "red hand indication" that may appear "for a certain time period to indicate a selection error resulting from selection of the disabled key." '418 Patent, col. 1, lines 19-28.

However, the '418 Patent explains, "the user may not be apprised of the specific key giving rise to the problem until after they have tried the key several times via trial and error," and "the error message provide[s] no guidance as to keys which represent available functions and operations during playback control ." According to the '418 Patent, "[t]his may lead to user frustration," *e.g.,* "depending on the current operating state, the key selected by the user may change between an enabled or disabled state, leading a user to misinterpret the error message as an operational fault of the product." '418 Patent, col. 1, lines 44-53. The '418 Patent notes that "like the keys located on the front of a disc drive, keys on the remote controller have [also] not been visually distinguished to identify enabled selectable keys for given states." '418 Patent, col. 1, lines 57-60.

Figure 1 is said to depict a prior art "optical disc reproducing system:"

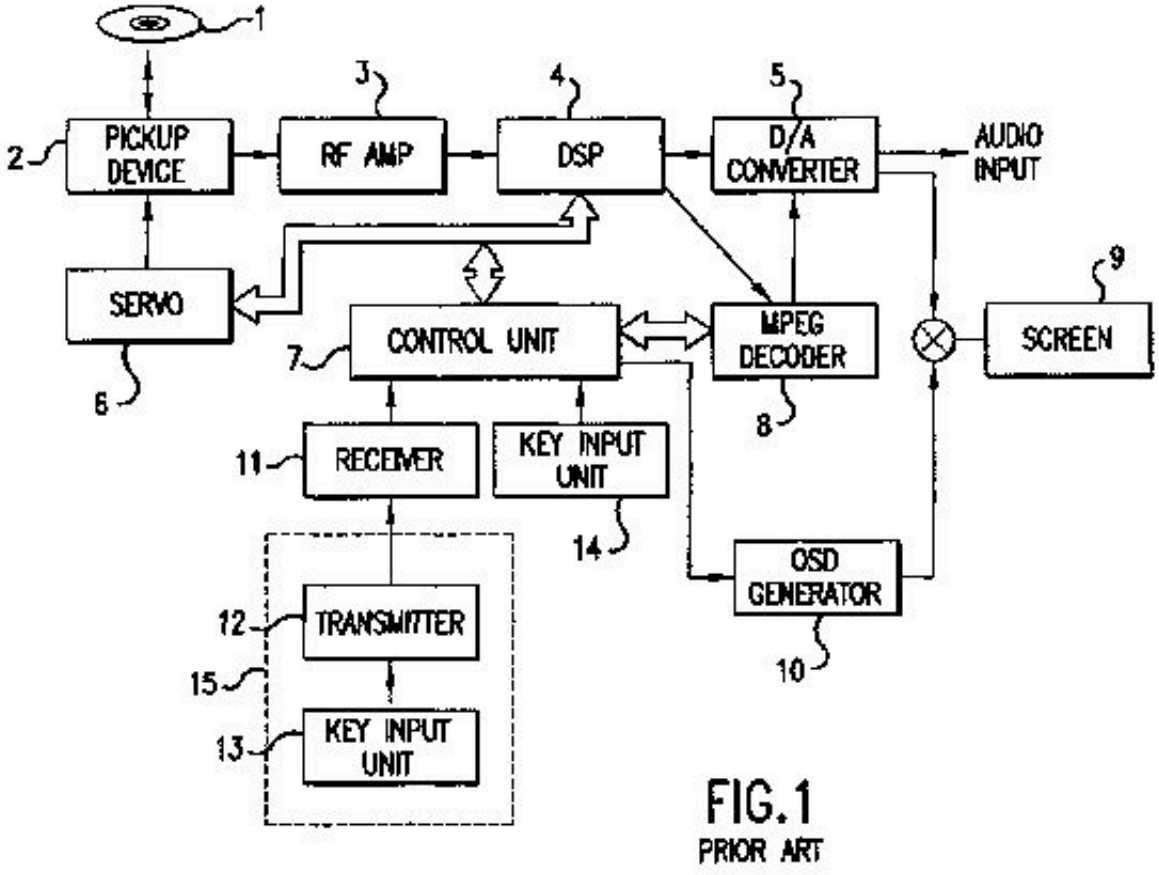

FIG.1
PRIOR ART

This system includes an "optical disc 1" that "stores compressed digital signals representing information such as motion pictures and sound data," a player that "includes a pickup device 2, an RF amplifier 3, a digital signal processor (DSP) 4, a digital-to-analog (D/A) converter 5, a servo 6, a control unit 7, an MPEG decoder 8, an OSD generator 10, a screen 9, a key input unit 14 for selecting the menu and a receiver 11 for performing the radio communication with remote controller 15. Remote controller 15 includes a key input unit 13 and a transmitter 12 for transmitting key input signals of remote-controller key input unit 13 to player receiver 11." '418 Patent, col. 6, lines 25-36. The '418 Patent explains that "control unit 7 reads out the information required for diverse controls, such as play list information, select list information, tract information, system control information and information required for the on-screen displays from DSP 4 and MPEG decoder 8. Control unit 7 stores this information in the memory, and generates a control command to OSD generator 10 for generating a required caption signal in accordance with the playing state of the player. OSD generator 10 then generates an alphanumeric signal in accordance with the control command received from control unit 7. The alpha numeric signal is mixed with the image signal supplied from MPEG decoder 8 to form the resultant signal used to generate a display on screen 9." '418 Patent, col. 7, lines 2-15.

The '418 Patent also explains that "[i]f a component system includes a VCD or DVD system capable of performing interactive playback, the VCD- or DVD-related keys are illuminated in accordance with the functional shift to the VCD or DVD. The component system controls the illumination of the selectable keys based on the group of keys including the pressed key, without referencing information such as offset information of respective keys recorded on a disc. General VCD or DVD systems can also perform interactive playback control based on selectable keys that correspond to respective states." '418 Patent, col.

1, lines 29-38. "For example, if the 'previous menu' key is an enabled selectable key in the current state, the 'previous menu' key has the address offset value of a predetermined data area corresponding to the previous picture which precedes the current state. However, if data on the disc is recorded to inhibit a jump from the current picture to the previous picture, the 'previous' menu key under the current state is disabled, having no address offset value." '418 Patent, col. 4, lines 50-58.

Figure 2 is said to show "a data format of a VCD disc." '418 Patent, col. 3, line 52.

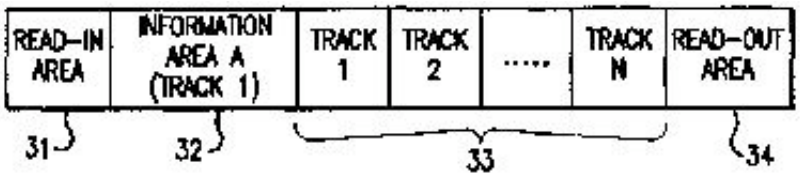

FIG.2
PRIOR ART

According to the '418 Patent, "when the reproducing system is a VCD play system * * * files such as info.vcd, entry.vcd, lot.vcd and psd.vcd are stored together in information area 32. The psd.vcd is stored with a selection list and play list." '418 Patent, col. 4, lines 63-66. Additionally, "[t]he data written in information area 32(VCD) and the data written in the corresponding information area separately recorded on respective data areas (DVD)" are referred to as "system control data or system control information." '418 Patent, col. 5, lines 17-21.

Figures 3A and 3B are said to illustrate "a play list of a DVD disc." ' 418 Patent, col. 3, line 53.

NAME OF FIELD	SIZE (BYTES)	VALUE
LIST HEADER	1	0x10
NUMBER OF ITEM (NOI)	1	
LIST ID	2	
PREVIOUS LIST OFFSET	2	
NEXT LIST OFFSET	2	
RETURN LIST OFFSET	2	
PLAYING TIME	2	
PLAY ITEM WAIT TIME	1	
AUTO PAUSE WAIT TIME	1	
PLAY ITEM #1 OFFSET	2	
:	:	
PLAY ITEM #NOI OFFSET	2	

FIG.3A
PRIOR ART

SELECTABLE KEY	ENABLE FLAG	OFFSET ADDRESS
FF	1	F100
REW	1	F200
NEXT	0	
PREV	0	
RETURN	0	
PAUSE	1	F300
PLAY	1	F400

FIG.3B
PRIOR ART

According to the '418 Patent, "the playlist is recorded with offset values representing offset information in respective states. Alternatively, the play list may be recorded with enable flags representing the offset information. That is, the offset information for respective keys under each state for the entire disc are recorded on predetermined information area 32. Based on this offset information, the currently-enabled selectable keys can be recognized under each respective state." '418 Patent, col. 4, line 67-col. 5, lines 1-8.

2. Disclosure

The '418 Patent thus describes a "disc reproducing apparatus capable of performing interactive playback control, wherein enable selectable keys of a key input unit are discriminated from non-enabled selectable keys, leading a user to visually recognize enabled selectable keys under respective states during predetermined portions of the play operation." '418 Patent, col. 1, lines 64-67-col. 2, lines 1-3. The '418 Patent also describes discriminating "among enabled and disabled selectable keys of a key input unit on a remote controller." '418 Patent, col. 2, lines 34-35.

Figure 4 is said to illustrate "a block diagram showing an optical disc reproducing system according to the present invention." '418 Patent, col. 3, lines 54-55.

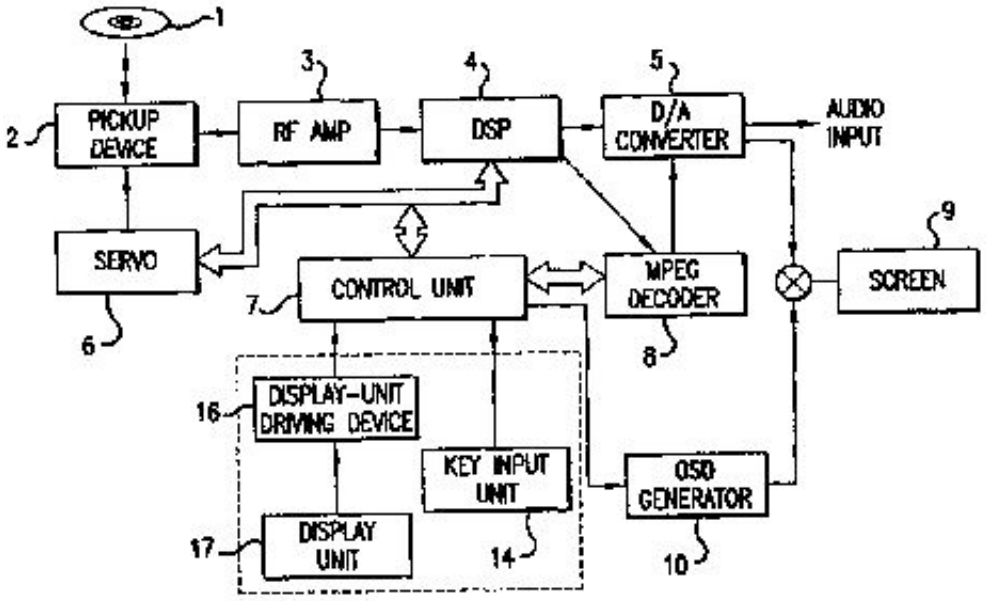

FIG.4

The '418 Patent explains that unlike Figure 1, "the player of Fig. 4 includes a display-unit driving device 16 and a display unit 17." '418 Patent, col. 7, lines 23-24. The display-unit driving device 16 controls the display unit 17 via control unit 7. *See* '418 Patent, col. 7, lines 49-51.

In the embodiment of Figure 4, control unit 7 "determines whether the user selected key [is] enabled based on the signal and the existence of a corresponding offset value stored in the predetermined information area of the memory (not shown). If the user selected key is enabled, a control signal is provided to servo 6 in accordance with the selectable key. Servo 6 controls pickup device 2 by moving the pickup device 2 to the sector of the corresponding key value, the-reby reading out data. If the user selected key is disabled, all enabled selectable keys under the currently-current state are searched. Then, enable/disable interrupt information is provided to display-unit driving device 16 with respect to all key input units." '418 Patent, col. 7, lines 37-48. The display unit 17 may display the enable/disable information on "any type of display device, such as an array of LEDs or a single liquid crystal display panel." '418 Patent, col. 7, lines 52-54.

The '418 Patent discloses "a block diagram showing the optical disc reproducing system additionally equipped with a remote controller according to the present invention," in Figure 5:

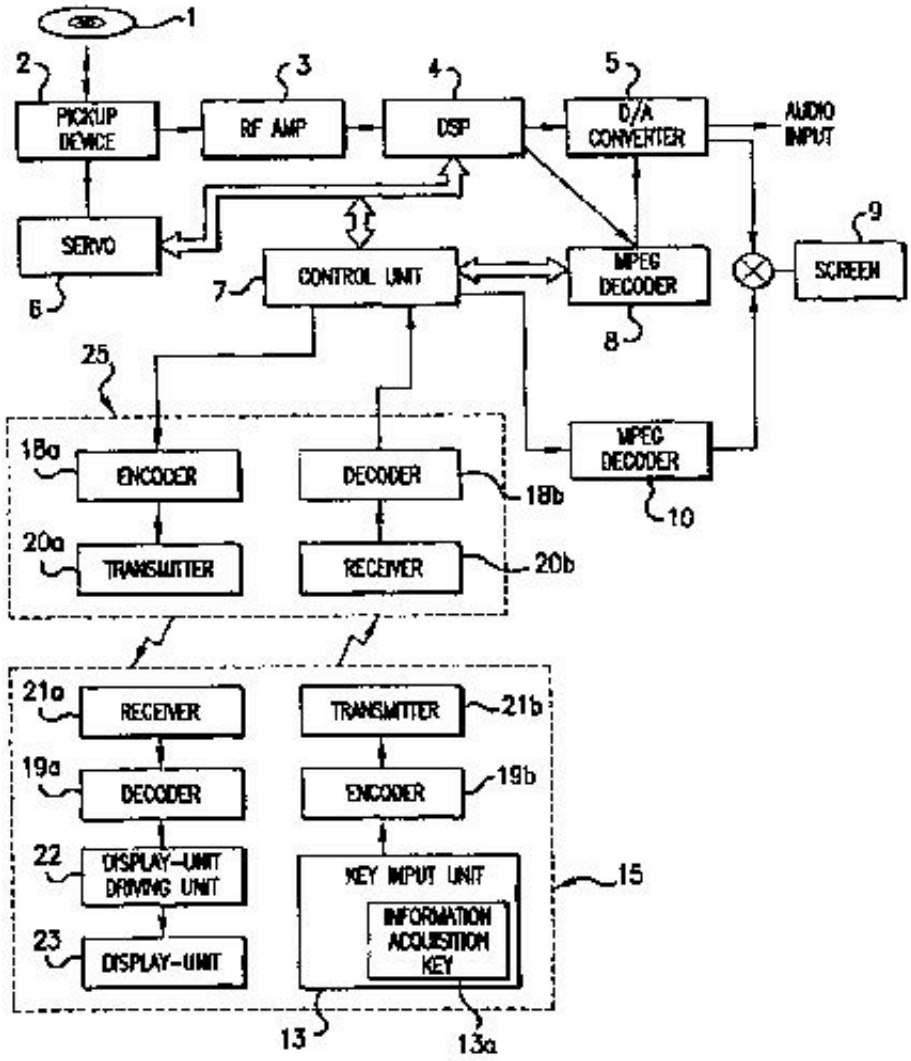

FIG.5

and explains that "only remote controller 15 is equipped with a display-unit driving device 22 and a display unit 23." '418 Patent, col. 7, line 56-col. 8, line 8. In the embodiment of Figure 5, the "[k]ey input unit 13 of remote controller 15, which allows a user to select the menu, is connected to encoder 19b. Key input unit 13 provides a user selected key value to encoder 19b which encodes the input signal and provides that signal to transmitter 21b. Transmitter 21b sends the signal to receiver 20b of the player. The received signal is supplied from receiver 20b to decoder 18b where it is decoded. The decoded signal is supplied from decoder 18b into control unit 7. Control unit 7 reads out the offset information stored in the memory and compares that offset information with the decoded signal received from decoder 18b. Based on this comparison, control unit 7 determines whether the decoded signal corresponds to an enabled selectable key or not." '418 Patent, col. 8, lines 11-23.

According to the '418 Patent, if "the control unit 7 determines that the decoded signal corresponds to an enabled selectable key," it "provides a control signal to execute the corresponding input selectable key." '418 Patent, col. 8, lines 26-27. Otherwise, if the control unit 7 "determines that the decoded signal does not represent an enabled selectable key or that the decoded signal represents a disabled selectable key," it

searches "for the enabled selectable keys based on the offset information stored in of the memory, and provides an appropriate control signal to display-unit driving device 22 based on the enabled selectable keys. Display-unit driving device 22 then controls display unit 23 to display all enabled selectable keys under the current state in accordance with the control signal supplied thereto." '418 Patent, col. 8, lines 34-43.

Figure 6 is a flowchart said to illustrate "a method for identifying enabled selectable keys during the play operation in the optical disc reproducing system according to the present invention." '418 Patent, col. 3, lines 59-62.

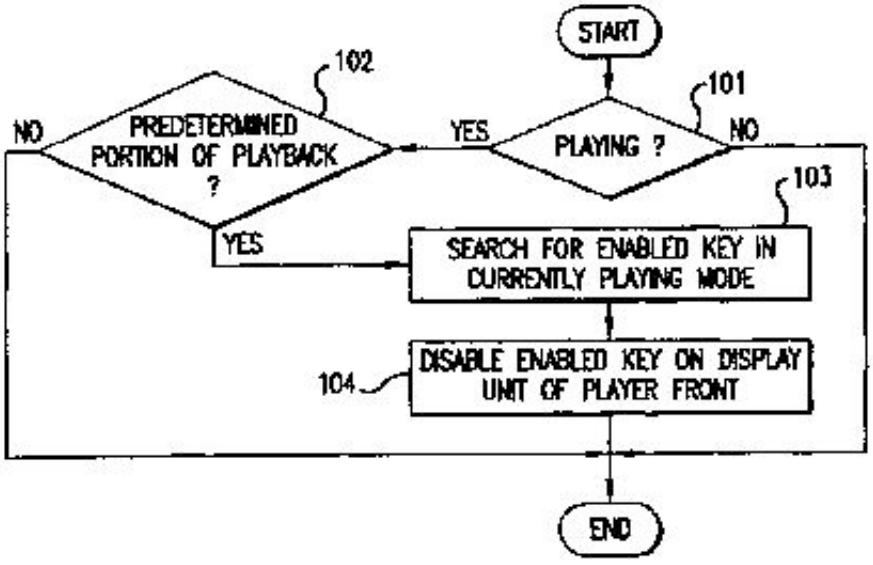

FIG.6

According to the '418 Patent, "[i]n step 103, control unit 7 reads out the offset information stored in its memory, searches to determine which selectable keys are enabled in the currently-played mode, and provides the control signal to display-unit driving device 16 based on that determination. In step 104, the enabled selectable keys are displayed or otherwise distinguished." '418 Patent, col. 9, lines 22-28.

The '418 Patent discloses a number of other processes for "identifying enabled selectable keys," but the foregoing is believed to provide sufficient overview of the disclosure. Other processes are discussed below as may be necessary or helpful to resolve the parties' dispute.

Finally, the '418 Patent discloses "various techniques for visually distinguishing enabled selectable keys from non-enabled selectable keys" in Figs. 13A-13C:

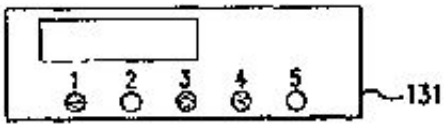

FIG.13A

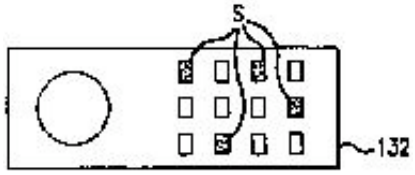

FIG.13B

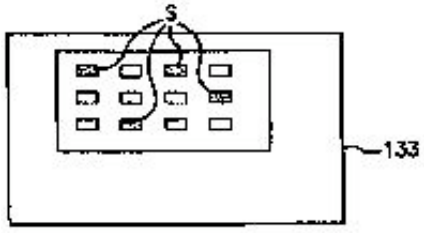

FIG.13C

'418 Patent, col. 4, lines 15-17. Figs. 13A-13C are said to describe "three methods for visually discriminating between enabled and non-enabled selectable keys * * * shaded keys correspond to enabled selectable keys." ' 418 Patent, col. 12, lines 47-50. According to the specification, in Figure 13A, "enabled controls 1, 3 and 4 are visually distinguished from non-enabled controls 2 and 5 on a front panel of player 131. In FIG. 13B, enabled selectable controls S are visually distinguished from non-enabled selectable controls on a control panel of remote controller 132. In Fig. 13C, enabled selectable controls S are visually distinguished from non-enabled selectable controls on a display screen such as an on-screen display (OSD). Display 133 can be located on player 131, remote controller 132, or some other display device." '418 Patent, col. 12, lines 47-59.

3. The Asserted Claims

LG asserts claims 5, 6 and 9:

5. An apparatus for identifying at least one enabled selectable key, comprising: an interface unit to receive an input;

a control unit to determine if an input corresponds to a request for identification of said at least one enabled selectable key and to identify said at least one enabled selectable key in response to said request for identification; and

a selection display unit to visually discriminate said at least one enabled key from a non-enabled selectable key under control of said control unit, which controls said selection display unit based on said identification and in response to said request for identification.

6. The apparatus of claim 5, wherein, in performing said identification, said controller reads an offset information from a disc and identifies said at least one enabled selectable key based on said offset information.

9. A method to identify at least one enabled selectable key, comprising:

determining if an input corresponds to a request for identification of said at least one enabled selectable key;

identifying said at least one enabled selectable key in response to said request for identification of said at least one enabled selectable key; and

visually discriminating said at least one enabled key from a non-enabled selectable key based on said identification and in response to said request for identification.

'418 Patent, col. 13, line 40-col. 14, line 6, col. 14, lines 11-21.

B. Claim Construction

1. Agreed Terms

The parties agree on constructions for the following terms:

Claim Term	***Agreed Construction***
"selectable"	Capable of being pressed by a user.
"enabled selectable key"	An activated key that, when pressed by a user, causes the action represented by the key.
"non-enabled selectable key"	A deactivated key that, when pressed by a user, does not cause the action represented by the key.

See Dkt. No. 42, at 3-4; Dkt. No. 64, 3-4.

2. Disputed Terms

a) "key"

This term appears in claims 5, 6 and 9. Claim 5 is representative (the disputed term is in boldface):

5. An apparatus for identifying at least one enabled selectable **key,** comprising:

an interface unit to receive an input;

a control unit to determine if an input corresponds to a request for identification of said at least one enabled selectable **key** and to identify said at least one enabled selectable **key** in response to said request for identification; and

a selection display unit to visually discriminate said at least one enabled **key** from a non-enabled selectable **key** under control of said control unit, which controls said selection display unit based on said identification and in response to said request for identification.

'418 Patent, col. 13, line 40-col. 14, line 2 (emphasis added).

(1) The Parties' Positions

The parties propose the following constructions:

LG	***Hitachi***
A physical, hard button or marked physical area on a screen that represents a user action.	A physical hard button.

See Dkt. No. 64, at 1.

According to LG, the term "key" "is a straightforward term of common usage and should be construed according to its ordinary meaning as understood in the context of the '418 patent." Dkt. No. 47, at 6. LG urges that this term "is not limited to a 'hard button' and no other language in the claims remotely suggests such a restriction on the meaning." *Id*. LG points to, *inter alia,* column 3, lines 33-36 ("key(s) may be visually identified using illumination of those keys or other display techniques such as on-screen displaying (OSD)") and column 8, lines 58-61 ("[a] separate memory may be further provided for selectively displaying only the enabled selectable keys when displaying the entire key arrangement on the screen according to the present invention"). *Id*. LG also points to Figure 13C and argues that "[t]he specification clearly applies to 'soft' keys on the display." *Id* . at 7. Finally, LG relies on a dictionary definition of "key" as " 'a button *or marked* area that causes a discrete signal or action when pressed with a finger.' " *Id*. at 7.

Hitachi responds that "the only 'keys' described and enabled in the specification of the '418 Patent are physical, hard buttons or knobs" and that the term "key" "cannot be impermissibly broadened to cover any 'marked' area of a screen." Dkt. No. 48, at 24. Hitachi cites, *inter alia,* column 5, lines 36-40 ("the key input unit includes a knob or button key attached to the front of a player") and column 5, lines 63-67 ("the key input unit includes a knob or button key attached to a remote controller"), as well as a dictionary definition of "key," namely, "a hand-operated switching device ordinarily comprising concealed spring contacts with an exposed handle or pushbutton, capable of closing or opening one or more parts of a circuit." *Id*. at 25.

Hitachi urges that LG "confuses the concept of 'touch screens' or 'soft' buttons, which are ***not*** disclosed in the '418 Patent, with the concept of OSDs, which ***are*** disclosed, but which are simply graphics on a screen" that are "not selectable, nor enabled, nor non-enabled." Dkt. No. 48, at 25. "They are just graphics." *Id*. "User selections are still made by pressing keys on the remote control or the front of the DVD or CD player." *Id*. Hitachi contends that none of the portions of the specification cited by LG describe on-screen graphics as "keys." Indeed, Hitachi urges, "Figures 4 and 5 explicitly distinguish the Keys from the Screens." *Id*. at 26.

LG replies that "the two references to 'keyboards' in the '418 patent specification are references to soft keyboards with selectable keys provided on an LCD display screen-i.e., soft keys." Dkt. No. 55, at 3. According to LG, (1) "the parties agree (at least in part) that the term 'selectable key' means that the key is 'capable of being pressed by a user;' " therefore "when the '418 patent discloses 'selectable keys' on a display

screen, such keys should be understood to mean keys on the display screen that are capable of being pressed by a user-namely, ***soft keys*** on an LCD display," (2) "Defendants' proposed constructions should also be rejected because, contrary to Defendants' arguments, the specification does disclose soft keys and touch screens"-"the 'keyboard' in Figure 13C is [not] merely a simple graphical representation of the keys on the front of a CD/DVD player or on a remote control collapse" "because (a) the front of a CD/DVD player and remote control do not contain keys on a keyboard; thus, the keyboard of Figure 13C cannot be merely a graphical representation of such non-existing keys; and (b) it again ignores the 'selectable' aspect of the keys as required by the language of the claims as discussed above"-and "[b]oth Figures 4 and 5 include a dashed-line box enclosing the key input unit and the display unit (*i.e.,* LCD screen), which indicates that the selectable keys and screen may be combined as part of the same unit, such as in an LCD touch screen," and (3) "the use of touch screen, liquid crystal displays was well known at the time the '418 patent was filed" as "demonstrated, at least, by the patents cited on the face of the ' 418 patent." Id. at 4-5.

Hitachi reiterates that there is "no disclosure of touch screens anywhere in the specification" and that "the plain language of the claims themselves preclude[ ] a touch screen from falling within their scope." Dkt. No. 63, at 8. Hitachi argues that LG "mischaracterizes" various passages in the specification. *Id*. at 9. In context, Hitachi contends, in column 2, lines 23-32, the phrase " 'on a screen' modifies the verb 'discriminate' not the noun phrase 'key input unit:' "

Another object of the present invention is *on a screen to discriminate* among enabled and disabled selectable keys of a key input unit leading a user to recognize the enabled selectable keys under respective states during predetermined portions of the play operation.

Still, another object of the present invention is *on a screen to discriminate* among enabled and disabled selectable respective keys of a key input unit leading a user to recognize the enabled selectable keys under respective states based on the input of an interrupt.

Id. (annotations added). According to Hitachi, "[t]he only proper way to read the sentence is that *visual discrimination* takes place on the screen in order to show which keys on the key input unit of the DVD/CD player or remote control are enabled and disabled." *Id*.

Hitachi urges the following regarding another specification passage that LG cites:

FIGS. 6-12 also demonstrate distinguishing between enabled and non-enabled selectable keys in a variety of ways including: displaying enabled keys on a display unit of a player front, displaying enabled keys on an on-screen display (OSD) of the playback unit, and displaying the enabled keys on a remote controller used to control the playback unit. Each of these processes can be employed independently or in combination.

FIGS. 13A-13C demonstrate the three methods for visually discriminating between enabled and non-enabled selectable keys mentioned above. In each figure, shaded keys correspond to enabled selectable keys. In FIG. 13A, enabled controls 1, 3 and 4 are visually distinguished from non-enabled controls 2 and 5 on a front panel of player 131. In FIG. 13B, enabled selectable controls S are visually distinguished from non-enabled selectable controls on a control panel of remote controller 132. *In FIG. 13C, enabled selectable controls S are visually on a display screen distinguished from non-enabled selectable controls* such as an on-screen display (OSD). Display 133 can be located on player 131, remote controller 132, or some other display device. When located on the display device used to perform playback operations, the background for display 133 may be the program being reproduced, a frozen image from the program being reproduced, or

some other background such as a blue screen. Other techniques may also be used to distinguish between the enabled selectable keys and the non-enabled selectable keys. For instance, keys may be distinguished auditorially or mechanically Also, as shown in FIG. 13C, display 133 may show a keyboard arrangement that visually discriminates among the enabled selectable keys and the non-enabled selectable keys.

Dkt. No. 63, at 9-10. LG's "quote truncated the relevant sentence, which concludes with the phrase *'such as an on-screen display (OSD),'* thus establishing that the display screen is not a touch screen, but is instead an on-screen display on which purely visual distinctions are made, so as to show which keys on the remote control or front of the DVD/CD player are enabled." *Id*. at 10.

According to Hitachi, "in order to fully understand Figures 13A, 13B, and 13C; Figures 6-12 must first be reviewed because the specification expressly states that Figures 13A-C are showing the three techniques described in flowchart form in Figures 6-12. Figures 6-12 all show that the actual keys are not located on the screen, but are instead located on the remote control device or on the front of the DVD/CD player, even though they may be graphically represented on the on-screen display for purposes of showing a visual distinction among them." Dkt. No. 63, at 10. Hitachi urges that "[n]one of Figures 6-12 discloses a touch screen, or any other type of user input that takes place on the OSD or screen. All user input takes place through physical buttons/keys located on the front of the DVD or CD player, or on the remote control. Figure 13C does not show a touch screen for input by a user. Figure 13C shows a screen that can be used as an OSD to visually distinguish, through the use of graphics, among the actual keys located on the remote control or the front of the DVD/CD player. Figure 13C shows an exact, graphical representation of the keys on the remote control shown in Figure 13B, including the same visual distinctions of the same arrangement of keys located on the remote control." *Id*. at 11.

Hitachi further urges that Figures 4 and 5 "show a display unit within the same dashed box as the key input unit," not a touch screen. Dkt. No. 63, at 11. Hitachi argues that Figs. 13A-B show embodiments "where the key input units are combined with a display device" such that "the keys are combined with LED lights built into the keys themselves," whereas the embodiments of Figures 4 and 5 show that "OSDs and 'screens' * * * are separate and distinct from the user key input units." *Id*. at 11-12.

Finally, Hitachi argues that "no touch screens are disclosed in the patent" and that even if touch screens were known to those skilled in the art at the time of the patent, the "enablement and written description requirement" of 35 U.S.C. s. 112 must both be satisfied, and that "the claims cannot properly be construed to literally cover subject matter that is not in the written description of the specification." Dkt. No. 63, at 12.

(2) Construction

[1] The parties appear to agree that a "key" is a "physical hard button." The parties dispute, though, whether "key" also includes a "marked physical area on a screen that represents a user action."

The claims do not use the term "key" by itself. Rather, the claims refer to an "enabled selectable key," a "selected key," an "enabled key," a "non-enabled selectable key" and variants thereof. As LG notes, and as noted above, the parties agree on constructions of the following terms:

"selectable"	Capable of being pressed by a user.
"enabled selectable key"	An activated key that, when pressed by a user, causes the action represented by the key.

"non-enabled selectable key"	A deactivated key that, when pressed by a user, does not cause the action represented by the key.

In the context of claim 5, drawn to "[a]n apparatus for identifying at least one enabled selectable key," a "selection display unit" is provided to "visually discriminate said at least one enabled key from a non-enabled selectable key." The method of claim 9 similarly calls for "visually discriminating said at least one enabled key from a non-enabled selectable key." Aside from requiring that the "keys" be visually distinguishable, the claims do not address whether a "key" may refer to a "marked physical area on a screen that represents a user action." The literal claim language neither requires nor forecloses that scenario.

The focus thus turns to the specification. As the parties note, the specification expressly describes "physical hard buttons" that are "attached to the front of a player" or "attached to a remote controller." *See* '418 Patent, col. 5, lines 35-39 ("If the key input unit includes a knob or *button key attached to the front of a player,* it is possible to visually discriminate among enabled and disabled keys of respective states based on the presence or absence of the address offset values with respect to selectable keys ."), col. 5, lines 63-67 ("If the key input unit includes a knob or *button key attached to a remote controller,* it is possible to distinguish between the enabled and disabled keys of respective states based on the presence or absence of address offset values with respect to the selective keys."), and col. 1, lines 54-60 ("The number of keys on the front of most electronic devices like disc drives has recently been reduced, those function keys and option keys being replaced by keys that are located on a remote controller.") (emphasis added).

For example, "[i]n a conventional optical disc reproducing apparatus," "when a user listens to a piece of music on a compact disc (CD), all keys relating to the CD (e.g., music selecting keys such as " and ", a play key and a key for program memory if necessary) are illuminated to allow the user to visibly recognize selectable keys in the current state." '418 Patent, col. 1, lines 17-23. Or, in a conventional "VCD or DVD system capable of performing interactive playback, the VCD- or DVD-related keys are illuminated in accordance with the functional shift to the VCD or DVD. The component system controls the illumination of the selectable keys based on the group of keys including the pressed key * * *." '418 Patent, col. 1, lines 29-34. Apparently, various key groups could be enabled based on the device's operational state, *e.g.,* one key group for VCD operations and another key group for DVD operations. *See* '418 Patent, col. 1, lines 36-38. ("General VCD or DVD systems can also perform interactive playback control based on selectable keys that correspond to respective states.").

Although illuminated and selectable, not all of those keys may have been enabled: "When a user inadvertently presses a key not included among the selectable keys, the user is informed of a selection error." '418 Patent, col. 1, lines 24-26. An "error message" thus "enable[d] the user to recognize that the selected key is disabled under the current condition," but "provide[d] no guidance as to keys which represent available functions and operations * * *." And, "like the keys located on the front of a disc drive, keys on the remote controller have not been visually distinguished to identify enabled selectable keys for given states." '418 Patent, col. 1, lines 42-60.

The "Summary of the Invention" thus sets out a number of "objects of the present invention." Two "objects" were "to provide a disc reproducing apparatus capable of performing interactive playback control, wherein enabled selectable keys of a key input unit are discriminated from non-enabled selectable keys, leading a user to visually recognize enabled selectable keys:"

(1) "under respective states during predetermined portions of the play operation," and

(2) "under respective states based on an interrupt received from the user during playback or during menu display."

'418 Patent, col. 1, line 64-col. 2, line 11. Six other "objects" were "to discriminate among enabled and disabled selectable keys of a key input unit on"-(1) "a player front," (2) "a screen" and (3) "a remote controller"-"leading a user to recognize the enabled selectable keys under respective states" (a) "during predetermined portions of the play operation" and (b) "based on the input of an interrupt." '418 Patent, col. 2, lines 14-43.

The solution, according to the "Summary of the Invention," was to "use offset information stored with respect to selectable keys to identify [and then distinguish] the selectable keys that are enabled during respective states of a playback operation." According to the Summary, "[t]he enabled selectable keys may be identified and/or distinguished in at least three scenarios:"

(1) when a predetermined portion of a playback operation has been reached,

(2) when a user input representing a non-enabled selectable key is received, and

(3) when a user input representing an information acquisition key for requesting identification of enabled selectable keys is received.

'418 Patent, col. 2, lines 45-56. That is, "reading and identifying may be invoked during [1] reproduction of a predetermined piece of information from the disc or [2] in response to a user input." FN2 ' 418 Patent, col. 2, lines 63-65.

FN2. Based on the foregoing and other instances, the specification apparently also refers to a "user input" as an "interrupt." *See, e.g.,* ' 418 Patent, col. 4, lines 28-31 ("First, enabled selectable keys are identified in respective states during predetermined portions of the play operation or in response to a user's interrupt input.").

If "the playback unit is controlled using a remote controller, * * * the remote controller or the display of the playback unit may identify the enabled selectable key(s) based on the second control signal." "In each case," the Summary explains, "the enabled selectable key(s) may be visually identified [1] on a front portion of the playback unit used to reproduce said offset data from said disc, [2] on a remote controller used to control disc reproduction, or [3] on some other display device:"

All or a limited portion of the enabled selectable key(s) may be visually identified using illumination of those keys or other display techniques such as on-screen displaying (OSD). For instance, a keyboard arrangement that visually discriminates between enabled selectable keys and non-enabled selectable keys may be displayed.

'418 Patent, col. 3, lines 8-38. *See also* '418 Patent, col. 12, lines 64-67 ("Other techniques may also be used to distinguish between the enabled selectable keys and the non-enabled selectable keys. For instance, keys may be distinguished auditorially or mechanically."). In other words, the keys themselves may be lit (whether on the player or remote controller), or the keys may be represented on a screen in a "keyboard

arrangement" so that a user may see which selectable keys are enabled, and which are not.

That much is clear from the "Detailed Description of the Preferred Embodiments." The '418 Patent discusses the prior art system of Figure 1, which is comprised of "an optical disc, a player, a screen (or monitor), a remote controller and an audio system" FN3 The prior art system provides two ways for a user to control the device, namely, "key input unit 13" on "remote controller (15)," *see* ' 418 Patent, col. 6, lines 33-34, 67 ("[r]emote controller 15 includes a key input unit 13"), and "key input unit 14" on the device itself. *See* ' 418 Patent, col. 6, lines 33-34 ("The player is formed by a main body and a front arranged with keys for selecting the menu."). The "OSD [On-Screen Display] generator 10" is used to display video from the disc (1) on the screen (9). The screen may also display a menu based on information from the disc. *See* ' 418 Patent, col. 7, lines 2-15 ("[C]ontrol unit 7 reads out the information required for diverse controls, such as play list information, select list information, tract information, system control information and information required for the on-screen displays from DSP 4 and MPEG decoder 8. Control unit 7 stores this information in the memory, and generates a control command to OSD generator 10 for generating a required caption signal in accordance with the playing state of the player. OSD generator 10 then generates an alphanumeric signal in accordance with the control command * * *. The alpha numeric signal is mixed with the image signal supplied from MPEG decoder 8 to form the resultant signal used to generate a display on screen 9."). The screen of Figure 1, though, is separate from the key input units, and serves as an output device, not an input device. In other words, the screen of Figure 1 is not a touch screen. Again, that was a prior art system.

FN3. *See supra* Part III.A for a reproduction of Figure 1.

The new device of Figure 4 is, according to the specification, "similar to the optical disc reproducing system shown in Fig. 1," except that it "includes a display-unit driving device 16 and a display unit 17." FN4 According to the specification, in Figure 4, "display-unit driving device 16 controls display unit 17 in accordance with the control signal of control unit 7. This control can be achieved at a predetermined portion of the playback operation or when the signal supplied from key input unit 14 is supplied into control unit 7." The specification explains that "[c]ontrol unit 7 determines whether the user selected key [is] enabled based on the signal and the existence of a corresponding offset value stored in the predetermined information area of the memory (not shown)." If the user selected key is enabled, data corresponding to the key value is read from the disc (1). "If the user selected key is disabled, all enabled selectable keys under the currently-current state are searched," and "enable/disable interrupt information is provided to display-unit driving device 16 with respect to all key input units." ' 418 Patent, col. 7, lines 22-48.

FN4. *See supra* Part III.A for a reproduction of Figure 4.

The specification further explains that the "[d]isplay-unit driving device 16 activates the display driving," *e.g.,* "if display unit 17 includes a plurality of LEDs, the driving device 16 performs on/off control." Apparently, "[d]isplay unit 17 may include any type of display device, such as an array of LEDs or a single liquid crystal display panel. When display unit 17 includes LEDs, they are preferably incorporated into the bo[d]y of the key input unit," *e.g.,* to illuminate the keys. '418 Patent, col. 7, lines 49-55.

The system of Figure 4 apparently does not use the screen (9) to show a user which selectable keys are enabled and which are disabled. Rather, the system uses a separate display unit. The display unit may, of course, be an LCD screen, or may be lights, but either way, the display unit is distinct (at least functionally)

from the key input unit. The display unit, if a screen, displays the keys of the key input unit to show the user which are enabled and which are disabled. In the system of Figure 4, therefore, the display unit serves as an output device, not an input device. In other words, the display unit of Figure 4 is not a touch screen.

Figure 5 illustrates a similar system, except that it "includes a remote controller" and does not have the "[k]ey input unit 14, display unit 17 and display-unit driving device 16" of Figure 4.FN5 According to the specification, the system of Figure 5 "is equipped with transmitters/receivers 20a & 20b and 21a & 21b, encoders 18b and 19b for encoding prior to the transmission/reception, and decoders 18a and 19a for decoding the received signal" in order to "enable mutual communication between the player and remote controller." In the system of Figure 5, "only remote controller 15 is equipped with a display-unit driving device 22 and a display unit 23," but "additional or alternative display-unit drive devices and display units may be provided." ' 418 Patent, col. 7, lines 57-59; col. 8, lines 2-10.

FN5. *See supra* Part III.A for a reproduction of Figure 5.

In the system of Figure 5, a user may select the menu using "[k]ey input unit 13 of remote controller 15." *See* '418 Patent, col. 8, line 11. The specification explains that a "user selected key value" from the key input unit is encoded by "encoder 19b," transmitted by "transmitter 21b" to "receiver 20b of the player," decoded by "decoder 18b," and supplied to "control unit 7." The control unit "reads out the offset information stored in the memory," "compares that offset information with the decoded signal," and "determines whether the decoded signal corresponds to an enabled selectable key or not." If there is correspondence, then the control unit "provides a control signal to execute" whatever "correspond[s] to the input selectable key," *i.e.,* "the operation corresponding to the user selected key is carried out." '418 Patent, col. 8, lines 13-31.

However, if there is no correspondence, *i.e.,* the control unit "determines that the decoded signal does not represent an enabled selectable key or that the decoded signal represents a disabled selectable key," then the control unit "searches for the enabled selectable keys based on the offset information stored in of the memory, and provides an appropriate control signal to display-unit driving device 22 based on the enabled selectable keys. Display-unit driving device 22 then controls display unit 23 to display all enabled selectable keys under the current state in accordance with the control signal supplied thereto." In short, "when control unit 7 determines that the decoded signal does not corresponds to an enabled selectable key, the control signal is provided to display-unit driving device 22 with respect to the enabled key." ' 418 Patent, col. 8, lines 34-47.

As an alternative, the system of Figure 5 apparently provides "a separate information acquisition key (not shown)" that a user may use "to request identification of enabled selectable keys under the correct state." The specification explains that such a key "may be used for identifying the enabled selectable keys when a new menu is to be selected during reproducing disc 1." ' 418 Patent, col. 8, lines 48-56.

The system of Figure 5 is therefore similar to that of Figure 4 in that the display unit displays the keys of the key input unit to show the user which selectable keys are enabled, and which are disabled. The displayed keys are viewable, but not selectable by a user. In other words, the display unit of Figure 5 is not a touch screen, either.

The specification also provides a brief example of using "the screen" of Figure 5's system to display "the entire key arrangement:"

Control unit 7 has external memory (not shown) for storing the system control data. A separate memory may be further provided for selectively displaying only the enabled selectable keys when displaying the entire key arrangement on the screen according to the present invention.

'418 Patent, col. 8, lines 57-61. It is not clear whether "the screen" is screen (9) or a display unit (23) screen. Regardless, the "enabled selectable keys" displayed on the screen as part of an "entire key arrangement." In other words, as disclosed, the displayed keys are not the actual keys of the key input unit. '418 Patent, col. 8, lines 59-60.

Although the systems of Figs. 4 and 5 apparently do not use the screen (9) to show the user which keys are enabled and which are disabled, the specification otherwise explains that screen (9) may be used. The specification also explains that the enabled selectable keys may be simultaneously displayed on the display unit and screen (9):

In the present invention as described above, the enabled selectable keys may be discriminatively displayed on display unit 23 of the remote controller in response to a key input representing a selectable key of an input device such as the key input unit 13 of the remote controller, or a key input representing a information acquisition key. In addition, the key input may be *simultaneously displayed* on the screen and display unit 17 on the player front. For example, when the *key input is executed using key input unit 13 or the remote controller,* the enabled selectable keys may be distinguished from the non-enabled selectable keys. The enabled selectable keys may be distinguished by display of these keys on only display unit 17 of the player front, on screen 9 together with display unit 17 of the player front, or on display unit 23 of the remote controller. While the enabled selectable keys are displayed on display unit 17 of the player front, it is also possible to *simultaneously display* the keys on screen 9 and display unit 23 of the remote controller, or to otherwise identify those keys in any other manner.

'418 Patent, col. 11, lines 8-27 (emphasis added). That, of course, confirms that the displayed keys are not the selectable keys of the key input unit. The key input unit and remote controller are for keyed input. The display units and screen are for display, *i.e.,* output.

The various methods described in the specification further support that. According to the specification, Figs. 6 to 9 are "used to describe methods for controlling generation of a visual display on the display unit when the interrupt input is supplied from input unit 14 and/or remote-controller key input unit 13 during the play operation." '418 Patent, col. 8, lines 63-67.

Figure 6 FN6 of the ' 418 Patent is said to be "a flowchart illustrating a method for visually distinguishing the enabled/disabled keys on the player front in the optical disc reproducing system according to the present invention, regardless of input received from the user. The keys may be distinguished throughout the playback process, or only during select predetermined portions of the playback process." Essentially, if the control unit determines that "an optical disc is being played," the control unit "determines whether the playback operation has reached a predetermined portion of the playback operation requiring identification of the enabled selectable keys." If so, then the control unit "reads out the offset information stored in its memory, searches to determine which selectable keys are enabled in the currently-played mode, and provides the control signal to display-unit driving device 16 based on that determination." Then, "the enabled selectable keys are displayed or otherwise distinguished" "onto display unit 17 on the player front." *See* ' 418 Patent, col. 9, lines 4-30.

FN6. *See supra* Part III.A for a reproduction of Figure 6.

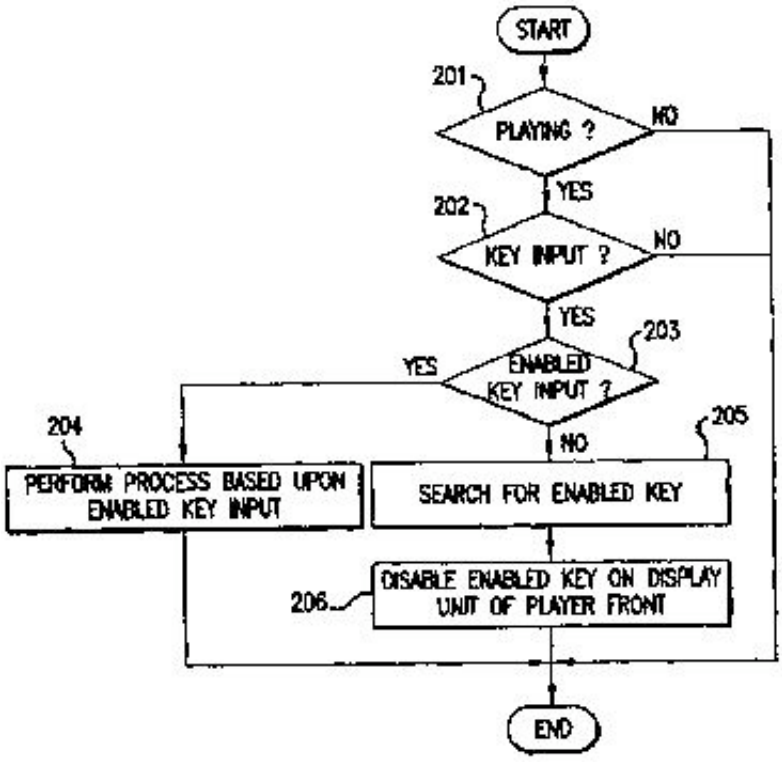

FIG.7

Figure 7 is said to be "a flowchart illustrating control of a visual display based on the selectable keys in response to a user's interrupt via, e.g., input unit 14 in the optical disc reproducing system." Essentially, if the control unit determines that "an optical disc is being played," the control unit "determines whether a user input is received." If so, and if "the input key is a disabled selectable key," then the control unit "searches for enabled selectable keys using the offset information stored in the memory, and provides a signal based on the enabled/disabled keys to display-unit driving device 16," which display the "enabled keys" "on display unit 17 of the player front" or "otherwise distinguished [them] from the non-enabled selectable keys." *See* ' 418 Patent, col. 9, lines 31-60.

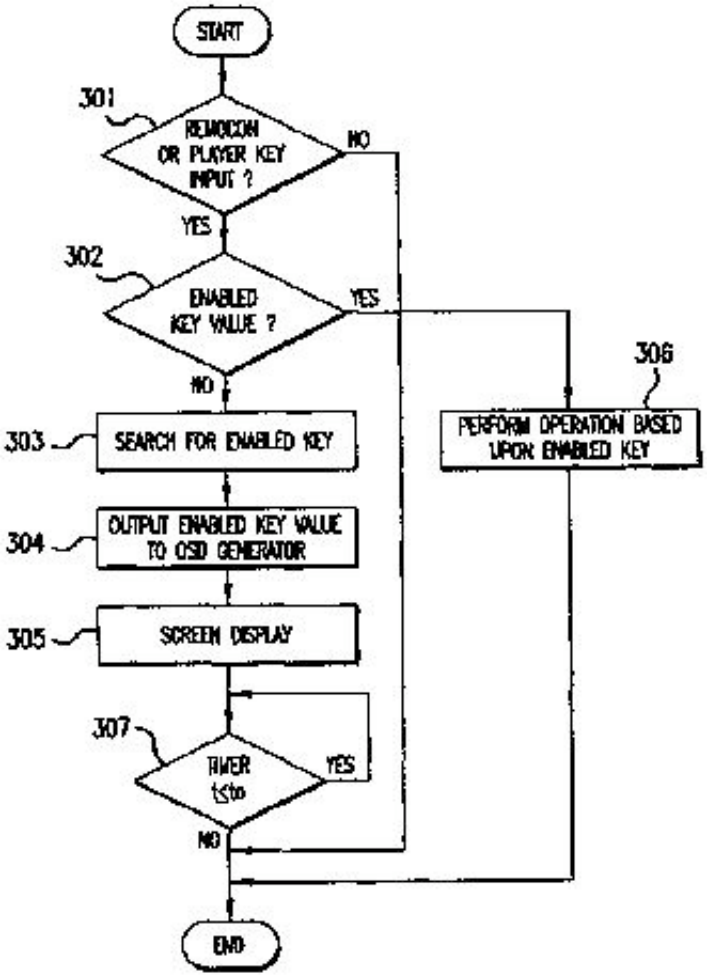

FIG.8

Figure 8 is said to be "a flowchart illustrating a method for visually distinguishing between enabled/disabled selectable keys on the on-screen display (OSD) in response to a user interrupt." Essentially, the control unit determines if there is a key input by a user. If so, and if "the input key corresponds to a disabled key," then the control unit "searches the memory for enabled selection keys based on the offset information stored in the memory," and sends a "control signal corresponding to the enabled selectable keys * * * to OSD generator 10," which then "displays a caption onto the screen with respect to the enabled selectable keys." The method may also include "freezing the display on screen 9 for a predetermined time t0." *See* '418 Patent, col. 9, line 61-col. 10, line 24.

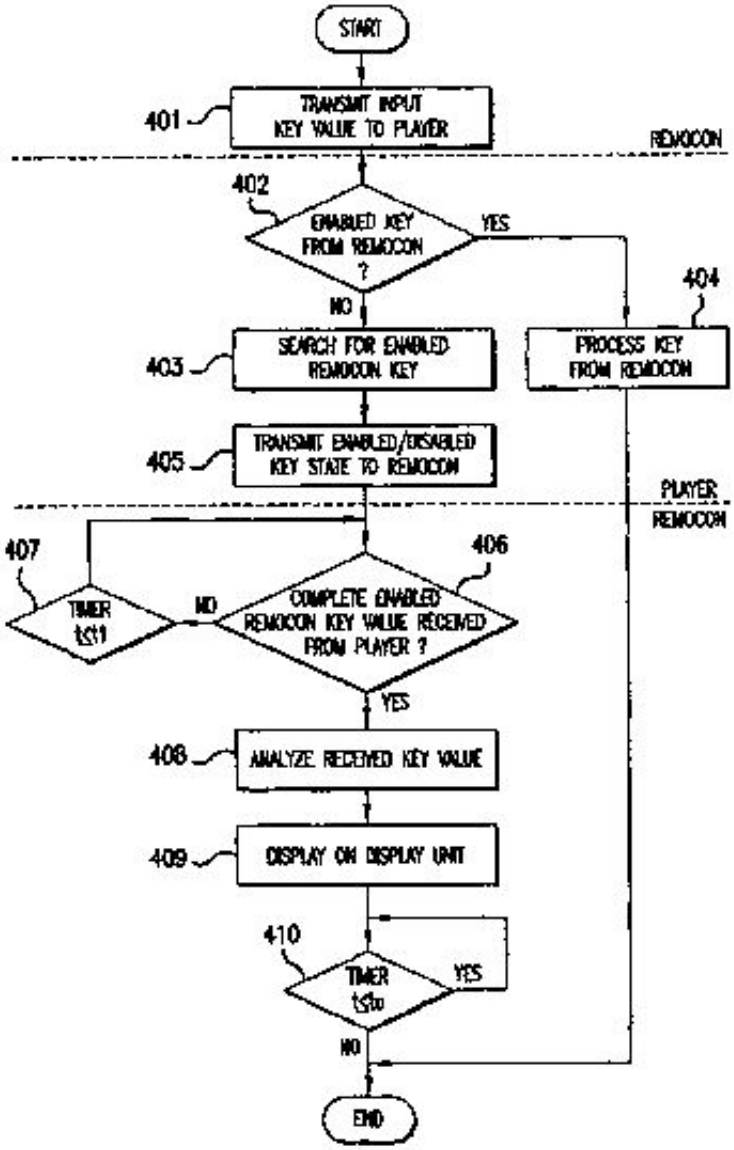

FIG.9

Figure 9 is said to be "a flowchart describing a controlling method for visually distinguishing between the enabled/disabled selectable keys on display unit 23 of the remote controller when the user's interrupt input is supplied from the remote controller." In short, if the "input key value" signal sent by the remote controller "does not to correspond to an enabled selectable key," then the control unit "searches to identify the enabled selectable keys under the current state based on the offset information stored in memory." When so identified, "the enabled selectable keys are displayed * * *, or otherwise distinguished from the non-enabled selectable keys," "for predetermined time." Also, some processes may be delayed to make sure that the "signal has been thoroughly received from the player." *See* '418 Patent, col. 10, lines 26-58.

In those methods, the "visual display on the display unit" is separate from and depends on what the user does with the key input unit. The display unit simply displays the enabled keys. The user does not supply an input through the display unit.

The same is true with respect to "methods for controlling the generation of the visual display on the display

unit when an interrupt input is supplied from input unit 14 and/or remote-controller key input unit 13 during the playback and operation" said to be disclosed in Figs. 10-12.

The specification explains that "unlike the processes shown in Figs. 7-9, which display the enabled selectable keys in response to user input of a non-enabled selectable key, the processes of Figs. 10-12 involve displaying the enabled selectable keys in response to user input of an information acquisition key representing a user request for identification of the enabled selectable keys."

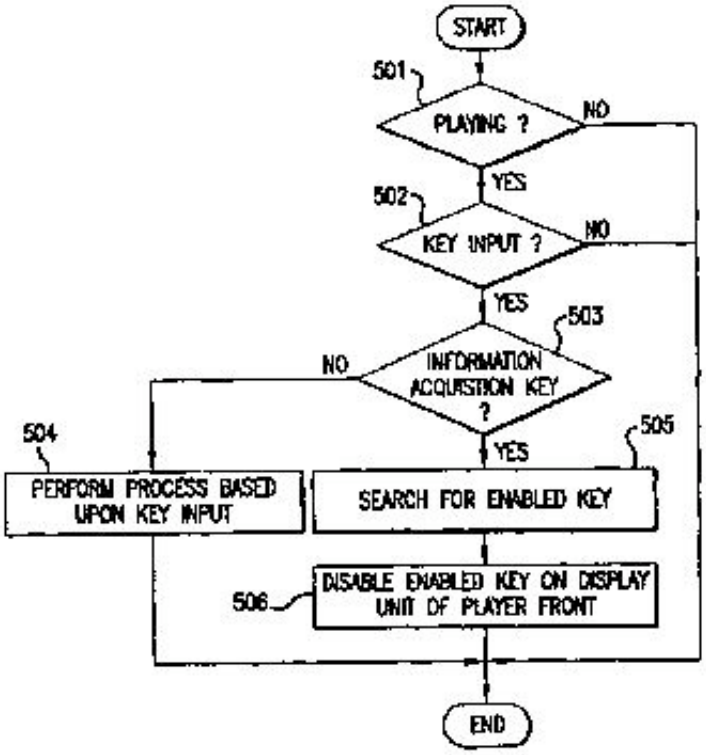

FIG.10

Figure 10 is said to be "a flowchart illustrating control of a visual display based on user input of an information acquisition key ." Essentially, the control unit "determines whether optical disc 1 is currently 10 being played." If so, and if "a user input is received" that "corresponds to an information acquisition key," then the control unit "searches for enabled selectable keys using the offset information stored in the memory, and provides a signal based on the enabled selectable keys to display-unit driving device 16." Then, "the enabled selectable keys are displayed on display unit 17 under the control of display-unit driving device 16, or otherwise distinguished from the non-enabled selectable keys." *See* '418 Patent, col. 11, lines 32-62.

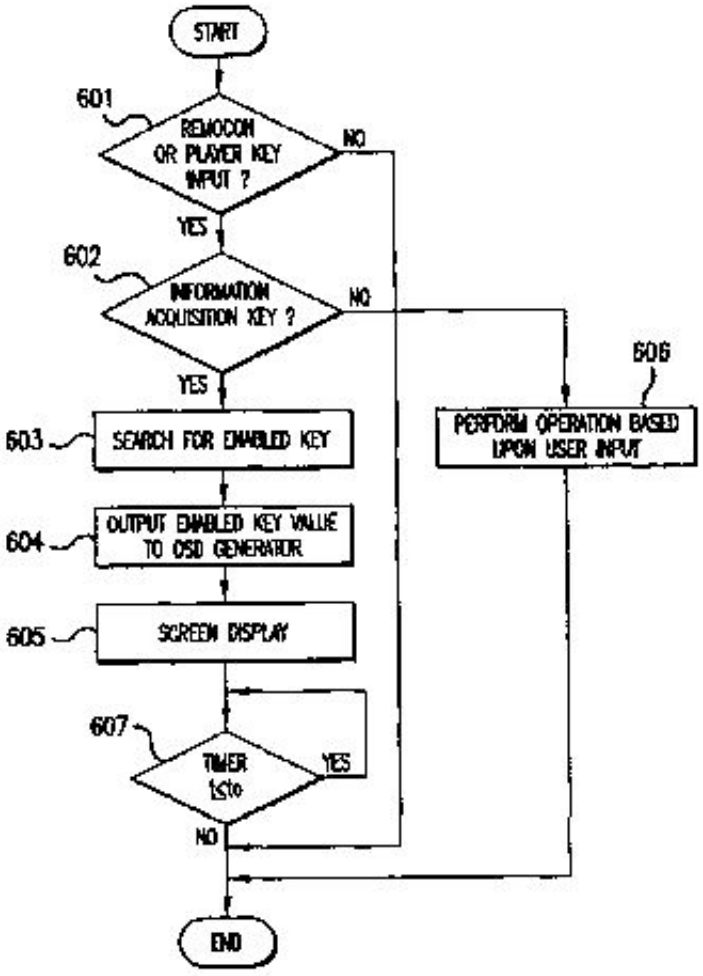

FIG.11

Figure 11 is said to be "a flowchart illustrating a method for visually distinguishing between enabled and disabled selectable keys on an on-screen display (OSD) in response to a user interrupt corresponding to an information acquisition key." In short, if "a user interrupt is received from a remote controller or key input unit" and it "corresponds to an information acquisition key," then the control unit "searches the memory for enabled selectable keys based on the offset information stored in the memory." The "enabled selectable keys" are then displayed as described in connection with Figure 8. *See* '418 Patent, col. 11, lines 63-67-col. 12, lines 1-12.

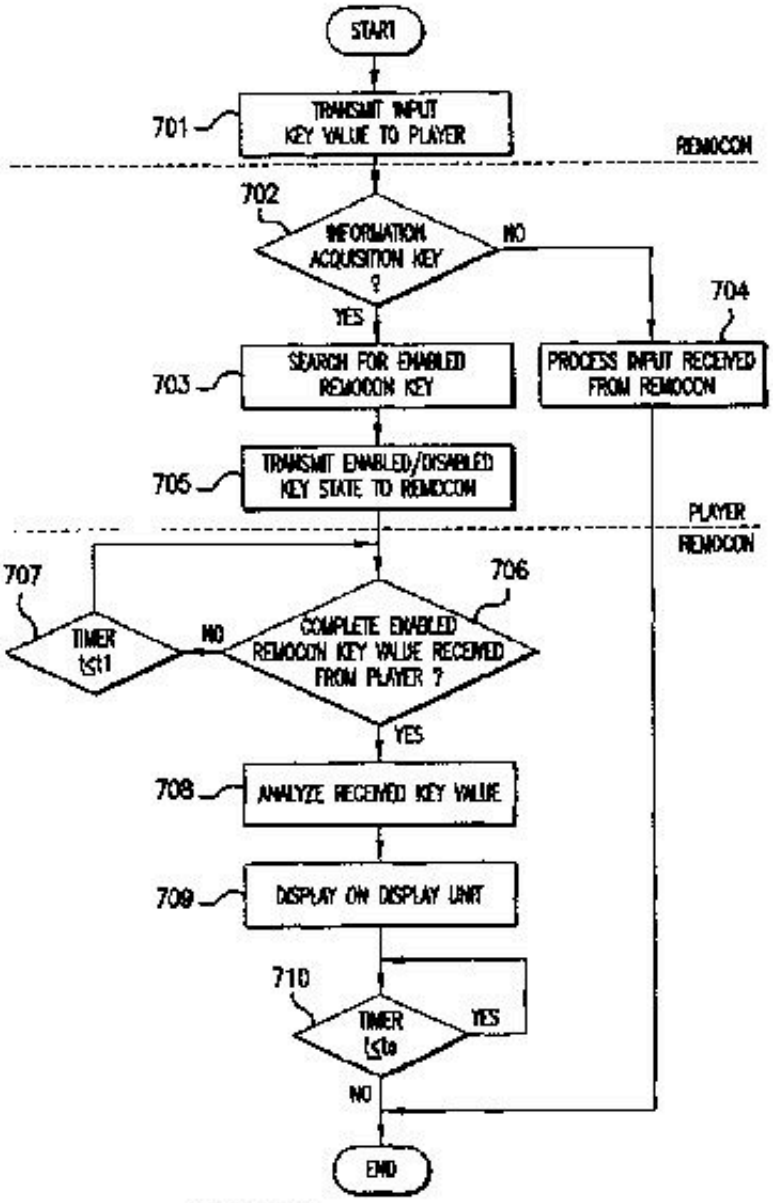

FIG.12

Finally, Figure 12 is said to be "a flowchart describing a control method for visually distinguishing between enabled and disabled selectable keys on display unit 23 of the remote controller in response to a user input corresponding to an information acquisition key." Basically, if the control unit receives a signal from the remote controller that "corresponds to an information acquisition key," then the process continues as described in connection with Figure 9. *See* '418 Patent, col. 12, lines 14-18.

To summarize, Figures 6-12 "demonstrate distinguishing enabled selectable keys from non-enabled selectable keys in at least three circumstances:"

[1] when a predetermined portion of a playback operation is reached,

[2] when a user input corresponding to a non-enabled selectable key is received, and

[3] when a user input corresponding to an information acquisition key is received.

and "in a variety of ways including:"

[1] displaying enabled keys on a display unit of a player front,

[2] displaying enabled keys on an on-screen display (OSD) of the playback unit, and

[3] displaying the enabled keys on a remote controller used to control the playback unit. [paragraphing and numbering added]

'418 Patent, col. 12, lines 33-45.

Thus, to return briefly to one of the "objects of the present invention" set out in the Summary, namely, "to discriminate among enabled and disabled selectable keys of a key input unit *on a screen,*" '418 Patent, col. 2, lines 23-25, the clearest interpretation of that "object" is that the discrimination is done on the screen, not that the "key input" is on the screen. That is, the "selectable keys" are on the "key input unit," not on the screen. LG's argument in that regard must therefore be rejected.

This conclusion makes Figures 13A-13C clear. According to the specification, these figures "demonstrate the three methods for visually discriminating between enabled and non-enabled selectable keys mentioned above. In each figure, shaded keys correspond to enabled selectable keys." The specification explains that in Figure 13A,FN7 "enabled controls 1, 3 and 4 are visually distinguished from non-enabled controls 2 and 5 on a front panel of player 131." ' 418 Patent, col. 12, lines 47-52. "In Fig. 13B, enabled selectable controls S are visually distinguished from non-enabled selectable controls on a control panel of remote controller 132." FN8 ' 418 Patent, col. 12, lines 52-55. In those figures, the enabled controls may be illuminated, *e.g.,* by LEDs, as discussed above.

FN7. *See supra* Part III.A for a reproduction of Figure 13A.

FN8. *See supra* Part III.A for a reproduction of Figure 13B.

Finally, in the figure most at issue, Figure 13C,FN9 "enabled selectable controls S are visually distinguished from non-enabled selectable controls on a display screen such as an on-screen display (OSD):" ' 418 Patent, col. 12, lines 55-58. According to the specification, "[d]isplay 133 can be located on player 131, remote controller 132, or some other display device. When located on the display device used to perform playback operations, the background for display 133 may be the program being reproduced, a frozen image from the program being reproduced, or some other background such as a blue screen. * * * * Also, * * * display 133 may show a keyboard arrangement that visually discriminates among the enabled selectable keys and the non-enabled selectable keys." ' 418 Patent, col. 12, line 58-col. 13, line 3. As Hitachi points out, Figure 13C appears to display a "keyboard arrangement" that corresponds to the keys of Figure 13B. In light of the systems and methods discussed above, it is clear that the "keyboard arrangement" is nothing more than a display of selectable keys, not the keys themselves. In other words, although the "selectable keys" are displayed, the display of keys is not itself selectable. Thus, a displayed key does not "represent a user

action," as LG urges. Rather, the displayed key represents a selectable key. The prosecution history does not suggest otherwise.

FN9. *See supra* Part III.A for a reproduction of Figure 13C.

As the Federal Circuit has repeatedly emphasized, "[u]ltimately, the interpretation to be given a term can only be determined and confirmed with a full understanding of what the inventors actually invented and intended to envelop with the claim. The construction that stays true to the claim language and most naturally aligns with the patent's description of the invention will be, in the end, the correct construction." Renishaw PLC v. Marposs Societa' per Azioni, 158 F.3d 1243, 1250 (Fed.Cir.1998). In short, the meaning of "key" that most naturally aligns with the disclosure of the '418 Patent is "a physical hard button," *i.e.*, the portion of the respective proposed constructions that both parties agree on. The '418 Patent simply provides a way for users to distinguish physical keys from on the basis of their operability using lights or a screen that shows which of those keys are operable and which are not.

Accordingly, the Court construes the term "key" to mean "a physical, hard button."

b) "selectable key"

This term appears in all of the asserted claims. Claim 5 is representative (the disputed term is in boldface):

5. An apparatus for identifying at least one enabled **selectable key,** comprising:

an interface unit to receive an input;

a control unit to determine if an input corresponds to a request for identification of said at least one enabled **selectable key** and to identify said at least one enabled **selectable key** in response to said request for identification; and

a selection display unit to visually discriminate said at least one enabled key from a non-enabled **selectable key** under control of said control unit, which controls said selection display unit based on said identification and in response to said request for identification.

'418 Patent, col. 13, line 40-col. 14, line 2 (emphasis added).

(1) The Parties' Positions

The parties propose the following constructions:

LG	***Hitachi***
A[key] capable of being pressed by a user to cause the action represented by the button or marked area.	A key that is capable of being pressed by a user.

See Dkt. No. 64, at 2.

LG argues that the dispute "centers around whether a 'selectable key' can also comprise a 'marked physical area on a screen,' " just as it does for the term "key." Dkt. No. 47, at 8. According to LG, "[t]he specification

also makes clear that the use of a 'selectable key' is to cause an action represented by pressing the selected key." *Id*. "For example," LG contends, "on a keyboard (whether physical or 'soft'), pressing the 'A' key will cause the letter 'A' to be entered into the appropriate field of a device using such keys as an input-pressing the 'B' key will result in entering the letter 'B', not the letter 'A', into the appropriate field." *Id*. LG additionally points to a dictionary definition in support of its proposed construction. *Id*. n. 5.

Hitachi responds that "a 'selectable key' is a key that can be pressed by a user, and whether that key-press will or will not cause anything to happen depends on whether the 'selectable key' is an 'enabled selectable key' (in which case something will happen) or a 'non-enabled selectable key' (in which case nothing happens)." Dkt. No. 48, at 27-28. According to Hitachi, LG's construction is incorrect by "requiring that a 'selectable' key must 'cause the action represented,' * * * * because it effectively makes all selectable keys enabled, thereby reading the term 'enabled' out of the claim and creating an inconsistency with the parties' agreed construction of 'non-enabled selectable key.' " *Id*. at 27. Hitachi points to Figure 3B as showing "selectable keys" that are either enabled or not, *i.e.,* "NEXT, PREV, and RETURN are selectable keys * * * * but are not enabled (nothing will happen if a user presses them because those functions are not available at this particular moment in time during the playback of the disc)." *Id*. at 28.

Hitachi further contends that LG's "example of typing the letters A and B (LGE Br. at 8) demonstrates the flaw in LGE's construction. Pressing the 'A' or 'B' keys on a computer keyboard will only cause the letters to be typed if the computer is turned on, such that the keys are enabled," but if the computer is turned off "the letters are still selectable (they can be pressed by a user), but nothing will happen (no letter will be typed) because the keys are non-enabled selectable keys. Dkt. No. 48, at 28. Alternatively, if the user is in a menu where 'B' is the keystroke for 'Bold' but 'A' is not used, 'B' is enabled and selectable, but 'A' is selectable and not enabled." *Id*. Hitachi urges that "[a] general purpose computer with a keyboard and monitor has a display on which letters pressed on the keyboard are displayed. However, the letters that appear on the monitor are not 'keys.' " *Id*. at 28-29.

LG replies that "the specification clearly discloses the use of 'selectable keys'-i.e., keys that can be pressed by a user-on LCD displays." Dkt. No. 55, at 6. LG further contends their "proposed claim construction does not 'contradict the parties' agreed constructions by making all 'selectable keys' necessarily 'enabled selectable keys;' " rather, LG "recognizes that the key merely needs to be capable of causing the action represented by the key when pressed depending on whether the key is enabled or disabled, as provided in the agreed constructions." *Id*. at 6-7. LG urges that in Figure 3B, the " 'selectable key' represents a particular action regardless of whether it is enabled or disabled. For example, the enabled 'FF' key represents the action of 'fast forward,' and the 'NEXT' key still represents the action of 'next screen' even though the 'NEXT' key is disabled and does not cause the device to skip to the next screen in response to being pushed by the user." *Id*. at 7.

(2) Construction

[2] As noted above, the parties agree that the term "selectable" means "capable of being pressed by a user." The primary dispute concerns the proper construction of "key." That issue is addressed above, and that discussion likewise mostly resolves the current dispute in connection with the term "selectable key."

That is also believed to address the apparent dispute over whether the phrase "to cause action represented by the button or marked area" in LG's proposed construction negates the distinction between enabled and non-enabled "selectable keys." To the extent that it does not, the Court again notes that the parties agree that an

"enabled selectable key" is "[a]n activated key that, when pressed by a user, causes the action represented by the key," and a "non-enabled selectable key" is "[a] deactivated key that, when pressed by a user, does not cause the action represented by the key." As suggested by Figure 3B, FN10 a "selectable key" may be pressed by a user whether or not enabled.

FN10. *See supra* Part III.A for a reproduction of Figure 3B.

Whether or not the key responds depends on whether it is enabled. That contingency is believed expressed by the words "capable of" in the parties' proposed construction. Nevertheless, for clarity, the Court notes that pressing a "selectable key" may not result in the action represented by the key. Indeed, the term is perfectly clear without the phrase "to cause action represented by the button or marked area" proposed by LG.

Accordingly, the Court construes the term "selectable key" to mean "a key that is capable of being pressed by a user."

c) "request for identification of said at least one enabled selectable key"

This term appears in claims 5 and 9. Claim 5 is representative (the disputed term is in boldface):

5. An apparatus for identifying at least one enabled selectable key, comprising:

an interface unit to receive an input;

a control unit to determine if an input corresponds to a **request for identification of said at least one enabled selectable key** and to identify said at least one enabled selectable key in response to said request for identification; and

a selection display unit to visually discriminate said at least one enabled key from a non-enabled selectable key under control of said control unit, which controls said selection display unit based on said identification and in response to **said request for identification.**

'418 Patent, col. 13, line 40-col. 14, line 2 (emphasis added).

(1) The Parties' Positions

The parties propose the following constructions:

LG	***Hitachi***
An input, separate from the enabled selectable keys, that allows a user to ask for a first visual identification of at least one enabled selectable key under the current operation of the device.	A user input, separate from the enabled selectable keys, by which a user can request an identification of those key(s), that (1) can be pressed by a user, and (2) are already active.

See Dkt. No. 64, at 5.

LG contends that the specification discloses the "separate from the enabled selectable keys" limitation, pointing to the '418 Patent column 8, lines 47-56:

Alternatively, ***a separate information acquisition key (not shown) may be used to request identification of enabled selectable keys*** under the correct state. More specifically, an information acquisition key may be selected by a user to provide a signal with respect to the enabled selectable keys, which signal is supplied to display-unit driving device 22. Such an information acquisition key may be used for identifying the enabled selectable keys when a new menu is to be selected during reproducing disc 1.

Dkt. No. 47, at 9. LG also urges that the specification "discloses exemplary conditions or scenarios under which 'enabled selectable keys' are identified, and indicates that receiving a user input triggers visual identification of at least one enabled selectable key," citing column 2, lines 48-56:

Once identified, the enabled selectable keys may be distinguished from non-enabled selectable keys ***visually,*** or otherwise. The enabled selectable keys may be identified and/or distinguished in at least three scenarios: ... (3) when a user input representing an information acquisition key for requesting ***identification of enabled selectable keys*** is received.

Id. at 10.

Additionally, LG urges that during prosecution, the applicant distinguished the Tahara prior art reference by arguing that "identifying an enabled selectable key in response to a request for identification of a selectable key is different than 'indicating an enabled key in response to a selectable key input * * *.' " Dkt. No. 47, at 10. According to LG, the "[a]pplicant argued that Tahara 'is silent regarding whether a user can make an inquiry of currently selectable options' and does not 'allow a user to make an inquiry of what is selectable.' " *Id*.

Hitachi responds that this phrase "requires a specialized, dedicated 'information acquisition key' that is *not* one of the enabled selectable keys and that *is* dedicated to requesting an identification of the enabled selectable keys." Dkt. No. 48, at 29. Also, Hitachi urges, rather than " 'allows' a user to ask for identification," "the key itself is used to request the identification." *Id*.

According to Hitachi, LG's use of the word "visually" is incorrect in that "[c]laims 5 and 9 do not recite any 'visual identification' limitation. Dkt. No. 48, at 29. Instead, the claims include two separate limitations: 'identifying' and 'visually *discriminating*.' " *Id*. Hitachi asserts that the " 'identification' recited in the 'request for identification' limitation of claims 5 and 9 is performed by a 'control unit,' which makes an identification electronically." *Id*. at 29-30. After the identification, Hitachi asserts the claims "subsequently and separately recite the requirement of 'visually discriminating' among keys, and this function is performed by the 'selection display unit,' *not* the control unit." *Id*. at 30.

Using its accused N.I.C.E. products by way of comparison, Hitachi also contends that LG's use of the phrase "under the current operation of the device" is "too vague" because "the 'enabled keys' that are identified in response to a user pressing the 'request for identification key' *are the same keys* that are enabled at the time the identification key is pressed, as opposed to some different set of enabled keys that are enabled *after* the identification key is pressed." Dkt. No. 48, at 30. According to Hitachi, LG's proposed construction "impermissibly broadens the claim to cover the aspect of the N.I.C.E. accused product described," and "contradicts the specification and prosecution history" in doing so. *Id*. at 31. Hitachi cites various passages of the '418 Patent specification in support of its contention that "the key itself is used to request the identification," and only the "currently enabled" keys are visually discriminated or identified, such as

column 13, lines 4-8 ("According to the present invention, the information data stored in the predetermined area of the optical disc is utilized to check the ***currently enabled*** keys, and to visually discriminate among respective keys of the key input unit on the display unit."), column 10, lines 48-50 ("control unit 7 searches to identify the enabled selectable keys under the ***current state*** based on the offset information"), and column 5, lines 3-8 ("[T]he offset information for respective keys under each state for the entire disc are recorded on predetermined information area 32. Based on this offset information, the ***currently-enabled selectable keys*** can be recognized under each respective state."). Dkt. No. 48, at 29-32.

Hitachi urges that during prosecution, LG added "new pending claims 68-69 and 78-79" each having the following limitation: "a request for identification of said at least one enabled selectable key." Dkt. No. 48, at 32. Hitachi contends, *inter alia,* that LG later distinguished the Jewson prior art reference, which, according to Hitachi, "discloses a system in which a user must first choose among valid options before being presented with a subsequent set of sub-options available only *after* the first choice is made," rather than a user asking for a valid option, then making a first choice. *Id.* at 33. Finally, Hitachi asserts that LG "acknowledges that the scope of the '418 patent was narrowed during prosecution" and "concedes in its brief * * * * that its purported invention was directed to allowing a user to 'make an inquiry of currently selectable options.' " Id.

LG replies that (1) with respect to the "allows" limitation, Hitachi's "criticism is based on a conjured, vague hypothetical," but LG is willing to go with Hitachi's "by which a user can request" language; (2) "visual discrimination necessarily requires a visual identification of the items that are being visually distinguished"- "a logical requirement;" and (3) Hitachi improperly points to the accused products, whereas LG's "is the only proposed construction supported by the intrinsic evidence." Dkt. No. 55, at 7-8. LG further contends that Hitachi "confus[es] the idea of identifying keys that are 'currently enabled' with identifying keys that are 'currently displayed.' " *Id.* at 9. According to LG, the intrinsic record "require[s] an identification of 'currently enabled' selectable keys regardless of whether they were displayed by the device prior to the 'request for identification.' " *Id.*

Hitachi, in its Sur-Reply, contends that LG "apparently admits that the 'key(s) that are visually distinguished as enabled/non-enabled in response to a user's request for identification based on the state(s) of enablement/non-enablement when the request for identification was made,' " and that LG "thus admits the key(s) that are visually distinguished, in response to a user's request, are distinguished based on their state(s) of enablement/non-enablement *at the time the request for identification was made*." Dkt. No. 63, at 13. Hitachi argues that the selectable keys "can be either enabled or non-enabled, but that status changes from time-to-time, so a user allegedly needs a way to know at any particular time which keys are enabled. Thus, the user can press a special button (a request for identification) to request a visual indication of the keys that are enabled *at that time*." *Id.* Hitachi therefore contends that "pressing the special request button will show the keys' status (enabled, not enabled) as they existed at the exact time the request was made, therefore satisfying the claimed requirement that the system visually discriminate *said* enabled key *based on said identification and in response to said request for identification,*" unlike LG's proposed construction that "eliminates any timing requirement." *Id.* at 13-14. Hitachi argues that under LG's construction, a jury may "misunderstand and think that the claim is broad enough to cover the situation where a user makes a request for identification, then some unspecified amount of time elapses, the keys' status (enabled, non-enabled) changes, and then the visual indication occurs based on the keys' new status." *Id.* at 14.

(2) Construction

[3] The parties at least agree that this phrase means "an input, separate from the enabled selectable keys, by which a user can request." The parties dispute (1) whether the request is for a visual identification, and (2) whether this phrase means that the request is for identification of selectable keys enabled at the time of the request.

As for the first issue, the claims call for visual discrimination, but not visual identification. According to claim 5, the "control unit" is provided to do the identification, not the user. According to the specification, the "control unit" does not identify enabled selectable keys by sight. Rather, the "control unit" does so electronically. *See, e.g.,* '418 Patent, col. 7, lines 37-40 ("Control unit 7 determines whether the user selected key [is] enabled based on the signal and the existence of a corresponding offset value stored in the predetermined information area of the memory (not shown)."). For similar reasons, the parallel method of claim 9 does not call for visual identification. LG's argument must therefore be rejected.

As for the second issue, it is not clear whether the parties truly have a dispute. Indeed, both proposed constructions appear to connote the same thing: "current" versus "already active." The specification explains, for example, that "[a]ccording to the present invention, the information data stored in the predetermined area of the optical disc is utilized to check the *currently enabled keys,* and to visually discriminate among respective keys of the key input unit on the display unit." '418 Patent, col. 13, lines 4-8. *See also, e.g.,* '418 Patent, col. 5, lines 50-54 ("By identifying the enabled selectable keys through illumination, the user is informed that a selection error has occurred, that the currently-selected key is inoperative, and that other selections are available."); col. 8, lines 40-43 ("Display-unit driving device 22 then controls display unit 23 to display all enabled selectable keys under the current state in accordance with the control signal supplied thereto."); col. 10, lines 48-50 ("In step 403, control unit 7 searches to identify the enabled selectable keys under the current state based on the offset information stored in memory."); and col. 10, lines 64-67 ("In step 408, display-unit driving device 22 analyzes the decoded key value, generates a signal with respect to the enabled selectable keys of the current state, and supplies that signal to display unit 23."). The "request" is for "identification" of an enabled selectable key in the current state or operation of the device, *i.e.,* a currently-enabled selectable key. In other words, the request is for identification of selectable keys that are currently enabled, *i.e.,* enabled (or "already active") at the time of the request. That clarification is believed to address Hitachi's concern.

Thus, the Court construes the phrase "request for identification of said at least one enabled selectable key" to mean "an input, separate from the enabled selectable keys, by which a user can request an identification of at least one currently-enabled selectable key."

d) "selection display unit"

This term appears in claim 5 of the '418 Patent (the disputed term is in boldface):

5. An apparatus for identifying at least one enabled selectable key, comprising:

an interface unit to receive an input;

a control unit * * *; and

a **selection display unit** to visually discriminate said at least one enabled key from a non-enabled selectable key under control of said control unit, which controls said **selection display unit** based on said

identification and in response to said request for identification.

'418 Patent, col. 13, line 40-col. 14, line 2 (emphasis added).

(1) The Parties' Positions

The parties propose the following constructions:

LG	***Hitachi***
A screen on which pressable enabled keys are presented and distinguished visually.	A unit that shows selections.

See Dkt. No. 64, at 6.

LG urges that "[t]his term requires construction, in part, as a consequence of Hitachi's impermissibly broad proposed construction of this term and their efforts to impose an overly narrow construction on the claim term 'key.' " Dkt. No. 47, at 11. According to LG, "the patentees distinguish[ed] between merely *'visually discriminating* among enabled and disabled keys of respective states' when such keys are knobs or buttons and *'displaying* all keys of the key input unit, where the enabled keys are visually distinguished from the disabled keys on that display through, for example, an overlap process.' " *Id*. In the latter case, LG contends, "the display of enabled and disabled selectable keys must occur on a display screen, such as an LCD," which is "consistent with abundant intrinsic evidence limiting the term 'display' to display screens located on the device." *Id*.

Additionally, LG urges that as seen in Figs. 13A-13C, "a selection display unit is required only when the enabled selectable keys are to be displayed." Dkt. No. 47, at 12. Finally, LG contends that claim 1 "does not include the 'selection display unit' limitation to 'visually discriminate' among the enabled and non-enabled selectable keys; instead, claim 1 only recites a 'control unit' to visually discriminate among the keys"-and that difference supports LG's proposed construction. *Id*.

Hitachi responds that the "selection display unit" is discussed in column 7, lines 49-56 and is depicted in Figure 4 as "display unit 17" and in Figure 5 as "display unit 23":

Display-unit driving device 16 activates the display driving. For instance, if ***display unit 17 includes a plurality of LEDs,*** the driving device 16 performs on/off control. ***Display unit 17 may include any type of display device, such as an array of LEDs*** or a single liquid crystal display panel. When display unit 17 includes LEDs, they are preferably incorporated into the body of the key input unit.

Dkt. No. 48, at 34-35. According to Hitachi, Figures 4 and 5 show that their respective "Display Unit[s]" are "separate and distinct from" their respective "Key Input Unit[s]." *Id*. at 35. Hitachi further contends that LG thus incorrectly "combines the Display Unit with the input Keys." *Id*.

Hitachi argues that Figures 13A and 13B do not show "a 'screen,' much less a touch-screen," and instead "are described as showing two types of 'display units' of the LED-type embodiment" where Figure 13A "shows keys on the front of the CD/DVD player with little LED lights built into the keys," and Figure 13B "shows a remote control with little LED lights built into the keys." Hitachi contends that LG's construction improperly excludes the embodiments of Figures 13A and 13B. Dkt. No. 48, at 35.

Overall, Hitachi urges, the "selection display unit" is the "unit for visually distinguishing among selections, either through LED lights within the keys themselves, or through the use of a (non-touch-screen) on-screen display (OSD), of the enabled keys that are located on a remote control or the front of a CD/DVD player itself." Dkt. No. 48, at 34. Hitachi further contends that LG's "construction improperly excludes both the LED embodiment and the OSD embodiment, and improperly requires a 'screen on which pressable enabled keys are presented' that is found nowhere in the patent. Thus, LG[ ]'s construction excludes the disclosed embodiments and includes an un-disclosed embodiment." *Id.*

LG replies that the language of claim 5 makes clear that 'selection' in the 'selection display unit' "refers exclusively to the selectable keys," not "some generic 'selections,' " and that the " 'selection display unit' visually discriminates the enabled selectable keys from the non-enabled selectable keys." Dkt. No. 55, at 9-10. LG contends that "the selectable keys of the 'key input unit' " do not have to be "separate and distinct" and that Figures 4 and 5 show "that the selectable keys and the display unit are contained in the same input mechanism, as represented by the dashed-lined box in each Figure." *Id.* at 10. Finally, LG argues that "different claims can be written to cover different scopes of the invention;" thus, although the "patent specification discloses three different ways the control unit could visually discriminate enabled from non-enabled selectable keys," Figure 13C is covered by "claim 5 (the only apparatus claim with the 'selection display unit' term)," and Figures 13A and 13B are covered by claim 1. Dkt. No. 55, at 10-11.

Hitachi, in its sur-reply, urges that the "display unit used to visually discriminate between enabled and non-enabled selectable keys can be LEDs built into the keys themselves," and thus "need not be a screen." Dkt. No. 63, at 12. According to Hitachi, LG's construction "confuses the selection *input* unit (the keys) with the display unit, which is an *output* unit used to visually discriminate." *Id.* at 13. Hitachi contends that "[i]n the '418 patent user input is made through keys on the front of the DVD/CD player or on the remote control" and "[o]utput can be presented in one of three ways to the user in order to visually discriminate enabled keys: (1) through the use of graphics generated by an OSD generator and output on a screen; or (2) through the use of lights in the keys located either (a) on the remote control, or (b) on the front of the DVD/CD player." Id. Hitachi again urges that the '418 Patent does not disclose pressable touch screens.

(2) Construction

[4] This term appears only in claim 5. The plain language of claim 5 requires the "selection display unit" to "visually discriminate." LG's proposed "distinguished visually" limitation is thus unnecessary. *See* United States Surgical Corp. v. Ethicon, Inc., 103 F.3d 1554, 1568 (Fed.Cir.1997), *cert. denied,* 522 U.S. 950, 118 S.Ct. 369, 139 L.Ed.2d 287 (1997) ("The *Markman* decisions do not hold that the trial judge must repeat or restate every claim term in order to comply with the ruling that claim construction is for the court. * * * It is not an obligatory exercise in redundancy.").

The plain language of claim 5 also requires the "selection display unit" to "visually discriminate said at least one enabled key," *i.e.,* enabled keys are presented. LG's proposed "enabled keys are presented" limitation is thus unnecessary, as well.

Similarly, claim 5 does not facially limit the "selection display unit" to a screen. The specification does not use the term "selection display unit," but does make frequent reference to a "display unit," which appears to be synonymous. *See, e.g.,* '418 Patent, col. 9, lines 56-59. ("In step 206, the enabled keys are displayed on display unit 17 of the player front under the control of display-unit driving device 16, or otherwise distinguished from the non-enabled selectable keys."). According to the specification, "[d]isplay unit 17 may

include any type of display device, such as an array of LEDs or a single liquid crystal display panel. When display unit 17 includes LEDs, they are preferably incorporated into the bo[d]y of the key input unit." '418 patent, col. 7, lines 52-55. In other words, a "display unit" in the form of LEDs may be used to light up the enabled selectable keys. It is certainly not true that "display" is used solely in connection with screens. *See* '418 Patent, col. 5, lines 40-44. ("For example, lights used to illuminate the knob key may be discriminatively displayed with respect to selectable keys based on whether those keys are deemed enabled based on the existence of corresponding offset information."). Thus, a "selection display unit" is not limited to a screen.

Even if a "selection display unit" was limited to a screen, there is certainly no basis in the intrinsic record for limiting this term to presenting "pressable" keys on the screen in light of the previous discussion in connection with the term "key." Furthermore, in light of the Court's construction of "key," a screen "selection display unit" cannot present a "pressable" key. Accordingly, LG's proposed construction must be rejected.

Thus, the Court construes a "selection display unit" to mean "a unit that shows enabled selectable keys."

e) "visually discriminate/discriminating said at least one enabled key from a non-enabled selectable key * * * based on said identification and in response to said request for identification"

This term appears in claims 5 and 9 (the disputed term is in boldface):

5. An apparatus for identifying at least one enabled selectable key, comprising:

an interface unit to receive an input;

a control unit * * *; and

a selection display unit to **visually discriminate said at least one enabled key from a non-enabled selectable key under control of said control unit, which controls said selection display unit based on said identification and in response to said request for identification.**

* * *

9. A method to identify at least one enabled selectable key, comprising:

determining if an input corresponds to a request for identification* * *;

identifying * * *; and

visually discriminating said at least one enabled key from a non-enabled selectable key based on said identification and in response to said request for identification.

'418 Patent, col. 13, line 40-col. 14, line 2; col. 14, lines 11-21 (emphasis added).

(1) The Parties' Positions

The parties propose the following constructions:

LG	***Hitachi***
Visually distinguish at least one enabled selectable key from at least one non-enabled selectable key in response to the request for identification from the user.	At the time of the request for identification, the key(s) that are at that time already selectable and enabled, are visually distinguished from the key(s) that are, at that same time, selectable but non-enabled.

See Dkt. No. 64, at 7.

LG urges that Hitachi seeks "to narrow the language to a particular state of the selectable enabled and nonenabled keys 'at the time' the request for identification is made," but that "[n]othing in the claim language supports [that contention]." Dkt. No. 47, at 13. LG cites the '418 Patent column 2, lines 23-27 ("Another object of the present invention is to discriminate among enabled and disabled selectable keys of a key input unit on a screen, leading a user to recognize the enabled selectable keys under respective states during predetermined portions of the play operation,"); column 3, lines 33-39 ("All or a limited portion of the enabled selectable key(s) may be visually identified using illumination of those keys or other display techniques such as on-screen displaying (OSD). For instance, a keyboard arrangement that visually discriminates between enabled selectable keys and non-enabled selectable keys may be displayed."); and column 5, lines 57-59 ("One way of to identify enabled selectable keys is to display only enabled selectable keys on an OSD (on screen display)."). Id. at 13-14. LG also points to Figures 13A through 13C as illustrating "three methods for visually discriminating between enabled and non-enabled selectable keys." Id. at 14. Finally, LG urges a dictionary definition for "discriminate" that supports its proposed construction: "[t]o make clear distinction; distinguish." Id. at 15.

Hitachi responds that LG ignores the word "said" in claims 5 and 9, and therefore "simply requires visually distinguishing *any* enabled key (not necessarily the same key that has been previously identified and subjected to the rest of the limitations of claims 5 or 9)." Dkt. No. 48, at 36. Hitachi contends the phrase "based on said identification and in response to said request for identification" was defined during prosecution "to require that the key(s) that are visually distinguished as enabled/non-enabled are the *same key(s)* that existed in the same state(s) of enablement/non-enablement at the time the request for identification was made by the user. In other words, the phrase does *not* cover the scenario in which a user requests an identification of enabled keys, but then some other, different set of keys and/or some other, different state(s) of enablement are visually identified." *Id*. Hitachi cites the '418 Patent column 12, lines 29-32 ("when control unit 7 determines that the signal received from the remote controller corresponds to an information acquisition key, the process proceeds to step 703. Steps 703-710 correspond to steps 403-410 of FIG. 9 described previously"); column 10, lined 48-50 ("In step 403, control unit 7 searches to identify the enabled selectable keys under the current state based on the offset information stored in memory."); and column 10, line 64-column 11, line 3 ("In step 408, display unit driving device 22 analyzes the decoded key value, generates a signal with respect to the enabled selectable keys of the current state, and supplies that signal to display unit 23. In step 409, the enabled selectable keys are displayed on display unit 23, or otherwise distinguished from the non-enabled selectable keys."). Dkt. No. 48, at 36-37.

As for the prosecution history, Hitachi contends LG added the phrase "based on said identification and in response to said request for identification" to overcome a rejection based on the Jewson patent:

With respect to both the tree structure elements and the selectable keys, Jewson teaches displaying key and tree elements that are not enabled in gray highlight. However, this use of gray highlighting occurs

automatically, and is not done in response to any type of user input ...

Besides failing to visually discriminate between enabled and non-enabled selectable keys based on user input, Jewson also does not disclose or suggest identifying enabled versus non-enabled selectable keys based on user input. Consequently, Jewson does not disclose or suggest identifying "said at least one enabled selectable key in response to said request for identification," as recited in claims 68 and 78.

Dkt. No. 48, at 37. The Examiner thereafter stated:

Jewson et al disclose a system where the "Display Parameter List" holds information on how to display the options. It lists those selection choices that are enabled choices and highlights them using color and/or brightness. In Fig. 4, the calling box program (Fig. 3, item 40), supplies all of the enabled selections. At item 80, if the selection is not corresponding to that of enabled selections, the computer signals the operator that an incorrect action has been attempted. At item 90, the program examines whether all of the enabled keys are shown, if no, then moves on to item 110, where the all of the enabled selectable items are shown.

and in the Reasons for Allowance remarked:

The prior art of Jewson et al (U.S. 5,621,905) in view of Tahara et al (U.S. 5,909,551) fail to disclose visually discriminating said at least one enabled key from a non-enabled selectable key based on said identification and in response to said request for identification. Jewson et al disclose visually discriminating enabled and non-enabled keys in col. 3, lines 55-59, but do not visually discriminate in response to request for identification.

Dkt. No. 48, at 38. Hitachi then argues based on "this prosecution history, it is clear that claims 5 and 9 of the '418 Patent require much more than simply color-coded selections be shown," namely, that the "visual discrimination must be (1) based on the request for identification and (2) in response to the request for identification," stating that LG's "construction ignores the 'based on' requirement of the claim, in favor of only the 'in response to' requirement." Dkt. No. 48, at 38-39.

LG replies that "the patent and prosecution history, including the portion cited by [Hitachi] in their Brief, * * * * show (using [Hitachi's] terminology) the key(s) that are visually distinguished as enabled/non-enabled in response to a user's request for identification *based on the state(s) of enablement/non-enablement when the request for identification was made,* not on whether they were displayed by the device prior to the "request for identification." Dkt. No. 55, at 11-12. LG further argues that the "prosecution history cited by [Hitachi] is consistent with LG[ ]'s proposed construction of this disputed claim term." *Id*. at 12. LG contends that the arguments made during prosecution to distinguish the Jewson reference, and the Examiner's Reasons for Allowance where the Examiner stated that "Jewson et al * * * * do not visually discriminate in response to request for identification" are both "expressly represented in the 'in response to the request for identification from the user' language of [LG's] proposed construction." *Id*.

Hitachi replies (as it did in connection with the phrase "request for identification * * * ") that LG "apparently admits that the 'key(s) that are visually distinguished as enabled/non-enabled in response to a user's request for identification based on the state(s) of enablement/non-enablement when the request for identification was made,' " and that LG "thus admits the key(s) that are visually distinguished, in response to a user's request, are distinguished based on their state(s) of enablement/non-enablement *at the time the request for identification was made*." Dkt. No. 63, at 13. Hitachi contends the selectable keys "can be either

enabled or non-enabled, but that status changes from time-to-time, so a user allegedly needs a way to know at any particular time which keys are enabled. Thus, the user can press a special button (a request for identification) to request a visual indication of the keys that are enabled *at that time*." *Id*. Hitachi therefore contends that "pressing the special request button will show the keys' status (enabled, not enabled) as they existed at the exact time the request was made, therefore satisfying the claimed requirement that the system visually discriminate *said* enabled key *based on said identification and in response to said request for identification,*" unlike LG's proposed construction that "eliminates any timing requirement." *Id*. at 13-14. Hitachi argues that under LG's construction, a jury may "misunderstand and think that the claim is broad enough to cover the situation where a user makes a request for identification, then some unspecified amount of time elapses, the keys' status (enabled, non-enabled) changes, and then the visual indication occurs based on the keys' new status." *Id*. at 14.

(2) Construction

The parties agree that the term "visually discriminate" means "visually distinguish." The primary issue is one of timing, *i.e .,* whether the keys identified are those enabled at the time of the request. That is the same dispute (if there truly is one) presented in connection with the phrase "request for identification * * *." Resolution of the issue in connection with that phrase is believed to resolve the issue presented here. Insofar as it requires clarification, the Court notes that the plain language of the claims requires visual discrimination of the same "enabled selectable key" that was identified in response to the "request for identification of said at least one enabled selectable key." **Accordingly, no further construction is believed to be required.**

f) "offset information"

This phrase appears in disputed claim 6, as well as in other claims (the disputed term is in boldface):

6. The apparatus of claim 5, wherein, in performing said identification, said controller reads an **offset information** from a disc and identifies said at least one enabled selectable key based on said **offset information.**

'418 Patent, col. 14, lines 3-6 (emphasis added).

(1) The Parties' Positions

The parties propose the following constructions. LG's construction changed during briefing:

LG	***Hitachi***
A value or index identifying the position in a memory or other predetermined information area of data used to identify all available selectable keys under current operation of the device.	Any indication, index, or value that indicates a position or status.

See Dkt. No. 64, at 8.

LG contends that its proposed construction "is based on the inventor's lexicography," citing the '418 Patent column 3, lines 41-43 ("The offset information used to determine whether an enabled selectable key has been input may include offset address information or offset flag information"); column 4, lines 37-41 ("enabled selectable keys for each respective state may be determined based on the presence or absence of offset values with respect to the selectable keys during the play or menu selection for play-back control");

column 4, lines 46-54 ("The address offset values indicate target for movement (jumps) relative to the current state in accordance with corresponding functions (e.g., previous screen, next screen, rewind or respective numeral keys) of respective keys. For example, if the 'previous menu' key is an enabled selectable key in the current state, the 'previous menu' key has the address offset value of a predetermined data area corresponding to the previous picture which precedes the current state."); and column 4, line 67 to column 5, line 1 ("offset values representing offset information in respective states"). Dkt. No. 47, at 15. Those passages, LG contends, provide "a clear indication that 'offset information' relates to a position in a memory or other predetermined data area that is used to identify the enabled selectable keys under current operation of the device." *Id*. at 16. Also, LG urges, dependent claims 6, 7 and 8 "all reinforce LG's construction," by "demonstrat[ing] that the 'offset information,' because it includes an 'offset address' and an 'offset flag,' must be an index or value identifying a position in memory or in another predetermined information area." *Id*. at 16-17.

Hitachi responds that LG's construction incorrectly "*requires* an indication of memory position, thereby ignoring the embodiment where the 'offset information' is an 'offset flag,' that indicates *status* rather than memory position." Dkt. No. 48, at 39. According to Hitachi, LG's proposed construction "renders claim 8 nonsensical." *Id*. Hitachi further contends "offset information" "need not be an address, but can instead be a simple flag bit, without any indication of position," citing column 6, lines 5-8 ("offset information data ('1' for enable and '0' for disable or '0' for enable and '1' for disable) is transmitted to the remote controller with respect to enabled or disabled keys"); column 4, line 67 through column 5, line 8 ("As shown in Figure 3A, the play list is recorded with ***offset values representing*** offset information in ***respective states*** .... offset information for respective keys under each ***state ... Based on this offset information,*** the currently enabled selectable keys can be recognized [by the controller] under each respective ***state.***"); and Figure 3B. Dkt. No. 48, at 39-40.

Hitachi also argues LG's construction would improperly add the limitations "identifying the position in a memory" and "to identify all available selectable keys." Dkt. No. 48, at 40. Hitachi contends claim 6 "specifies that the only required functionality of the 'offset information' is that it can be read by 'said controller' " and that the "said controller," not the "offset information" performs the function of "identif[ying] said at least one enabled key based on said offset information." *Id*. Hitachi also contends claim 6 calls for "identifying '*said at least one enabled* selectable key,' not '*all*' enabled selectable keys." *Id*. Finally, Hitachi states "claim 6 requires that the 'offset information' be read 'from a disc,' " not from "a memory or other predetermined information area of data." *Id*. at 41.

LG replies it does "not disagree that the phrase 'offset information' must encompass offset addresses and offset flags as set forth in dependent claims 7 and 8 and the specification" and contends its "construction is based on this very premise and directly supported by the specification." Dkt. No. 55, at 12-13. LG asserts its construction is "superior to the broad language included in [Hitachi's] proposed construction," stating Hitachi's construction "can be read to cover 'any indication ... that indicates a position or status,' " is "so broad as to be meaningless," and that Hitachi's use of the word "status" that "is vague." *Id*. at 13.

(2) Construction

[5] According to the plain language of claim 6, the "offset information" is read from a "disc," and is used to "identify" "at least one enabled selectable key." In other words, recitation of "at least one enabled selectable key" in claims 5 and 6 suggests there could be other "enabled selectable keys," but "at least one" such key is identified. Thus, the "offset information" need not be used to identify all "enabled selectable keys." LG's

proposed construction must therefore be rejected to that extent.

Claims 7 and 8, which are apparently not asserted, further define "offset information:"

7. The apparatus of claim 6, wherein said offset information includes an offset address.

8. The apparatus of claim 6, wherein said offset information includes an offset flag.

'418 Patent, col. 14, lines 7-9. Thus, "offset information" may include an "offset address" or "offset flag." The specification supports this conclusion. *See* '418 Patent, col. 3, lines 40-42 ("The offset information used to determine whether an enabled selectable key has been input may include offset address information or offset flag information.").

The specification explains "offset information" in connection with generally explaining "a disc reproducing apparatus capable of performing interactive playback control via a two step process," *i.e.*, (1) "enabled selectable keys are identified in respective states during predetermined portions of the play operation or in response to a user's interrupt input," and (2) "keys in enabled states are visually distinguished from keys in a disabled state on the key input unit during the play operation" as a "result of the first step." '418 Patent, col. 4, lines 26-36.

In connection with the first step, the specification explains that "enabled selectable keys for each respective state may be determined based on the presence or absence of *offset values* with respect to the selectable keys during the play or menu selection for playback control." In particular, "*address offset values* are generally provided for enabled selectable keys," and "indicate target for movement (jumps) relative to the current state in accordance with corresponding functions (e.g., previous screen, next screen, rewind or respective numeral keys) of respective keys. For example, if the 'previous menu' key is an enabled selectable key in the current state, the 'previous menu' key has the *address offset value* of a predetermined data area corresponding to the previous picture which precedes the current state. However, if data on the disc is recorded to inhibit a jump from the current picture to the previous picture, the 'previous' menu key under the current state is disabled, having *no address offset value*. In other words, the selectable keys which are enabled for each playback state are determined based on the presence and absence of the *offset values* corresponding to the selectable keys of the key input unit under respective state." '418 Patent, col. 4, lines 37-62.

For "a VCD play system," such as that said to be shown in Figure 2,FN11 "files such as info.vcd, entry.vcd, lot.vcd and psd .vcd are stored together in information area 32. The psd.vcd is stored with a selection list and play list." ' 418 Patent, col. 4, lines 63-66. Figure 3A FN12 is said to show "the play list * * * recorded with *offset values* representing offset information in respective states." ' 418 Patent, col. 4, line 67-col. 5, line 1.

FN11. *See supra* Part III.A for a reproduction of Figure 2.

FN12. *See supra* Part III.A for a reproduction of Figure 3A.

Alternatively, the specification explains, "the play list may be recorded with *enable flags* representing the offset information." '418 Patent, col. 5, lines 2-3. Figure 3B FN13 appears to so illustrate. According to the

specification, the "offset information data" may be bits " '1' for enable and '0' for disable or '0' for enable and '1' for disable." ' 418 Patent, col. 6, lines 5-7.

FN13. *See supra* Part III.A for a reproduction of Figure 3B.

Thus, "the offset information for respective keys under each state for the entire disc are recorded on predetermined information area 32. Based on this offset information, the currently-enabled selectable keys can be recognized under each respective state." '418 Patent, col. 5, lines 3-8. Thus, as the parties agree, the "offset information" may be a value (flag) or an index (address).

The foregoing also makes clear the "offset information" is used to identify "enabled selectable keys" for the *current* state of the device. *See, e.g.,* ' 418 Patent, col. 4, lines 46-58. ("The address offset values indicate target for movement (jumps) relative to the *current state* in accordance with corresponding functions (e.g., previous screen, next screen, rewind or respective numeral keys) of respective keys. Example, if the 'previous menu' key is an enabled selectable key in the *current state,* the 'previous menu' key has the address offset value of a predetermined data area corresponding to the previous picture which precedes the *current state*. However, if data on the disc is recorded to inhibit a jump from the *current* picture to the previous picture, the 'previous' menu key under the *current state* is disabled, having no address offset value."). The current state of a device simply refers, as LG urges, to the current operation state of the device. For example, "when a user listens to a piece of music on a compact disc (CD), all keys relating to the CD (e.g., music selecting keys such as " and ", a play key and a key for program memory if necessary) are illuminated to allow the user to visibly recognize selectable keys in the current state." '418 Patent, col. 1, lines 19-23. *See also* ' 418 Patent, col. 1, lines 50-53 ("For instance, depending on the current operating state, the key selected by the user may change between an enabled or disabled state * * *."); col. 8, lines 40-43. ("Display-unit driving device 22 then controls display unit 23 to display all enabled selectable keys under the current state in accordance with the control signal supplied thereto."); col. 10, lines 48-50 ("In step 403, control unit 7 searches to identify the enabled selectable keys under the current state based on the offset information stored in memory."); and col. 10, lines 64-67 ("In step 408, display-unit driving device 22 analyzes the decoded key value, generates a signal with respect to the enabled selectable keys of the current state, and supplies that signal to display unit 23.").

Thus, the "offset information" does more than simply indicate a position or status. The "offset information" is also used to identify enabled selectable keys under the current state or operation of the device-which is simply what the claims already describe.

Finally, as discussed below in connection with discussion of the term "disc," the claims call for the "offset information" to be read from a "disc," not a "memory." It may, of course, as discussed below, also be read from "memory," but that is not what the claims state.

Thus, the Court construes the term "offset information" to mean "a value or index identifying enabled selectable keys under current operation of the device."

g) "disc"

This phrase appears in claims 2, 6, 10, and 14. Claim 6 is representative (the disputed term is in boldface):

6. The apparatus of claim 5, wherein, in performing said identification, said controller reads an offset information from a **disc** and identifies said at least one enabled selectable key based on said offset information.

'418 Patent, col. 14, lines 3-6 (emphasis added).

(1) The Parties' Positions

The parties propose the following constructions:

LG	***Hitachi***
A medium used to store information in computers and electronic devices.	Optical disc including, for example, CD, VCD, and DVD.

See Dkt. No. 64, at 8.

LG urges various recited "object[s] of the present invention" "provide a disc reproducing apparatus," and that "one skilled in the art would interpret [the patent] disclosure to mean that the '418 patent invention is directed to any type of 'disc reproducing apparatus,' and is not limited to any specific type of storage medium or format." Dkt. No. 47, at 17-19. According to LG, the disclosed "examples of disc drive formats (such as those for VCD or DVD) * * * clearly are preferred embodiments and are not intended to limit the scope of the '418 patent." Id. at 18. Furthermore, LG argues, "[n]either independent claims 5 nor 9 limit the invention to an 'optical disc reproducing system,' " nor does claim 6. Id. at 18-19. LG contends claim 5 recites an "apparatus for identifying at least one enabled selectable key," claim 9 recites "a method to identify at least one enabled selectable key," and claim 6 merely recites that "said controller reads an offset information from *a* disc and identifies * * * *," noting that "the claim does not contain the more limiting phrase 'optical disc' as one would expect from the Defendants' proposed construction of the term." Id. at 19.

Hitachi contends the term "disc" should be "limited to an optical disc" because it "is the only type of disc * * * disclosed in the specification," and is not the same thing as a " 'disk' (with a 'k')," which refers "to other types of electronic storage media, including non-optical storage." Dkt. No. 48, at 41. Hitachi's cites, *inter alia,* Wikipedia and an Apple, Inc. reference, in explaining the difference between a "disc" and a "disk." According to Hitachi, LG "seeks to impermissibly expand the scope of the term 'disc' to mean 'memory.' *Id.* at 42. LGE did not claim a system in which 'offset information' is read from a 'disc.' " *Id.*

LG replies that Hitachi "impermissibly attempt[s] to narrow" the term "disc" by wrongly asserting that "[t]o those of skill in the art, the term 'disc' (with a 'c')" is different from the "term 'disk' (with a 'k')." Dkt. No. 55, at 13-14. LG argues that Hitachi's citations "to two Internet web pages written approximately *a decade* after the '418 patent was filed" makes "them irrelevant to claim construction," in addition to being incorrect. Id. at 14. LG contends that the term "disc" from the "time period before and extending up to the 1997 filing date of the '418 patent" was "used regularly to describe many types of electronic storage, including non-optical storage." Id. LG cites a number of Seagate's patents that use the term "disc," as well as disclose "the use of offset information, such as offset addresses, with magnetic disc storage systems," citing U.S. Patent No. 5,257,149. Id. at 14-15.

LG further urges that only one of Hitachi's citations to the passages in the specification "corresponds to the actual claim term 'disc,' and that passage clearly notes with the '*e.g.*' notation that the identified DVD is merely one example of a disc." Dkt. No. 55, at 15. LG contends that the "specification includes the term

'optical disc' several times," but the patentee "used the broader language 'disc' in claim 6" instead of "optical disc." *Id*. LG contends that the "phrase 'disc' only appears in dependent claims 2, 6, 10, and 14, and only in connection with the term 'offset information.' Specifically, each of these claims recites that 'said controller reads an offset information from a disc,' " and the specification "repeatedly discloses that the offset information is stored in 'the memory,' not on an optical disc." *Id*. at 15.

Hitachi, in its Sur-Reply, argues that the '418 Patent uses the term "optical disc," that "[a]ll figures of the patent show *an optical disc,*" that "[a]ll descriptions take place in the context of *optical disc* players (DVD, CD, VCD)," and that "[n]owhere in the patent is the term 'disc' used to refer to anything other than an optical medium." Dkt. No. 63, at 14. Hitachi contends that since "the specification also discloses (but does not claim) 'memory' " it further supports their claimed construction of "disc." *Id*. Hitachi argues that "[t]he specification draws a clear distinction between the generic term 'memory' and the narrower term 'disc' " and that the terms " 'memory' as a 'disc' or even a 'disk,' 'hard disk,' or 'hard drive' " are not referred to in the '418 patent, thus "the inventors were aware of two different types of storage media" but claimed a " 'disc,' not 'memory' " in claim 6. Id.

(2) Construction

[6] In the claims, a "disc" is something that "offset information" is read from. Claim 6, for example, recites the "controller" of claim 5 reading "an offset information from a disc." Apparently, the "disc" stores the "offset information." The claims do not otherwise make clear whether "disc" refers to an optical disc or more broadly to an information storage medium.

Both "disc" and "optical disc" appear in the specification. The specification uniformly uses the term "disc" to refer to an "optical disc." *See* '418 Patent, col. 1, lines 8-15 ("The present invention relates to a method and apparatus for allowing a user to visually recognize selectable keys in a *disc* reproducing apparatus capable of performing interactive playback control, and more particularly to a method and apparatus for generating a display based on the existence of offset values corresponding to keys of a key input unit during playback control in a *disc* reproducing apparatus capable of performing interactive playback control."), col. 1, lines 55-61. ("The number of keys on the front of most electronic devices like *disc* drives has recently been reduced, those function keys and option keys being replaced by keys that are located on a remote controller. Yet, like the keys located on the front of a *disc* drive, keys on the remote controller have not been visually distinguished to identify enabled selectable keys for given states."), col. 1, line 64-col. 2, line 3 ("An object of the present invention is to provide a *disc* reproducing apparatus capable of performing interactive playback control, * * *."); col. 2, lines 4-11 ("Another object of the present invention is to provide a *disc* reproducing apparatus capable of performing interactive playback control, * * *."); col. 2, lines 57-62 ("More specifically, the method and apparatus of a first embodiment of the present invention reads offset information corresponding to selectable keys from a *disc* (e.g., DVD) and identifies * * *. The reading and identifying may be invoked during reproduction of a predetermined piece of information from the *disc* or in response to a user input."); col. 3, lines 28-32 ("In each case, the enabled selectable key(s) may be visually identified on a front portion of the playback unit used to reproduce said offset data from said *disc,* on a remote controller used to control *disc* reproduction, or on some other display device."); col. 4, lines 26-28 ("The aforementioned objects are preferably achieved in a *disc* reproducing apparatus capable of performing interactive playback control via a two step process."); col. 4, lines 42-58 ("In more detail, in *an optical disc* reproducing apparatus capable of performing interactive playback control, address offset values are generally provided for enabled selectable keys, * * *. The address offset values indicate target for movement (jumps) relative to the current state in accordance with corresponding functions (e.g., previous

screen, next screen, rewind or respective numeral keys) of respective keys. * * * * However, if data on *the disc* is recorded to inhibit a jump from the current picture to the previous picture, the 'previous' menu key under the current state is disabled, having no address offset value."); col. 4, line 63-col. 5, line 5 ("For instance, when the reproducing system is a VCD play system, as shown in FIG. 2, files such as info.vcd, entry.vcd, lot.vcd and psd.vcd are stored together in information area 32. * * * * [T]he offset information for respective keys under each state for the entire *disc* are recorded on predetermined information area 32."); col. 5, lines 9-12 ("When the reproducing system is a DVD play system, data recorded within a single *disc* is too voluminous to record administrative information for managing the data at one specific area on the disc."); col. 8, lines 54-56 ("Such an information acquisition key may be used for identifying the enabled selectable keys when a new menu is to be selected during reproducing *disc* 1."); and col. 11, lines 43-46 ("In step 501, control unit 7 determines whether *optical disc* 1 is currently 10 being played or not. The process is terminated when *the disc* is not being played; otherwise, the process proceeds to step 502."). The patent figures also illustrate an optical disc, *e.g.,* the "disc 1" of Figure 5.FN14 *See* ' 418 Patent, col. 11, lines 43-4 ("Such an information acquisition key may be used for identifying the enabled selectable keys when a new menu is to be selected during reproducing disc 1.").

FN14. *See supra* Part III.A for a reproduction of Figure 5.

The specification further identifies where "offset information" is stored on a "disc." If, for example, "the reproducing system is a VCD play system, as shown in Fig. 2." FN15 "[F]iles such as info.vcd, entry.vcd, lot.vcd and psd.vcd are stored together in information area 32. The psd.vcd is stored with a selection list and play list," the latter of which "is recorded with offset values representing offset information in respective states. * * * * That is, the offset information for respective keys under each state for the entire disc are recorded on predetermined information area 32." ' 418 Patent, col. 4, line 63-col. 5, line 5. *See also* id. at col. 1, lines 32-36. (Background: "The component system controls the illumination of the selectable keys based on the group of keys including the pressed key, without referencing information such as offset information of respective keys recorded on a disc."); col. 2, lines 57-62. (Summary: "the method and apparatus of a first embodiment of the present invention reads offset information corresponding to selectable keys from a disc (e.g ., DVD) and identifies at least one enabled selectable key based on whether offset information corresponding to each particular selectable key is stored on the disc."); and col. 3, lines 28-32. (Summary: "In each case, the enabled selectable key(s) may be visually identified on a front portion of the playback unit used to reproduce said offset data from said disc, on a remote controller used to control disc reproduction, or on some other display device.").

FN15. *See supra* Part III.A for a reproduction of Figure 2.

The specification does, as LG urges, disclose the controller as reading "offset information" from a "memory." But that does not mean that a "disc" is a "memory." Rather, the specification explains that the controller reads the "offset information" from the disc, transfers the "offset information" to a "memory," and during operation reads the "offset information" from "memory." To continue the foregoing example, the specification explains that "[t]he data written in information area 32(VCD)" are "referred to as 'system control data or system control information' throughout this document. These terms therefore correspond to basic information data which controls the system." '418 Patent, col. 5, lines 17-21.

According to the specification, in connection with Figure 1,FN16 "optical disc 1 stores compressed digital

signals representing," *e.g.,* "motion pictures and sound data." As noted above in the overview section, "[t]he player includes a pickup device 2, an RF amplifier 3, a digital signal processor (DSP) 4, a digital-to-analog (D/A) converter 5, a servo 6, a control unit 7, an MPEG decoder 8, an OSD generator 10, a screen 9, a key input unit 14 for selecting the menu and a receiver 11 for performing the radio communication with remote controller 15." The "[p]ickup device 2 reads out the data from optical disc 1 and converts the optical signal generated based on the digital data into an electric signal." After amplification by "RF amplifier 3," the signal "is supplied to DSP 4 *having an external memory (not shown).* DSP 4 generates digitized bit stream data," and supplies the data "into MPEG decoder 8." ' 418 Patent, col. 6, lines 25-50.

FN16. *See supra* Part III.A for a reproduction of Figure 1.

The specification further explains that "[c]ontrol unit 7 controls DSP 4, MPEG decoder 8 and servo 6 based on inputs received from key input unit 14 or external remote controller 15 for performing the above-described series of operations. Additionally, *control unit 7 reads out* the information required for diverse controls, such as play list information, select list information, tract information, *system control information* and information required for the on-screen displays from DSP 4 and MPEG decoder 8. *Control unit 7 stores this information in the memory,* and generates a control command to OSD generator 10 for generating a required caption signal in accordance with the playing state of the player." "418 Patent, col. 6, line 66-col. 7, line 10. Figure 1 does, of course, illustrate prior art, but the apparatus of Figures 4 and 5-which are apparently not prior art-rely on the same process. *See* '418 Patent, col. 7, lines 21-40 (Figure 4: "As shown in Fig. 4, the player according to the present invention is similar to the optical disc reproducing system shown in Fig. 1. * * * * Control unit 7 determines whether the user selected key enabled based on the signal and the existence of a corresponding offset value stored in the predetermined information area of the memory (not shown)."); and col. 8, lines 57-58 (Figure 5: "Control unit 7 has external memory (not shown) for storing the system control data."). *See also* id. at col. 3, lines 28-32 ("In each case, the enabled selectable key(s) may be visually identified on a front portion of the playback unit used to reproduce said offset data from said disc * * *.") and col. 10, lines 8-12 ("In step 306, control unit 7 provides a control signal to servo 6 for performing an operation based on the enabled key in accordance with the system control information stored in the memory, and servo 6 controls pickup device 2 to read out and play the selected data.").

In short, the patentee clearly used "disc" to refer to an "optical disc," and "memory" to refer to "memory." The specification discloses that the controller reads "offset information" from both a disc and from memory. The claims call for the "offset information" to be read from a "disc," not a "memory."

The prosecution history does not suggest a different interpretation. Thus, reference to the intrinsic record is sufficient to resolve the parties' dispute. Nevertheless, it is worth noting that the foregoing is not inconsistent with how "disc" was used in the art. *See, e.g.,* MICROSOFT COMPUTER DICTIONARY 143 (4th ed.1999) (defining "disc" as "a round, flat piece of nonmagnetic, shiny metal encased in a plastic coating, designed to be read from and written to by optical (laser) technology. It is now standard practice to use the spelling *disc* for optical discs and *disk* in all other computer contexts, such as floppy disk, hard disk, and RAM disk.").

Thus, the Court construes the term "disc" to mean "an optical disc, such as CD, VCD, or DVD."

IV. Conclusion

According to the previous discussion, the Court **ORDERS** the claim terms for the '418 Patent construed as indicated herein.