not have to be able to move within the grid. The movement limitation requires that the "visual identification" be able to be moved along both dimensions of the grid guide. The administrative law judge finds that this movement limitation is supported by both the plain language of the claims at issue and the specification. First, all three claims specify that the "visual identification," not the grid guide, must be able to be moved, in the first and second dimensions. The claims also make clear that the dimensions in which the "visual identification" is being moved are the dimensions of the "two - dimensionally arranged" grid guide. (CX-4, col. 16, lns. 58-65; col. 19, ln. 67 - col. 20, ln. 5; CX-3, col. 14, lns. 48-53).

The administrative law judge further finds that the specification provides support for the administrative law judge's construction of the movement limitation to require that the "visual identification" must be able to be moved within the grid. Thus, the Abstract discloses that it is the cursor, and not the grid guide, that is to be moved: "To tag the underlying position -- which defines where the cursor (32) is and thus, where it will move next ...." (Emphasis added). Similarly, the Summary of the Invention section recites that "a means is connected ... for moving the cursor in the array in series of equal length steps." (CX-4, col. 2, 64-66 (Emphasis added); see also CX-4, col. 3, lns. 8-11 ("The cursor is moved in the array in a series of equal length steps ...."). The Detailed Description of the Invention section also makes reference to the "[m]ovement of the cursor." (CX-4, col. 5, ln. 23). A comparison of Figures 1, 2, and 3 illustrates the movement described in the specification and the claims: the grid remains the same in all three figures, except for the position of the cursor which has been moved from the cell with the title "Young & Restless" in Figure 1, to the cell with the title "Judge (Part 1)" in Figure 2 and to the cell with the title "Inside Edition" in Figure 3. In all three figures, the grid has remained static and unchanged while the cursor has been moved in the first and/or second dimension to highlight a new program.

The administrative law judge also finds that the cursor's movement within the grid must be done, consistent with EchoStar's proposed construction, in regular steps that may result in cell to cell movement or movement within a cell, depending on the length of the cell occupied by the "visual identification." He finds that regular cell to cell movement would render the innovative cursor a nullity. The innovative cursor (1) highlights the entire cell; (2) identifies its current half hour position within a cell that is longer than a half hour; and (3) differentially identifies the remaining portions of the cell. See supra. With regular cell to cell movement the cursor would not have a half hour position within a cell longer than an half hour. Moreover, the administrative law judge has already rejected construing the term "visual identification" to include a conventional cursor, which utilizes cell-to-cell movement, because the specifications of the '268 and '204 patents specifically disclaimed such movement.

Specifically, the specifications of the '204 and '268 patents state that one of the objects of the inventions disclosed in those patents is "to provide such a user interface having a cursor operation that compensates for an irregular grid format of the television schedule information." (CX-4, col. 2, lns. 37-39). However, the specifications explicitly disclaim any user interface using cell to cell movement within the grid of irregular cells. For instance, in the Background of the Invention section, cell to cell movement is described accordingly:

> If this array is navigated by a cursor that goes from cell to cell, a single cursor command can produce violent screen changes. For example, a cursor right command may cause an abrupt jump to a cell situated several hours from the current page. Not only is this unsettling, but may take considerable effort to recover. Clearly, a gentler cursor motion is needed for the irregular cells found in a grid TV guide.

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(CX-4, col. 2, lns. 8-15). (Emphasis added). Furthermore, under the Detailed Description of the Invention section, cell to cell movement is again dismissed as being unsuitable for use with a grid of irregular cells:

> Because of the widely varying length of cells 26, if a conventional cursor used to select a cell location were simply step from one cell to another, the result would be abrupt changes in the screens 10, 12, 14, 18, and 20 as the cursor moved from a cell 26 of several hours in length to an adjacent cell in the same row. Such abrupt changes disorient a user of the system.

(CX-4, col. 4, lns. 46-52). (Emphasis added)

Therefore, in light of the specification's description of cell to cell movement being "disorient[ing]" and "unsettling," and resulting in "abrupt changes" and "abrupt jumps," as well as "violent screen changes," the administrative law judge finds that such movement was disclaimed by the patentees. [FN17]

Accordingly, based on the foregoing, the administrative law judge finds that the claims in issue require that the "visual identification" be able to be moved within both dimensions of the two dimensional grid guide, in addition to being moved at regular intervals.

4. The program note limitation ('268/'204 Patents)

Claim 1 of the '268 patent requires the display of a "program note overlay including a program description on said television display." Claims 17 and 34 of the '204 patent require the display of "a program note with a program description for the visually identified program," such limitation, according to S-A and EchoStar, requires the "program note overlay" of claim 1. (S-A Post at 148, EPost at 130-31). Complainants argued that the "program note" limitation of these claims should be construed consistent with its ordinary meaning, viz., "a display of graphical or textual information, about a program, that partially or completely covers the video screen." (CPost at 212).

The staff argued that the "term 'overlay' has a number of meanings in the software and user interface area[s], and generally implies something that appears to come up and partially hide what had appeared on the screen previously." (SPost at 34-35).

Respondents argued that the "program note" limitation can only be met by an overlay that is superimposed on top of the grid guide and also, its position on the screen must vary according to the location of the cursor, so as to avoid masking the cursor. (See, e.g., S-A Post at 148-50; PPost at 145-48; EPost at 130-34).

In the Background of the Invention section, the following need is identified:

> Printed grid television schedule guides often include additional information besides the program title and broadcast names. Such grids are also typically provided in combination with a more detailed printed schedule that contains a synopsis of each program, whether the program is a repeat, ratings for movies, and other information. When using a television set as a display for a schedule system, the size and resolution of the television display limit the amount of text that can be displayed with the grid. Improved techniques are required for conveying the most amount [sic] of information to the user in an easily understood manner within the limitations of the television display.

(CX-4, col. 2, lns. 16-27 (Emphasis added)).

Similarly, in the Summary of the Invention section, one of the objects of the invention is described as "to provide such a user interface in which supplemental schedule information is presented in overlays[[FN18]] that obscure a minimum

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amount of useful other information." (CX-4, col. 2, lns. 45- 48). The Detailed Description of the Invention section describes the "overlay" accordingly:

FIG. 6 shows a television schedule grid screen 20 with a program note overlay 52. With limited text capacity on TV displays, it is preferable to display as many lines of TV listings as feasible. To handle program notes, which are text intensive, on-demand overlays 52 are used ....

Program notes for a selected program are overlaid over the grid guide upon request. The program note can be toggled off/on using a SELECT command. The program note 52 overlays and hides 3 or 4 listings of the guide. To minimize concealment of the guide an auto-roving note is used. The program note will overlay either the top half or bottom half of the screen, as necessary to avoid masking the title of the selected screen. If the cursor 32 is in the upper half of the screen, the note will appear in the bottom half, and vice versa. If the cursor 32 is moved to the lower half of the screen the note will automatically position itself in, [sic] the upper half of the screen.

(CX-4, col. 6, lns. 22-52) (Emphasis added). Thus in this section of the specification program note overlays are described as temporarily covering the grid guide. However, as a later section of the specification describing channel grazing overlays makes clear, a program note overlay does not always have to cover the grid guide:

FIGS. 9 and 10 show channel grazing overlays 64 and 66 that provide information on current programs when switching channels while watching television. In the overlay 64, when scanning channels the title of each program is overlaid at 68, along with the name of the TV service (HBO, ABC etc.), the cable channel number, the current date, day of the week, and time in the channel information field 62. The overlay 66 is the same as the overlay 64 except that this overlay includes a program note 70, which is similar to the program note 52 in FIG. 6, but contains information to a program currently being broadcast on the selected channel. To access program notes, press the Select key. In addition to the program note 70, elapsed time is indicated by a percentage calibrated time bar 72. The bar is bracketed by S for start, and F for finish. By default, titles will appear automatically when channels are scanned. Grazing Titles may be de-activated using the CANCEL key. To restore auto-titles, press Select while viewing TV. The flow diagram governing titles/program notes, while viewing TV, is shown in Fig. 11.

(CX-4, col. 7, ln. 56 - col. 8, ln. 8) (Emphasis added). Hence the specification makes clear that the overlay 66 is identical to program note overlay 52 except that it "contains information to a program currently being broadcast on the selected channel," even though the program note displayed as part of the channel grazing overlay was displayed over a broadcast television show and not the grid guide. (Tr. at 3653-54). Therefore, the administrative law judge rejects respondents' and the staff's attempts to limit the "overlay" limitation to require that the program note cover a portion of the grid guide. Instead, the administrative law judge construes this limitation to require merely that the overlay must cover a portion of the screen, irrespective of what is being displayed on the screen.

Furthermore, the administrative law judge rejects respondents' attempts to read the auto-roving feature into the "program note" limitation. Respondents' argued that the auto-roving feature must be read into the claims, because the invention needs this feature in order to accomplish one of the stated objects of the invention, viz., to present additional information about programs by using overlays that obscure a minimum amount of useful information. (EPost at 132). However, even though the specification states that the auto-roving function is used with the overlays to "minimize concealment of the guide" ('204 patent, col. 6, lns. 44-45), such an auto-roving feature would not enable the overlays to better accomplish the stated objective of presenting additional information about programs by using overlays that obscure a minimum amount of useful information. This is because an overlay as described in the specification will always obscure three to four lines

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on a grid guide even if the auto-roving function is used. The auto-roving feature merely causes the overlay to appear (and thereby obscure a portion of the grid guide) on the top or bottom of the grid guide depending on the position of the cursor, whereas a non-auto-roving overlay would appear in the same place every time it is invoked, irrespective of the location of the cursor. Therefore the same amount of information is obscured whether an auto-roving or a non-auto-roving overlay is used. Moreover, the program notes displayed as part of the channel grazing overlays do not exhibit any auto-roving capability (Tr. at 4068-69), even though such program notes would be subject to the same over all objective of presenting additional information about programs by using overlays that obscure a minimum amount of useful information.

Accordingly, the administrative law judge construes "program note" limitation of claim 1 of the '268 patent and claims 17 and 34 of the '204 patent as to require only the use of overlays that are invoked on demand, but does not require the overlays to be auto-roving or to appear over part of the grid guide.

5. The language "tuning a programmable tuner to a select channel based on position of said visual identification" ('204 patent)

Claim 31 of the '204 patent recites "tuning a programmable tuner to a select channel based on position of said visual identification" as an element. Respondents argued that this limitation "requires that the channel changes in response to movement of the visual identification without further user input, i.e., without pressing the select button." (RFF 1521). Complainants argued that this limitation can be met even if the select button had to be used as the final step to cause the tuner to tune to the selected channel. (CORFF 1521 et seq.)

The administrative law judge rejects respondents' proposed construction. The plain language of the limitation is in no way inconsistent with a system or a process in which the user can move a cursor to highlight cell on a grid guide corresponding to a television show and then press the SELECT button to cause the tuner to tune to the selected program. In such a system or process the tuner would still be tuning to a particular channel based on the position of the cursor. Respondents claim that the prosecution history supports their proposed construction, yet they are only able to cite to the language of proposed claim 229 which was introduced in the Supplemental Amendment of March 21, 1995. While applicant's remarks accompanying the Supplemental Amendment make it clear that proposed claim 229 had a limitation which required that the tuner to automatically tune to a particular channel, solely because of the placement of the cursor (RX 3011 at 423), proposed claim 229 did not develop into claim 31 and the wording of the limitation of proposed claim 229 is markedly different from that of the corresponding limitation of claim 31. [FN19]

VI. INFRINGEMENT

Complainants have the burden of proving, by a preponderance of the evidence, that the claims in issue are infringed by the accused set-top boxes. See, e.g., Conroy v. Reebok International, Ltd., 14 F.3d 1570, 1573 (Fed. Cir. 1994); Braun Inc. v. Dynamics Corp., 975 F.2d 815 (Fed. Cir. 1992); Chisum, § 18.06(1). To find infringement, the accused set-top boxes must meet each claim limitation, either literally or under the doctrine of equivalents. Charles Greiner & Co. v. Mari-med Mfg. Inc., 962 F.2d 1031, 1034 (Fed. Cir. 1992). Literal infringement requires that every limitation of the claim be found in the accused set-top boxes, exactly. Southwall Techs., Inc. v. Cardinal IG Co., 54 F.3d 1570, 1575 (Fed. Cir.), cert. denied, 116 S. Ct. 515 (1995).

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A device that does not literally infringe a claim can infringe under the doctrine equivalents. [FN20] The "doctrine of equivalents" prevents an accused patent infringer from avoiding liability for infringement by changing only minor or insubstantial details of a claimed invention while retaining the invention's essential identity. Festo Corp. v. Shoketsu Kinzoku Kogyo Mabashihi Co., 234 F.3d 558. (Fed. Cir. 2000), vacated, Slip op., 535 U.S., 2002 WL 1050479 (May 28, 2002).

A. '121 Patent

1. Pioneer

Complainants argued that they have established that the accused Pioneer devices infringe claims 18, 19, 20, 21, 22, 23, 24, 26, 27, 28, 31, 33, 36, 42, 43, 48, 50, 54, 57, 59, 60, 61 and 66 of the '121 patent. Each of the staff and Pioneer argued that complainants have not met their burden.

a. Independent Claim 18 And Dependent Claims 19-24, 26-28 And 31

{* * *}
Moreover, the administrative law judge finds that the Pioneer set-top boxes do not "combin[e] said user selection criteria" as required by claim 18. The Pioneer IPG has three modes of operation: Time View, Theme View and Title View. The administrative law judge finds that none of these modes of operation allows a user to "combin[e] said user selection criteria." The Time View of Passport software is the initial mode of the Pioneer IPG and displays a grid television guide that is just like a newspaper TV guide. (Krakirian, Tr. at 2970-2971, 2890). Specifically, the left hand column of the grid television guide provides a list of channels offered by the cable provider, while the top column lists the time in half increments. Titles of programs are contained in cells in the grid, corresponding to the appropriate scheduled channel and time of broadcast. This channel list is preset and pre-ordered by the cable operator. (Krakirian, Tr. at 2890; RX-4500A, slide/video segment 5).

A user of Passport software cannot change the sequence or order of the preset channel line up. (Krakirian, Tr. at 2890; RX-4500A, slide/video segment 5). All that a user may do in the Time View is browse the preset channel list that is automatically called up by the Passport software in response to the user pressing the "GUIDE" button, by using the page up or down keys or by using the up or down directional arrow keys. (Krakirian, Tr. at 2970-2971). The grid shifts along the appropriate axis and in the appropriate direction, each time one of these buttons are used. For example, when the user presses the left or right arrow key, the grid shifts along the time axis and a new grid is displayed with a new half-hour column replacing one of the original columns. (CX-2367). Alternatively, the user can press the fast forward or fast rewind key, causing a new grid to be shifted 4 hours forward or backward, respectively, along the time axis. (CX-2303).

However, the user cannot change the way the initial Time View is displayed. (Krakirian, Tr. at 2890). For example, the user may not specify a particular time range or channel range to display on the grid, as the Passport software controls what part of the channel list and time range will be displayed. (Krakirian, Tr. at 2970-2971). Also, a user cannot enter commands to cause only particular channels to be contained in the list shown in the left hand column of the grid guide. (Krakirian, Tr. at 2892; RX-4500A, slides/video segments 5 & 6).

The administrative law judge finds that no combining as that term was construed with relation to claim 18 occurs in Pioneer's Time View. As required by claim 18, the Time View mode does not allow the user to enter a plurality of criteria, which

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are then used to select only those programs that meet the combined criteria, so that only those programs are displayed to the user. The administrative law judge finds that the navigation that occurs in the Time View grid guide by browsing does not utilize combining of search criteria within the meaning of claim 18, as a user cannot cause the IPG to present to him particular programing that occurs at a particular time or on a particular channel. Instead, the Pioneer IPG merely allows the user to browse through the grid guide, either cell by cell or four hour time interval by four hour interval, to find for himself the channel or time range that he is interested in. The user must browse through the entirety of the information to find desired programs just like one browses through the pages of a printed television guide. (Rhyne, Tr. at 3577-78; Krakirian, Tr. at 2970-71). Thus the administrative law judge finds that in the accused Pioneer set-top boxes, there is no way for the user to reduce the number of programs that are presented to the user in Time View, which is in conflict with the purpose of the '121 patent. As testified by Faillace, complainants' expert witness, the purpose of the '121 patent is to provide database techniques to take a vast sea of program schedule information, cut it down to size, and enable the user to focus just on those programs most likely to be of interest to him or her, so that instead of looking at thousands of descriptions of programs, the user would be looking at just a handful of programs, in order to be able to make an educated choice. (Faillace, Tr. at 1150). Faillace's testimony is supported by the specification which states in the Background of the Invention section that "[i]t would be desirable for a user to be able to reduce the number of such listings to be consulted in making a program selection." ('121 patent, col. 2, ll. 63-65). The specification provides further that:

Because the system will search through a volume of schedule information to find programs meeting the viewer's selection criteria, the program selection is much easier and more rapid with the system of this invention than with manual selection. By way of example, the system can be used to select satellite programs from a larger list of satellite programs by user selected satellite symbols, such as Fl or AB, to be displayed by the scheduler, eliminating most of the program listings which are of no value to the viewer. Similarly, for users without special decryption service, the system will remove from display those satellite listings which are of no value to the viewer because they are encrypted.
(col. 5, lns. 23-36) (Emphasis added). Therefore, the administrative law judge finds that "combining" of selection criteria as required by claim 18 does not occur in the IPG's Time View mode of Pioneer.

The administrative law judge further finds that the use of the Pioneer set-top boxes' Theme View or Title View modes does not satisfy the combining limitation of claim 18, as no combining at all occurs in either the Passport's Theme View or Title View as the user selects one criterion (an initial letter of a program's title or a single theme) and the system presents the user with a list of program's meeting that criterion, and whereupon the user must scroll through the list to find the desired program. For instance, once in the Time View, a user may switch to the Theme View by pressing the "B" button on the remote control. (Krakirian, Tr. at 2893; RX-4500A, slide/video segment 7). There is no way, however, that a user of Passport software may enter the Theme View without first entering the Time View. (Krakirian, Tr. at 2894; RX-4500A, slide/video segment 7). Similar to the operation of Theme View, once in the Time View, a user may switch to the Title View by pressing the "C" key. (CX-2336; CX-8006). However, there is no way that a user of Passport software may enter the Title View without first entering the Time View by pressing the "Guide" key. (Krakirian, Tr. 2894). On the left side of the screen in Title View, a list of characters appears from which a user may choose the initial character of a title. (Faillace, at Tr. 2265; RX-8006; CX-2336). With Passport software, the user can only select only one initial character while in Title View. (Faillace, Tr. at 2267-2268; RX-8007; RX-8008). The system will then find all the

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programs having the initial letter that the user selected and will present the user with a list of programs beginning with that letter along with the programs' scheduled broadcast dates, times and channels. (RX-8006; RX-8007; RX-8008). In Title View, the user cannot combine a title search with an interval of time, but must rather navigate up and down the list of programs presented as beginning with the initial letter selected by the user. (Tr. at 3577).

The Pioneer Passport software's Theme View operates the same way as the Title View except the user is selecting a theme instead of an initial character. (Krakirian, Tr. at 2895). In the Passport software's Theme View, the user may apply only one theme at a time and may not combine a theme with an interval of time. (Rhyne, Tr. at 3575-3572; RX-4747.93). The user may only navigate up or down the list of programs by scrolling through the list. (Rhyne, Tr. at 3576- 77; RX-4747.93). Therefore, no combining at all occurs in either the Passport's Theme View or Title View as the user selects one criterion (an initial letter of a program's title or a single theme) and the system presents the user with a list of program's meeting that criterion, and whereupon the user must scroll through the list to find the desired program.

The administrative law judge further finds that Pioneer's Passport software does not store the title of selected programs as required by claim 18. (Krakirian, Tr. at 2899-01). From any of the three views (Time, Theme or Title) the user may press the "SELECT" button. (Krakirian, Tr. at 2899-2900). If the highlight is on a cell corresponding to a program being currently broadcast, the Passport software will select the channel for the highlighted row, take the viewer to that service and allow the viewer to watch the selected program. The Passport software will then store the channel, but not the title, of the program that the viewer selected. (Krakirian, Tr. at 2899-2901). If the user presses "SELECT" and the highlight is within a column for a future time, Passport software will ask whether the user wishes to manually select the service for the highlighted position or set a timer so that the user may, at a future time, record or be reminded to view the service corresponding to the scheduled program that is highlighted. (Krakirian, Tr. at 2899). If the user elects to set an event timer, Passport software will set a timer that causes the software to take future action. (Krakirian, Tr. at 2900). {* * *} {* * *}

Based on the foregoing the administrative law judge finds that the accused Pioneer set-top boxes do not infringe independent claim 18 and dependent claims 19-24, 26-28 and 31.

b. Independent Claim 33

The administrative law judges finds that the accused Pioneer devices do not infringe independent claim 33. For the same reasons that he found that the accused Pioneer devices do not store schedule information in the CPU, do not have a storage means, and do not combine user selection criteria in relation to claim 18, he finds that the accused devices lack these features and functions in relation to claim 33. See supra. The administrative law judge further finds that the accused Pioneer devices are incapable of "turning on" a VCR within the meaning of claim 33, i.e., to cause electricity to be supplied to it. The Pioneer set-top boxes, when fitted with an "IR Blaster", an optional accessory, can cause a VCR that is already turned on to start to recording a selected channel. (Tr. at 2255-57). However the Pioneer set-top boxes cannot turn power on for a VCR that is turned off. (Tr. at 1471-72, 3635).

Based on the foregoing, the administrative law judge finds that the accused Pioneer set-top boxes do not infringe independent claim 33.

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c. Independent Claim 36

The administrative law judges finds that the accused Pioneer devices do not infringe independent claim 36. For the same reasons that he found that the accused Pioneer devices do not store schedule information in the CPU, do not have a storage means, do not combine user selection criteria and do not store the titles of selected programs in relation to claim 18, he finds that the accused devices lack these features and functions in relation to claim 36. See supra. Additionally, for the same reason that he found that the accused Pioneer devices cannot turn on a VCR in relation to claim 33, he finds that the Pioneer devices are incapable of performing that function in relation to claim 36.

d. Independent Claim 42 And Dependent Claims 43, 48, 49 And 50

The administrative law judge finds that the accused Pioneer devices do not infringe independent claim 42 and dependent claims 43, 48, 49 and 50. For the same reasons that he found that the Pioneer devices did not satisfy the "storage means" limitation of claim 18, he finds that the Pioneer devices do not satisfy the "storage means" limitation of claim 42 and the claims depending therefrom.

The administrative law judge further finds that the accused Pioneer devices do not have the first input means required by claim 42 and the claims that depend from it. As found in the claim construction section, supra, the "first input means" is a means plus function element and the corresponding structures comprise either (1) an FM antenna, an FM receiver, a SCA subcarrier decoder, and data demodulator or (2) an antenna, a programmable tuner, a program data timing controller and a data demodulator; or (3) their 35 U.S.C. § 112, ¶ 6 equivalents. {* * *} {* * *}

It is undisputed that the digital technologies used by Pioneer's set-top boxes were developed after the issuance of the '121 patent. (Tr. at 1193-94, 1662-3). [FN21] Thus the digital technology relied upon by Pioneer cannot be a 35 U.S.C. § 112, ¶ 6 equivalent to the "first input means" because it was developed after the issuance of the '121 patent. As the Federal Circuit stated in Al-Site Corp. v. VSI International, Inc., 174 F.3d 1308, 1320 (Fed. Cir. 1999)

> As this court has recently clarified, a structural equivalent under § 112 must have been available at the time of the issuance of the claim. See [Chiuminatta Concrete Concepts, Inc. v. Cardinal Indus., Inc., 145 F.3d 1303, 1310 (Fed. Cir. 1998).] An equivalent structure or act under § 112 cannot embrace technology developed after the issuance of the patent because the literal meaning of a claim is fixed upon its issuance. An "after arising equivalent" infringes, if at all, under the doctrine of equivalents. See [Warner-Jenkinson Co. v. Hilton Davis Chem. Co., 117 S.Ct. 1040, 1052 (1997);] Hughes Aircraft Co. v. U.S., 140 F.3d 1470, 1475, 46 U.S.P.Q.2d 1285, 1289 (Fed. Cir. 1998). .... In other words, an equivalent structure or act under § 112 for literal infringement must have been available under the doctrine of equivalents may arise after patent issuance and before the time of infringement. See Warner-Jenkinson, 117 S.Ct. at 1053.

The administrative law judge further finds that the accused Pioneer devices do not have a a "selectable display", in which the initial display comprises information selected by the data processor in response to the user inputs, as well as either the current channel that the television is tuned to or the current time. With the accused Pioneer devices, the user has no ability to select the way the initial Time View is displayed. No larger or smaller time interval than the one-and-a-half hours time period can be displayed on the Time View's grid guide in the horizontal dimension. (Krakirian, Tr. 2891; RX-4500A, slide/video segment 5). Furthermore, the Pioneer set-top boxes do not allow a user to store a user selected

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set of preferred themes that can be activated or deactivated by the user and therefore the user cannot have the Time View show only those programs coming within certain themes. (Krakarian, Tr. at 2893-95). Also, a user cannot enter commands to cause only particular channels to be listed.

Accordingly, based on the foregoing, the administrative law judge, finds that accused Pioneer devices do not infringe independent claim 42 and dependent claims 43, 48, 49 and 50.

e. Independent Claim 54

The administrative law judge finds that the accused Pioneer devices do not infringe independent claim 54. For the same reasons that he found that the Pioneer devices did not satisfy the "storage means" limitation of claim 18, he finds that the Pioneer devices do not satisfy the "storage means" limitation of claim 54. Furthermore, he finds that the Pioneer products at issue do not have the 35 U.S.C. § 112, ¶ 6 corresponding structures for the "means connected between said programmable tuner and said data processor for separating the broadcast schedule information from the broadcast programs and supplying the broadcast schedule information to said data processor."

Complainants argued that "[t]he separating means in all the accused devices is the{* * *}

Based on the foregoing, the administrative law judge finds that the accused Pioneer devices do not infringe independent claim 54.

f. Independent Claim 57 And Dependent Claims 59, 60 And 61

The administrative law judge finds that the accused Pioneer devices do not infringe independent claim 57 and dependent claims 59, 60 and 61. For the same reasons that he found that the Pioneer devices did not satisfy the "storage means" limitation of claim 18, he finds that the Pioneer devices do not satisfy the "storage means" limitation of claim 57. For the same reasons that he found that the Pioneer devices did not satisfy the "separating means" limitation of claim 54, he finds that the Pioneer devices do not satisfy the "separating means" limitation of claim 57. Furthermore, for the same reason that he found that Pioneer products did not satisfy claim 42's "selectable display" limitation he finds that they do not satisfy claim 57's selectable display limitation.

Based on the foregoing, the administrative law judge finds that the accused Pioneer devices do not infringe independent claim 57 and dependent claims 59, 60 and 61.

g. Independent Claim 66

The administrative law judge finds that the accused Pioneer devices do not infringe independent claim 66. For the same reasons that he found that the accused Pioneer devices do not store schedule information in the CPU, do not have a storage means, and do not combine user selection criteria in relation to claim 18, he finds that the accused devices lack these features and functions in relation to claim 66. See supra. Accordingly, the accused Pioneer devices do not infringe independent claim 66.

2. EchoStar

Complainants argued that they have established that the accused EchoStar devices

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infringe claims 18, 19, 20, 21, 22, 23, 24, 26, 27, 28, 31, 32, 36, 54, 57, 58, 59, 60, 61 and 66 of the '121 patent. Each of the staff and EchoStar argued that complainants have not met their burden of proving infringement of these claims.

a. Independent Claim 18 And Dependent Claims 19-24, 26-28 And 31

{* * *}
The administrative law judge also finds that the accused EchoStar devices do not have the storage means required by claim 18 and the claims depending from it. {* * *} {* * *} {* * *}

After the accused EchoStar set-top boxes display screenful of events satisfying the user selected theme, the user can scroll down the list of selected programs. (CX-2326 et seq., Tr. at 1320-21). When the user scrolls past the last program listed on the screen, the system can display additional events beyond those displayed in the initial screen that match the selected theme{* * *}

While, the accused EchoStar devices allow a user to set the set-top boxeses to display only those programs that are to be broadcast on certain channels, (Tr. at 1323), such combining is logical "OR" combining, as the set-top boxes displays all of the programs that occurr on any of the selected channels, instead of displaying only programs that occur on all of the selected channels, as would be the case with logical "AND" combining. As found in the claim construction section, supra, the "combining" limitation requires that the set-top boxes perform both logical "OR" and logical "AND" combining. Therefore, the set-top boxes's ability to display the programs scheduled to be broadcast on selected channels does not satisfy the combining limitation.

The administrative law judge further finds that the accused EchoStar set-top boxeses{* * *} {* [FN22] * *}

Based on the foregoing, the administrative law judge finds that complainants have failed to meet their burden of proving that the accused EchoStar devices infringe independent claim 18 and dependent claims 19-24, 26-28 and 31 of the '121 patent.

b. Independent Claim 32

The administrative law judge finds that complainants have not met their burden of proving that the accused EchoStar devices infringe claim 32 of the '121 patent. {* * *}as required by claim 32.

c. Independent Claim 36

The administrative law judges finds that the accused EchoStar devices do not infringe independent claim 36. For the same reasons, supra, that he found that the accused EchoStar devices{* * *}he finds that the accused devices lack these features and functions with respect to claim 36. Additionally, complainants admitted that the EchoStar devices cannot power on a VCR as is required by independent claim 36.

Based on the foregoing, the administrative law judge finds that complainants have failed to meet their burden of proving that the accused EchoStar devices infringe claim 36.

d. Independent Claim 54

The administrative law judge finds that complainants have not met their burden in

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establishing that the accused EchoStar devices infringe independent claim 54. For the same reasons that he found that the EchoStar devices{* * *}

{* * *}
{* * *}As stated above, in connection with the accused Pioneer products in relation to claim 42, {* * *}

Based on the foregoing, the administrative law judge finds that the accused EchoStar devices do not infringe independent claim 54.

e. Independent Claim 57 And Dependent Claims 58, 59, 60 And 61

The administrative law judge finds that complainants have not met their burden in establishing that the accused EchoStar devices infringe independent claim 57 and dependent claims 58, 59, 60 and 61. For the same reasons that he found that the accused EchoStar devices{* * *}Moreover, for the same reasons that the administrative law judge found that the EchoStar devices{* * *}

Based on the foregoing, the administrative law judge finds that the accused EchoStar devices do not infringe independent claim 57 and dependent claims 58, 59, 60 and 61.

f. Independent Claim 66

The administrative law judge finds that complainants have not met their burden in establishing that the accused EchoStar devices infringe independent claim 66. For the same reasons that he found that the accused EchoStar devices { * * *}he finds that the accused devices lack these features and functions in relation to claim 66. See supra. Accordingly, the accused EchoStar devices do not infringe independent claim 66.

3. S-A

Complainants argued that they have established that the accused S-A devices infringe claims 18, 19, 20, 21, 22, 23, 24, 26, 27, 28, 31, 33, 36, 42, 43, 48, 49, 50, 51, 54, 57, 59, 60, 61 and 66 of the '121 patent. Each of the staff and S-A argued that complainants have not met their burden.

a. Independent Claim 18 And Dependent Claims 19-24, 26-28 And 31

{* * *} {* * *}The grid shows a screen of five predetermined channels over an hour and a half time interval. (Rhyne, Tr. at 3581-82; 3587). A user can cause the grid to shift along its time axis or its channel axis by using directional arrows. (Rhyne, Tr. at 3581-82; 3587). As found with respect to Pioneer, supra, such navigation does not constitute "combining."

Moreover, the S-A Standard Guide only allows the user to select from the stored presorted relational database of IPG data by date or based on one theme or based on the first character of a program title. (RX-474.91; RX-4747.88C; Rhyne Tr. at 3577; 3587-91; JX-12C at 556-61, 572, 626-28, 930-42). The theme and title-character search can neither be combined nor applied successively to create a subset listing only programs with the selected theme and title character. (RX-4747.91, Rhyne, Tr. at 3575-77). Thus, in the accused S-A products having the Standard Guide, only a single selection criterion can be used at a time. For example, the Theme, Title, or Date View uses only a single criterion. The date key can be used following the Theme View or Title View key to display only those programs with the selected theme or initial letter of their title and are scheduled to be broadcast on the selected

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date. (Rhyne, Tr. at 3588 and 3590-91; RX-4747.88; RX-4747.91; JX-62C at 272-73, 276- 77, 281-82). However, the administrative law judge finds that this does not satisfy the "combining" limitation of claim 18, as Young had specifically disclaimed sequential, hierarchal searches. See, supra.

The S-A Flex Guide does not allow the user to select from the stored IPG data based on the first character of a program title, date or theme. (Durden, Tr. at 2791; JX-12C at 10531-54; JX-49C at 106). In the accused S-A Flex Guide, the administrative law judge finds that the Time View displays a grid guide that is just like a newspaper TV guide. The Time View allows a user to scroll through pages of the grid guide and browse through the schedule information. (Rhyne, Tr. at 3582-83, 3587). The user may not specify a particular time range or channel range to display. (RX-4747.57; Rhyne, Tr. at 3537-38, 3622-23, 3631). Rather, the S-A Flex Guide determines what part of the channel list and time range will be first displayed. (Durden, Tr. at 2755). Once the Time View is chosen and displayed, the user can only browse through a preset channel line up and preset sequential time range. (Rhyne, Tr. at 3582-83). The user of the S-A Flex Guide may not change the sequence of channels or sequence of times displayed, as these have been preset. (Rhyne, Tr. 3582-83). The user may page up or down one screen of pre-set channels at a time using page keys, may use directional arrow keys to scroll the grid up or down one channel row at a time along the pre-set channel list, and may use directional arrow keys to scroll the grid forward or backwards in thirty-minute intervals. (JX-12C at 554-556; Durden, Tr. at 2757-2758). Also a user cannot enter commands to cause only particular channels to be contained in the list shown in the left hand column of the grid guide. (Rhyne, Tr. at 3583). After the S-A Flex Guide is opened to the Time View the user's interaction with the Time View is limited to using the directional keys on the remote control to scroll the grid forward or backwards in half-hour increments. (Rhyne, Tr. at 3575-76, 3583, 3587; RX-4747.91). A user of the S-A Flex Guide cannot enter commands that allow the user to view programs that are on at a particular time without having to use the directional arrow keys, the page button, or the "C" button to scroll to the desired time. (Rhyne, Tr. 3575-76, 3583, 3587; RX-4747.91). In the S-A Standard Guide's Title View, the user may not combine a title with a user-specified interval of time. The user may only navigate up or down the list of programs having the same user selected initial character of the title. (RPX-99, clips 24 and 25). Therefore, the administrative law judge finds that the accused S-A products do not satisfy the "combining" limitation of claim 18. Moreover, the administrative law judge finds that the accused S-A products do not store titles of selected programs as required by claim 18. (FF 187, 188).

Based on the foregoing, the administrative law judge finds that the complainants have failed to meet their burden of proving that the accused S-A products infringe independent claim 18 and dependent claims 19-24, 26-28 and 31.

b. Independent Claim 33

The administrative law judges finds that complainants have not satisfied their burden in establishing that the accused S-A devices infringe independent claim 33. For the same reasons, supra, that he found that{* * *}See supra.

Based on the foregoing, the administrative law judge finds that the accused S-A set-top boxes do not infringe independent claim 33.

c. Independent Claim 36

The administrative law judges finds that complainants have not met their burden in establishing that the accused S-A devices infringe independent claim 36. For the

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same reasons that he found that the accused S-A devices{* * *}and functions in relation to claim 36.

d. Independent Claim 42 And Dependent Claims 43, 48, 49 And 50

The administrative law judge finds that complainants have not met their burden in establishing that the accused S-A devices infringe independent claim 42 and dependent claims 43, 48, 49 and 50. For the same reasons that he found that the S-A devices did not satisfy the "storage means" limitation of claim 18 supra, he finds that the S-A devices do not satisfy the "storage means" limitation of claim 42 and the claims depending therefrom.

The administrative law judge further finds that complainants have not met their burden in establishing that the accused S-A devices{* * *}As found in the claim construction section, supra, the "first input means" is a means plus function element and the corresponding structures comprises either (1) an FM antenna, an FM receiver, a SCA subcarrier decoder, and data demodulator or (2) an antenna, a programmable tuner, a program data timing controller and a data demodulator; or (3) their 35 U.S.C. § 112, ¶ 6 equivalents. {* * *}

Furthermore, the administrative law judge finds that the S-A products { * * *} {* * *}The Time View of the S-A products displays a grid television guide that is just like a newspaper TV guide. (Rhyne, Tr. at 3582-83, 3587). The user may not specify a particular time range or channel range to display. (RX-4747.57; Rhyne, Tr. at 3537-38, 3622-23, 3631). Rather, the S-A guide mandates what part of the channel list and time range that will first be displayed. (Durden, Tr. at 2755). {* * *} (Rhyne, Tr. at 3575-76, 3583, 3587). The user of an S-A guide has no ability to change the displayed channels or the ordering of the channels. (Rhyne, Tr. at 3575-76, 3583, 3587). Nor can a user enter commands to cause only particular channels to be contained in the list shown in the left hand column of the grid guide. (Rhyne, Tr. at 3583).

Accordingly the administrative law judge finds that the accused S-A products do not infringe independent claim 42 and dependent claims 43, 48, 49 and 50.

e. Independent Claim 51

The administrative law judge finds that complainants have not met their burden in establishing that the accused S-A devices infringe independent claim 51. For the same reasons that he found that the accused S-A devices do not have a storage means in relation to claim 18, supra, and do not have the "first input means" and a "selectable display" as required by claim 42, supra, he finds that the accused devices lack these features and functions in relation to claim 51. Accordingly, the accused S-A devices do not infringe independent claim 51.

f. Independent Claim 54

The administrative law judge finds that complainants have not met their burden in establishing that the accused S-A devices do not infringe independent claim 54. For the same reasons that he found that the S-A devices did not satisfy the "storage means" limitation of claim 18, he finds that the S-A devices do not satisfy the "storage means" limitation of claim 54. Furthermore, he finds that the S-A products at issue{* * *}

{* * *}Therefore, the administrative law judge finds that the SA devices do not have the means for separating required by claim 54.

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g. Independent Claim 57 And Dependent Claims 59, 60 And 61

The administrative law judge finds that complainants have not met their burden in establishing that the accused S-A devices infringe independent claim 57 and dependent claims 59, 60 and 61. For the same reasons that he found that the S-A devices did not satisfy the "storage means" limitation of claim 18, he finds that the S-A devices do not satisfy the "storage means" limitation of claim 57. For the same reasons that he found that the S-A devices did not satisfy the "separating means" limitation of claim 54, he finds that the S-A devices do not satisfy the "separating means" limitation of claim 57. Furthermore, for the same reason that he found that S-A products did not satisfy claim 42's "selectable display" limitation he finds that they do not satisfy claim 57's selectable display limitation.

Based on the foregoing, the administrative law judge finds that the accused S-A devices do not infringe independent claim 57 and dependent claims 59, 60 and 61.

h. Independent Claim 66

The administrative law judge finds that complainants have not met their burden in establishing that the accused S-A devices infringe independent claim 66. For the same reasons that he found that the accused S-A devices{* * *}in relation to claim 18, supra, he finds that the accused devices lack these features and functions in relation to claim 66. Accordingly, the accused S-A devices do not infringe independent claim 66.

B. '268/'204 Patents

I. Pioneer

Complainants argued that they have established that the accused Pioneer products infringe claims 1 and 3 of the '268 patent and claim 14, 15, 16, 17, 31, 32, 33 and 34 of the '204 patent. Each of Pioneer and the staff argued that complainants have not met their burden.

a. Independent Claim 1 And Dependent Claim 3 Of The '268 patent.

The administrative law judge finds that complainants have not met their burden of proving that the accused Pioneer products practice independent claim 1 and dependent claim 3 of the '268 patent. {* * *} {* * *}

Furthermore, the administrative law judge finds that the accused Pioneer products do not have a cursor that exhibits the movement required by the claims. {* * *}In the claim construction section, the administrative law judge found that the cursor must be able to be moved in regular intervals, and it must also be able to be moved within the grid guide. See supra. The cursor of the Pioneer products cannot be moved within the grid guide and do not move in regular intervals and therefore do not meet this limitation.

The administrative law judge further finds that the accused Pioneer products do not have the required innovative cursor. Instead, the Pioneer cursor is uniformly black and fills the entire cell, irrespective of the length of the cell. (Tr. at 2918, RX-4500).

Based on the foregoing, the administrative law judge finds that complainants have not met their burden of proving that the accused Pioneer products infringe claims 1 and 3 of the '268 patent.

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b. Independent Claim 14 And Dependent Claims 15, 16 And 17 Of The '204 Patent

The administrative law judge finds that complainants have not met their burden of proving that the accused Pioneer products infringe independent claim 14 and dependent claims 15, 16, and 17 of the '204 patent. For the same reasons that the administrative law judge found that the Pioneer products did not satisfy the "means ... for displaying" limitation, the innovative cursor requirement, or the movement limitation in relation to claims 1 and 3 of the '268 patent, he finds that the Pioneer products do not meet these limitations in relation to claim 14, 15, 16, and 17 of the '204 patent.

Based on the foregoing, the administrative law judge finds that complainants have not met their burden of proving that the accused Pioneer products infringe independent claim 14 and dependent claims 15, 16, and 17 of the '204 patent.

c. Independent Claim 31 And Dependent Claims 32, 33 And 34 Of The '204 Patent

The administrative law judge finds that complainants have not met their burden of proving that the accused Pioneer products infringe independent claim 31 and dependent claims 32, 33 and 34 of the '204 patent. For the same reasons that the administrative law judge found that the Pioneer products did not satisfy the innovative cursor requirement, or the movement limitation in relation to claims 1 and 3 of the '268 patent, he finds that the Pioneer products do not meet these limitations in relation to claims 31, 32, 33 and 34 of the '204 patent.

Based on the foregoing, the administrative law judge finds that complainants have not met their burden of proving that the accused Pioneer products infringe independent claim 31 and dependent claims 32, 33, and 34 of the '204 patent.

2. S-A

Complainants argued that they have established that the accused S-A products infringe claims 1 and 3 of the '268 patent and claim 14, 15, 16, 17, 31, 32, 33 and 34 of the '204 patent. Each of S-A and the staff argued that complainants have not met their burden.

a. Independent Claim 1 And Dependent Claim 3 Of The '268 patent.

The administrative law judge finds that complainants have not met their burden of proving that the accused S-A products practice independent claim 1 and dependent claim 3 of the '268 patent. {* * *}the administrative law judge finds that complainants have not met their burden of showing that the accused S-A products meet the "means ... for displaying" limitation.

Furthermore, the administrative law judge finds that the accused S-A products do not have a cursor that exhibits the movement required by the claims in issue. {* [FN23] * *}Therefore, for the same reasons that the administrative law judge found that the Pioneer products did not satisfy the movement limitation, the administrative law judge finds that the accused S-A products do not satisfy the movement limitation. Complainants argued that the cursor in the S-A products still exhibited the movement required by claims 1 and 3 of the '268 patent as the cursor "mov[ed] from one cell to another". (CRRFF 2615.10). However, even if the administrative law judge were to accept complainants' argument that the cursor in the accused S-A products moves from one cell to another, such movement is still insufficient to satisfy the movement limitation of the asserted claims. In the claim construction section, the administrative law judge found that the claims require that the cursor move at regular time intervals and it must also be able to

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be moved within the grid guide. See supra. The cursor of the S-A products does not move at regular time intervals and cannot be moved within the grid guide and therefore does not satisfy the movement limitation.

The administrative law judge further finds that the accused S-A products do not have the required innovative cursor. Instead, the S-A cursor is uniformly black and fills the entire cell, irrespective of the length of the cell. (Tr. at 3657-58, RX-4748.10).

Based on the foregoing, the administrative law judge finds that complainants have not met their burden of proving that the accused S-A products infringe claims 1 and 3 of the '268 patent.

b. Independent Claim 14 And Dependent Claims 15, 16 And 17 Of The '204 Patent

The administrative law judge finds that complainants have not met their burden of proving that the accused S-A products infringe independent claim 14 and dependent claims 15, 16, and 17 of the '204 patent. For the same reasons that the administrative law judge found that the S-A products did not satisfy the "means ... for displaying limitation", the innovative cursor requirement, or the movement limitation in relation to claims 1 and 3 of the '268 patent, he finds that the S-A products do not meet these limitations in relation to claim 14, 15, 16, and 17 of the '204 patent.

Based on the foregoing, the administrative law judge finds that complainants have not met their burden of proving that the accused S-A products infringe independent claim 14 and dependent claims 15, 16, and 17 of the '204 patent.

c. Independent Claim 31 And Dependent Claims 32, 33 And 34 Of The '204 Patent

The administrative law judge finds that complainants have not met their burden of proving that the accused S-A products infringe independent claim 31 and dependent claims 32, 33 and 34 of the '204 patent. For the same reasons that the administrative law judge found that the S-A products did not satisfy the the innovative cursor requirement or the movement limitation in relation to claims 1 and 3 of the '268 patent, he finds that the S-A products do not meet these limitations in relation to claims 31, 32, 33 and 34 of the '204 patent.

Based on the foregoing, the administrative law judge finds that complainants have not met their burden of proving that the accused S-A products infringe independent claim 31 and dependent claims 32, 33, and 34 of the '204 patent.

3. EchoStar

Complainants' argued that they have established that the accused EchoStar products infringe claims 1 and 3 of the '268 patent and claim 14, 15, 16, 17, 31, 32, 33 and 34 of the '204 patent. Each of EchoStar and the staff argued that complainants have not met their burden.

a. Independent Claim 1 And Dependent Claim 3 Of The '268 Patent.

The administrative law judge finds that complainants have not met their burden of proving that the accused EchoStar products practice independent claim 1 and dependent claim 3 of the '268 patent. The accused EchoStar products, like the accused Pioneer and S-A products, do not have a{* * *}as required by the "means ... for displaying" limitation. (Tr. at 3142). {* * *}Therefore, the administrative law judge finds that complainants have not met their burden of showing that the accused

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EchoStar products meet the "means ... for displaying" limitation.

The administrative law judge further finds that the accused EchoStar products do not have the required innovative cursor. Instead, the EchoStar cursor is uniformly black and highlights the entire cell, irrespective of the length of the cell. (Tr. at 3988-89, RX-7483). Moreover, the administrative law judge finds that the accused EchoStar products do not satisfy the movement limitation. The cursor in the EchoStar products do not move in equal time increments. (Tr. at 3989-90). Instead, the cursor moves cell to cell until it reaches the edge of the screen, where upon it starts moving in half hour increments. (Tr. at 3989-90).

Based on the foregoing, the administrative law judge finds that complainants have not met their burden of proving that the accused EchoStar products infringe claims 1 and 3 of the '268 patent.

b. Independent Claim 14 And Dependent Claims 15, 16 And 17 Of The '204 Patent

The administrative law judge finds that complainants have not met their burden of proving that the accused EchoStar products infringe independent claim 14 and dependent claims 15, 16, and 17 of the '204 patent. For the same reasons that the administrative law judge found that the EchoStar products did not satisfy the "means ... for displaying limitation, the movement limitation or the innovative cursor requirement in relation to claims 1 and 3 of the ' 268 patent, he finds that the EchoStar products do not meet these limitations in relation to claim 14, 15, 16, and 17 of the '204 patent.

Based on the foregoing, the administrative law judge finds that complainants have not met their burden of proving that the accused EchoStar products infringe independent claim 14 and dependent claims 15, 16, and 17 of the ' 204 patent.

c. Independent Claim 31 And Dependent Claims 32, 33 And 34 Of The '204 Patent

The administrative law judge finds that complainants have not met their burden of proving that the accused EchoStar products infringe independent claim 31 and dependent claims 32, 33 and 34 of the '204 patent. For the same reasons that the administrative law judge found that the EchoStar products did not satisfy the innovative cursor requirement or the movement limitation in relation to claims 1 and 3 of the '268 patent, he finds that the EchoStar products do not meet these limitations in relation to claims 31, 32, 33 and 34 the '204 patent.

Based on the foregoing, the administrative law judge finds that complainants have not met their burden of proving that the accused EchoStar products infringe independent claim 31 and dependent claims 32, 33, and 34 of the ' 204 patent.

VII. PATENT MISUSE

The staff and all of the respondents argued that complainants have committed patent misuse through their licensing practices. [FN24] Complainants have denied any patent misuse. A party invoking patent misuse must prove the acts constituting the alleged misuse by a preponderance of evidence. See, e.g., GFI Inv. v. Frankling Corp., 88 F. Supp. 2d 619, 621 (N. D. Miss. 2000).

Patent misuse is an affirmative equitable defense to an accusation of patent infringement, the successful assertion of which "requires that the alleged infringer show that the patentee has impermissibly broadened the 'physical or temporal scope' of the patent grant with anticompetitive effect." Windsurfing Int'l, Inc. v. AMF, Inc., 782 F.2d 995, 1001, 228 U.S.P.Q. 562, 566 (Fed. Cir.

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1986). See Virginia Panel Corp. v. Mac Panel Co., 133 F.3d 860, 868-69 (Fed. Cir. 1997) (Virginia Panel). Because of the strong public policy underpinnings of the patent misuse defense, a party asserting this defense need not show that it has been harmed by the misuse directly. Rather,

> [i]t is the adverse effect upon the public interest of a successful infringement suit, in conjunction with the patentee's course of conduct, which disqualifies him to maintain the suit, regardless of whether the particular defendant has suffered from the misuse of the patent.

Morton Salt Co. v. G.S. Suppiger Co., 314 U.S. 488, 494 (1942); See also Senza-Gel Corp. v. Seiffhart, 803 F.2d 661, 668, n. 10 (Fed. Cir. 1986) (Senza-Gel).

Respondents have asserted that complainants in their licensing practices have engaged, and are continuing to engage, in a variety of practices by which the complainants are misusing their patents in the field of interactive program guides. Thus it was argued that complainants' licenses contain unlawful grantbacks and covenants not to sue (PPost at 263-77, SA-Post at 212-35, EPost at 386-412); that complainants' licenses contain unlawful exclusivity and market penetration provisions that tie out competition (PPost at 277-96, S-APost at 235-52, EPost at 363-86); and that complainants have misused their patents through tying arrangements. (PPost at 252-72, S-A Post at 296-306, REPost at 338-63).

The staff argued that the record established that complainants have engaged in patent misuse by using its large patent portfolio to impermissibly expand the scope of their patents and hinder competition, which discourages innovation in the technology in issue and substantially raise barriers to entry in the market in issue. (SPost at 67-68).

The parties are in dispute as to what the applicable legal standards are for finding patent misuse. For example, there is a dispute over the applicablity of the Patent Misuse Reform Act of 1988 (35 U.S.C. § 271(d)) (The 1988 Act). [FN25] [FN26] The staff and respondents contend that "tying" is per se patent misuse if the patents confer market power. [FN27] Complainants' contend that Congress rejected the theory that "tying" is per se patent misuse. (CPost at 426).

The Federal Circuit in Virginia Panel, 133 F.3d at 869, specifically found:

> The courts have identified certain specific practices as constituting per se patent misuse, including so-called 'tying' arrangements in which a patentee conditions a license under the patent on the purchase of a separable, staple good, ... Congress, however, has established that other specific practices may not support a finding of patent misuse. See U.S.C. 271 (d) ... A 1988 amendment to § 271(d) provides that, inter alia, in the absence of market power, even a tying arrangement does not constitute patent misuse....

(Emphasis added). Hence the administrative law judge finds that the Federal Circuit, subsequent to the 1988 Act, did not reject the theory that "tying" is per se patent misuse. [FN28] It did however, consistent with 35 U.S.C. § 271(d)(5), condition finding a "tying" arrange to constitute patent misuse per se on a finding that the patent holder has market power. Hence if it is shown that the patentholder has market power, anticompetitive effect is conclusively presumed, with "tying" arrangement.

A. Market Power

The "outer boundaries of a product market[[FN29]] are determined by the reasonable interchangeability of use or the cross-elasticity of demand between the product itself and substitutes for it." Brown Shoe Co. v. United States, 370 U.S. 294, 325 (1962) (Brown Shoe). Market power is "the ability profitably to maintain prices above, or output below, competitve levels for a significant period of time."

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See US Dept. of Justice (DOJ) and Federtal Trade Commission (FTC), Antritrust Guidelines for Licensing Intellectual Property § 2.2, reprinted in 49 Patent, Trademark & Copyright J. (BNA) 714 (April 13, 1995) (Antitrust Guidelines). Thus it is "the power to 'force a purchaser to do something that he would not do in a competitive market'." Eastman Kodak Co. v. Image Tech. Servs., 504 U.S. 451, 464, (1992) (quoting Jefferson Parish Hosp. Dist. No. 2 v. Hyde, 466 U.S. 2, 14 (1984)). Market power has also been defined as "the ability of a single seller to raise price and restrict output." Id. However, in Tic-X-Press v. Omni Promotions Co. 815 F.2d 1407, 1420 (11th Cir. 1987) (Tic-X-Press), the Eleventh Circuit stated that market power "can be sufficient even though the seller does not dominate the market ... Economic power may be inferred from the tying product's desirability to consumers or from uniqueness in its attributes."

To demonstrate market power, a party generally must: (1) define the relevant market; (2) demonstrate that the defendant enjoys a sufficient share of the market; and (3) demonstrate significant barriers to entry. See, e.g., Rebel Oil Co. v. Atl. Richfield Co., 51 F.3d 1421, 1434 (9th Cir. 1995). The common type of proof is circumstantial evidence pertaining to the structure of the market. Id. The relevant market is comprised of both the product market and the geographic market. Brokerage Concepts, Inc. v. United States Healthcare, Inc., 140 F.3d 494, 513 (3d Cir. 1998). The relevant market is the area of effective competition between the patent holder and the infringer. Thus the area of effective competition in the known line of commerce must be charted by careful selection of the market area in which the seller operates, and to which the purchaser can practicably turn for supplies. See Tampa Elec. Co. v. Nashville Coal Co., 365 U.S. 320, 327-28(1981). In Brown Shoe, 370 U.S. at 324, the Supreme Court determined that the relevant market has two dimensions, first the product market, which defines the products or services that compete with each other, and second, the geographic market, the market in which the competition is geographically defined.

The product market includes those products that are "reasonably interchangeable by consumers for the same purpose. Interchangeability implies that one product is roughly equivalent to another for the use to which it is put; while there may be some degree of preference for one over the other, either would work effectively." Brokerage Concepts, Inc., 140 F.3d at 513 (citations and quotations omitted). A technology market, i.e., intellectual property that is licensed, can constitute a relevant market when "rights to intellectual property are marketed separately from the products in which they are used." Anitrust Guidelines § 3.2.2. The geographic market is "the area in which a potential buyer may rationally look for the goods or services he or she seeks." Brokerage Concepts, Inc., 140 F.3d at 515.

Barriers to entry, which are particular characteristics of a market which impede entry by new firms into that market, may result from numerous market conditions, including patents or license agreements. See Image Tech. Servs., Inc. v. Eastman Kodak Co., 125 F.3d 1195, 1208 (9th Cir. 1997); Reazin v. Blue Cross & Blue Shield of Kansas, Inc., 899 F.2d 951, 968 (10th Cir. 199). Even where some competitors have or may enter a market, that entry must be "timely, likely, and sufficient in its magnitude, character and scope to deter or counteract the competitive effects of concern." See DOJ and FTC, Horizontal Merger Guidelines § 3.0, reprinted in Department of Justice Manual (Aspen Law & Business v.5 2002 supp.).

Respondents rely on testimony of experts Dr. Abram Hoffman and Professor David Sibley in support of their allegation that complainants have committed patent misuse, including the allegation that complainants have market power. Hoffman testified that Gemstar has market power in a market for IPG technology and a market for IPG products. (Tr. at 4583, 4630, 4635). Sibley testified that complainants possess a very great degree of market power for IPG licensing technology and that

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their licensing practices have enabled it to extend their market power to the market for IPGs. (Tr. at 4768). Complainants argued that the testimony of Hoffman and Sibley is misleading, is unreliable and lacks foundation.

Hoffman was asked specifically to look at the issue of market power. (Tr. at 4583). The administrative law judge finds that he is qualified to assess market power. He is not testifying as a lay person with no knowledge of the evidence. Thus Hoffman, in developing his opinions on alleged patent misuse, including market power, considered different types of evidence. He testified:

We've reviewed a lot of information in this case. It consists of well over 100 licensees that Gemstar and its predecessor companies have entered into. It includes the information exchanged by the parties in discovery, business records and communications, et cetera. {* * *}We've also sought to get an understanding of the IPG market and the market in which it operates through obtaining public information that might be helpful in that regard. So it went beyond the record of documents exchanged in discovery, to inform ourselves about the market in general. Also, deposition testimony that's been taken in this case, and exhibits thereto, large number of depositions that have been helpful in that regard, to our understanding of the licensing practices and the intents of the parties, et cetera.
(Tr. at 4589-90). Additionally, Hoffman reviewed trial transcripts and attended portions of the live testimony in this proceeding. (Hoffman, Tr. at 4590, 4593). [FN30] Moreover, Hoffman is a principal at the consulting firm PriceWaterhouseCoopers. Hoffman has a doctorate in business administration, specializing in managerial economics and finance, from Harvard, and has been a practicing economist for approximately 25 years. Hoffman regularly serves as a consultant to businesses, trade associations and government agencies, analyzing economic or financial data to determine the economic impact of business decisions. He previously has served as an expert witness or consultant in addressing liability and damages issues within the context of antitrust and unfair competition claims, and damages issues in patent infringement and intellectual property matters. Hoffman also has extensive experience as an expert analyzing antitrust issues including collusive practices, price fixing, price discrimination and predatory pricing. He has served as an expert witness or consultant in cases before the International Trade Commission, has testified before the Federal Trade Commission, the Joint Economic Committee of the United States Congress, and numerous state and federal courts throughout the country. Hoffman has co-authored a book chapter concerning economic and financial analysis in litigation and has given a presentation relating to the valuation of intellectual property for the purposes of analysis under the Hart-Scott Rodino Act. (See Tr. at 4579-83, RX-4336).

The administrative law judge also finds Sibley qualified to assess market power. Sibley testified, in developing his opinions, that he considered different types of evidence such as: depositions of various parties, documents obtained during the discovery process, publicly available documents, the contracts themselves, conversations with senior EchoStar executives and the relevant economics literature. Sibley also reviewed trial transcripts and attended portions of the live testimony in this proceeding. (Sibley, Tr. at 4767). Sibley holds a Ph.D. in economics from Yale University, which he received in 1973. After receiving his Ph.D., Sibley went to work for Bell Laboratories, ultimately becoming head of the economic research group at Bell Communications Research, a research and development entity created after the AT&T break-up. Sibley also has been employed as a senior staff economist at the Council of Economic Advisors and as a consultant for the Civil Aeronautics Board. In 1991, he became the John Michael Stuart Centennial Professor of Economics at the University of Texas at Austin, where he is employed today, and where he teaches graduate and undergraduate courses in economics. Sibley's field of expertise is industrial organization. He has been engaged as an expert economist by the Federal Trade Commission and the Department of Justice in

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United States v. Microsoft Corp., and by numerous private parties such as SBC Communications, Lucent Technologies and GTE Corporation. See Tr. at 4762-66, RX-7449.

In contrast, complainants' expert, Janusz A. Ordover, who has been a professor of economics at New York University, in New York for the past 28 years (Tr. at 5719), testified as to market power (Tr. at 5737-38):

Q In reaching your conclusions, Professor Ordover, what role, if any, has the analysis of market power played?

A Frankly, I have not devoted substantial -- substantial amount of time, almost any amount of time to the assessment of certain relevant markets in this litigation, and the reason for that is quite simple, which is to say that I have focused myself directly on the practices themselves and on their competitive consequences without asking myself whether or not it is important to ensure that the relevant markets are defined for that very purpose.

Q If you were to assume, in fact, that GemStar has market power in a properly defined relevant market, do your conclusions change?

A No. As I testified a second ago, my focus is actually on the practices themselves and their competitive effects, both in some of the alleged markets that have been put forth by Sibley and Hoffman and in general.

So my conclusions do not really turn on that, the finding, and therefore, whether or not for example certain practices such as a tie is -- my conclusion, for example, in regard to ties does not depend on the finding of market power, but rather on the finding that these alleged licensing practices are not ties, and if they were ties, they have not had any adverse competitive effect, at least in the markets that seem to be alleged by Sibley and Hoffman. [Emphasis added]

1. Relevant Market(s) For Establishing Market Power

To demonstrate market power a party must define the relevant market. See supra. Therefore before the administrative law judge can evaluate the extent to which GemStar exercises power in the alleged tying market, that market must be defined.

IPG technology is something different from an IPG application. An IPG application is an application that runs on a hardware device that allows a user to see and use an IPG. IPG technology, however, involves patents. (Van Orden ITC dep. JX-54C at 16).

Prior to the TV-Guide merger with Gemstar, SuperGuide licensed some of its IPG technology to Gemstar. Also, between 1992 and 1996, StarSight licensed its IPG technology to Scientific-Atlanta, Thomson, and Microsoft. In 1998 and 1999, Gemstar International Group licensed some of its technology to Microsoft and AOL respectively. Gemstar has admitted that the{* * *}agreements with Gemstar are licenses covering Gemstar's IPG-related patents. (Boylan ITC dep. JX-8C at 679). Additionally, Gemstar licenses its IPG technology to set-top box manufacturers for{* * *}The license agreements Gemstar entered into with { * * *}and other manufacturers of{* * *}boxes are IPG patent licenses. (Yuen ITC Dep. JX-61C at 195 - 196; RX-144C; RX-857C). Furthermore, Gemstar has licensed its IPG technology to{* * *}to make and sell the IPG on { * * *}television sets. (RX-167C). Hoffman looked at licenses that had been entered into by licensors and licensees for IPG technology and found there was licensing activity throughout the 1990s between owners of patents and those who sought to obtain licenses on the patents. (Tr. at 4602-05). By its own admission, Gemstar's domestic industry includes "[c]omplainant's substantial investment in the exploitation of the patents, including research and development and licensing of technology to others." (Complaint at 28). Thus the administrative law judge finds that there is a relevant market for IPG technology. The IPG technology market consist of IPG-related

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intellectual property that is licensed and its close substitutes.

The boundaries of the IPG technology market is determined by the reasonable interchangeability of use or the cross-elasticity of demand between the Gemstar IPG technology and its substitutes. See Brown Shoe, 370 U.S. at 325. The administrative law judge finds that there is a lack of other licensable technology, beyond Gemstar's, that can potentially be used independently to produce an IPG. (Hoffman, Tr. at 4606 - 4607). He further finds that "there is a lack of other licensable technology out there that can potentially be used independently to produce an IPG." (See Hoffman, Tr. at 4607, RX-4661C at 2). With reference to the relevant geographic market for IPG technology he finds that it is the United States by virtue of both the licensing practices, the coverage of MSOs that are licensees as well as the coverage of the patents. (Hoffman, Tr. at 4593-4594; RX-4654 at 1) (See RX-153; RX-1C).

The administrative law judge also finds that the second relevant market, for the administrative law judge's misuse inquiry, is the market for IPG products (interactive electronic program guides, irrespective of the type of hardware those programs reside on). [FN31] That finding is based on an analysis of the demand for IPG products, the suppliers and buyers of IPG products, and the utility of IPG products to consumers and cable multiple system operators (MSOs). [FN32] {* [FN33] * *} {* [FN34] [FN35] [FN36] **}

Complainants also argued that electronic program guides (EPGs) arepart of the relevant product market. Although the term EPG has been used interchangeably with IPG, EPG is also used to refer to a guide that is not interactive. This term usually refers to a scrolling guide where the program information scrolls on the television screen and the user cannot interact with it or control the display of the program information. (Van Orden ITC dep. JX-54C at 72- 74). {* * *}

The administrative law judge further finds that the current commercial suppliers of IPG products include complainants, complainants' licensees (e.g., Microsoft, AOL, and DirecTV set-top box manufacturers), respondents, Source Media, and Worldgate. (Hoffman, Tr. at 4599; RX-4657C at 1). The buyers or licensees of IPG products include cable MSOs such as Adelphia and Charter Communication, satellite or direct broadcast satellite providers such as DirecTV, and EchoStar and consumer electronics manufacturers (CEMs). (Hoffman, Tr. at 4599; RX-4658C at 1). Gemstar-TV Guide sells or licenses products, software and data embodying IPG technology to MSOs. (Orlick [FN37] ITC dep. JX-46C at 143 - 144). Gemstar-TV Guide also licenses its Guide Plus and Guide Plus Gold IPGs to various television manufacturers for use on their television sets, including Thompson (RCA, GE, ProScan), Phillips (Phillips, Magnavox), Sony, Toshiba, Sharp, JVC, and Hitachi. (Macrae, Tr. at 510 - 511; RX-646C - GITC-GA0914666). S-A and Pioneer offer IPG products that reside in cable set-top boxes. (Walker DOJ dep. JX-114C, at 27; {* * *}EchoStar provides IPGs to its direct broadcast satellite subscribers. (Ergen, Tr. at 2989).

{* [FN38] [FN39] * *}Hence the administrative law judge findsthe evidence sufficient to demonstrate that the relevant geographic market for IPG products for purposes of the patent misuse analysis is the United States.

2. Complainants' Share Of the Relevant Markets

After defining the relevant markets, the administrative law judge must determine whether complainants (Gemstar) enjoy a sufficient share of the relevant markets to constitute market power. See supra. Congress chose not to define explicitly the level of market power required before patent misuse could be found, but rather allowed courts to determine this issue on a case by case basis. Market power is

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defined generally as the ability of a market participant to raise prices or reduce output without affecting consumer demand.

a. Gemstar's Market Share In The Relevant IPG Technology Market

The administrative law judge finds that complainants have amassed a large portfolio of IPG-related technology through acquisition of competitors in both the IPG product and IPG technology markets, including TV Guide, Inc., VideoGuide, StarSight, SuperGuide, and patents from inventor Michael Levine. See, e.g., RX-1962 at 3; Gemstar International Group Ltd. Form 10-K405 at 14- 15; RX-1923C at 4. Gemstar stated that it has vehemently defended its intellectual property rights through the court system. To date, the majority of infringement cases Gemstar has brought to court have mostly been resolved through acquisition and/or merger with the offending party, as was the case with StarSight in 1997 and TV Guide, Inc. in 2000. But in addition to merging with a party accused of infringing its IPG patents, Gemstar has also settled with some parties. (RX-1914 at ES-0729-1004).

Before Gemstar acquired StarSight in 1997, the '121, '268, and '204 patents were owned by StarSight. The rights to the inventions disclosed in these patents were acquired when Gemstar acquired StarSight Telecast, Inc. in 1997. {* * *} {* * *}

Before Gemstar merged with TV Guide, Inc. in 2000, the '066 patent was owned by United Video Properties, a predecessor of TV Guide, Inc. Gemstar acquired the right to the invention disclosed in the '066 patent on January 22, 2001 pursuant to an assignment from United Video Properties, Inc. {* * *}

Complainants have market power in the IPG technology market, in part, because Gemstar has acquired large former independent technology licensors, including former competitors StarSight and TV Guide. {* * *} {* * *}

Gemstar has more than 170 issued U.S. patents in the general area of audio-visual technologies, and most of these patents are IPG-related patents. (Yuen, Tr. at 2548; RX-2327). In November of 2000, Gemstar's Boylan stated that Gemstar has over 110 IPG patents issued in the United States with over 2,100 claims; that it currently has 265 patents pending, which relate to IPGs with over 10,250 claims, many of which already have notices of allowance; and that Gemstar has 87 IPG patents issued internationally with over 1,700 claims and 621 IPG patents pending with 27,700 claims. (RX-647C at 13-14; RX-2101 at 1-4). In this proceeding, complainants listed some 112 separate IPG-related patents that they own. (RX-1136 at 1-4; RX-1965C at 1-4).

{* * *}The administrative law judge finds that Gemstar clearly has a strong and large portfolio of IPG-related patents, and as a result has a large share of the IPG technology market.

b. Gemstar's Market Share In The Relevant IPG Product Market

The administrative law judge finds that respondents have established that not only has the mergers affected the number of parties that own IPG technology in the technology market, but the mergers have also affected competition and availability of products in the IPG product market. Prior to Gemstar's acquisition, StarSight, TV Guide, and Prevue had their own IPG products. The record shows that as they were acquired by Gemstar, each of these IPGs disappeared from the market. In 1997, for example, S-A displayed five different IPGs from five different companies on its set-top boxes at a trade show, including IPGs from StarSight, Prevue Networks, TV Guide, Pioneer, and S-A's native guide. Gemstar has since acquired three of these companies reducing the available products. {* * *}In December of 1996, VideoGuide,

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Inc. became a wholly-owned subsidiary of Gemstar. (RX-2345 at SAITC900005162). The VideoGuide service was terminated in September of 1997 because its signal provider went bankrupt. (Macrae, Tr. at 503).

{* [FN40] * *}

Gemstar's Allen testified that of the over 100 licenses Gemstar has entered into with MSOs since the Gemstar/TV Guide merger, he was not aware that Gemstar had licensed the StarSight product to any MSO. (Allen, Tr. at 5464). As of April of 2000, the StarSight IPG was being serviced as a legacy IPG. "There [were] no new deployments of StarSight IPGs happening in the marketplace." (Kiener DOJ dep. JX-108C at 134).

Until March 1, 1999, TV Guide, Inc. was known as United Video Satellite Group, Inc. (United Video). (RX-2480C at GITC-GA 0416467). United Video owned and operated an IPG named Prevue Interactive, a passive EPG named Prevue Channel and an online Guide named Prevue Online. Id. In 1999, United Video acquired all rights to the TV Guide name and trademarks. United Video changed its name to TV Guide, Inc., and its Prevue brand of products were re-branded and re-named TV Guide, Interactive, TV Guide Channel, and TV Guide Online. Id. Prior to the Gemstar-TV Guide merger, TV Guide/United Video Satellite Group competed with Gemstar and StarSight in the market for interactive services such as IPGs. (RX-1049 at 9).

On October 4, 1999, Gemstar announced that it had a definitive merger agreement with TV Guide pursuant to which, TV Guide would become a wholly-owned subsidiary of Gemstar. (RXC641 at GITC-GA0914554). Thomas testified that, { * * *} (JX-113C at 224). After the merger between TV Guide and Gemstar, the combined company continued selling the TV Guide Interactive IPG product under the same name. (Boylan, Tr. at 5215). {* * *}

As for MSOs and telephone companies, the administrative law judge finds that complainants' products account for a significant portion of the cable and telephone related IPG product market. {* * *}For example, Gemstar announced the long-term agreement it entered into with Charter Communications and stated that TV Guide Interactive "is the only IPG currently used by Charter Communications in 200 systems representing over 600,000 digital households." (RX-2394). {* * *} {* * *}

{* * *}In February of 2001, Gemstar's web-site stated that "TV Guide interactive services are carried in systems owned by all the top 10 MSO's which include Adelphia, AT&T, AOL Time Warner, Cablevision, Charter Communications, Comcast, Cox, Insight, and DBS leader DirecTV." (RX-2394 at 1).

{* [FN41] * *}

Regarding direct broadcast satellite providers, [FN42] the administrative law judge finds that Gemstar holds a significant share of the IPG market through its licensing agreements with direct broadcast satellite providers. Thus in an interview with the Wall Street Transcript before the merger between Gemstar and TV Guide, Gemstar's Yuen stated that in the satellite sector, Gemstar collects a license fee from all Direct TV decoders and, therefore, in approximately 70 percent of the direct broadcast satellite systems deployed (all but EchoStar) (RX-2285C at 2). {* * *} {* * *} {* * *} {* * *} {* * *}

Based on the foregoing, the administrative law judge finds that Gemstar enjoys a sufficient share of the relevant market.

c. Barriers To Entry

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To demonstrate market power, it is also necessary to demonstrate significant barriers to entry. See supra. The administrative law judge finds that Gemstar's own activities demonstrate its belief that it currently captures most of the market and that there are significant barriers to entry to both the IPG products market and the IPG technology market. {* * *}Gemstar's Yuen takes the position that the Gemstar-TV Guide patent portfolio creates "a virtually insurmountable barrier of entry." (RX-2173 at PN 043308). There is also an independent Financial Analyst Report prepared by SG Cowen which concludes that Gemstar's patents create a formidable barrier to entry. (CX-895 at 1).

As Sibley, one of respondents' economic experts, testified Gemstar's licensing practices erect entry barriers. (Sibley, Tr. at 4768). {* [FN43] [FN44] * *}

In addition to the exclusivity provisions, the administrative law judge finds that the{* * *}in complainants' licensing agreements [FN45] (see infra) create barriers to entry. These provisions not only remove the incentive to innovate from the most likely innovators in the IPG area, they also create a system where{* * *} (Hoffman, Tr. at 4586; RX-4650C at 1).

The administrative law judge further finds that{* * *}in the licenses contribute to the barrier. {* * *}Like exclusivity provisions and penetration level provisions, {* * *} {* * *} {* * *}

Based on the foregoing, the administrative law judge finds that the exclusivity provisions, the grantbacks of technology and covenants not to sue, and the switching costs imposed in Gemstar's licensing agreements create significant barriers to entry in the markets of IPG technology and products.

d. Gemstar's Pricing

Gemstar's pricing also demonstrates market power. (Hoffman, Tr. at 4624, RXC-4674). {* * *} {* [FN46] * *} {* * *}The administrative law judge finds that respondents after established that Gemstar is able to control the market for IPG products, thus enhancing the barriers to entry and finds further that the constraints imposed upon respondents, MSOs, and CEMs in Gemstar's IPG licensing agreements demonstrates Gemstar's ability to control the market for IPG technology.

e. Conclusion

Based on the findings that Gemstar enjoys a sufficient share of the relevant markets of IPG technology and IPG products, that there are significant barriers to entry into the relevant markets created by Gemstar and that Gemstar has the ability to control said relevant markets, the administrative law judge finds that respondents have established that Gemstar has market power, required for a finding of patent misuse based on inequitable tying arrangements.

B. Tying

A patent holder commits misuse by tying when it broadens the scope of its patents to nonpatented products, thereby "extend[ing] the monopoly of his patent to derive a benefit not attributable to use of the patent's teachings." Zenith Radio Corp. v. Hazeltine Research, Inc., 395 U.S. 100, 136 (1969). A patentee may not condition the right to exploit his patent on the licensee's agreement to purchase, use, or sell, or not to purchase, use, or sell, another article of commerce not within the scope of his patent. Id. Although some parallels exist between patent misuse and the law of antitrust, the patentee's conduct need not rise to the level of an

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antitrust violation to be patent misuse:

Thus, as the Supreme Court has said, the patentees' act may constitute patent misuse without rising to the level of an antitrust violation. Zenith Radio Corp. v. Hazeltine Research, Inc., [395 U.S. 100, 140 (1969)]. All that a successful defense of patent misuse means is that a court of equity will not lend its support to enforcement of a mis-user's patent.

Senze-Gel, 803 F.2d at 668. As set forth by the Federal Circuit in Senza-Gel, 803 F.2d at 668-70 and by the Patent Act, the following elements, in addition to the patentholder having market power in the relevant market, establish patent misuse based on "tying":

(1) the patent or patented product and the allegedly tied product must be separate products;

(2) the tied item must be a "staple," i.e., capable of substantial non-infringing use; and

(3) there must be evidence of a forced or coerced tie.

In the patent misuse context, the test for separateness, the first element, is based on the nature of the claimed invention and whether the tied product is "a necessary concomitant of the invention or an entirely separate product." [FN47] Thus, the essential characteristic of an invalid tying arrangement lies in the seller's exploitation of its control over the tying product to force the buyer into purchasing the tied product, which the buyer either did not want at all, or would have preferred to purchase elsewhere on different terms. Jefferson Parish Hosp. v. Hyde, 466 U.S. 2, 12 (1984). A tying arrangement, however, cannot exist unless two separate product markets have been linked. Id. at 21. Referring to the second element, a staple product is a product that is capable of substantial, non-infringing uses and which was not especially made or adapted for use in infringement of the patent. See Hodosh v. Block Drug Co., Inc., 833 F.2d 1575, 1578 (Fed. Cir. 1987).

The thrust of the inquiry for the third element, viz., a forced or coerced tie, is whether the buyer is left with a meaningful freedom of choice in the tied market. See Tic-X-Press, 815 F.2d at 1416. Proof of coercion can be derived from one or more of the following: (1) an express condition in a contract, see, e.g., Bogosian v. Gulf Oil Corp., 561 F.2d 434, 450-51 (3d Cir. 1977); (2) proof that acceptance of the tied product was the only viable economic option available to the buyer, Marts v. Xerox, Inc., 77 F.3d 1109, 1113 (8th Cir. 1996); (3) facts and circumstances surrounding the negotiation process tending to show coercion, Tic-X-Press, 815 F.2d at 1416-17; (4) evidence that at least one buyer would have gone elsewhere for the tied product given the opportunity, id.; and (5) proof that "appreciable number of buyers have accepted burdensome terms, such as a tie-in, and there exists sufficient economic power in the tying product market," Moore v. Jas. H. Matthews & Co., 550 F.2d 1207, 1217 (9th Cir. 1977), Coercion is implicit when one proves that sales of one product were conditioned upon purchase of another. Bogosian, 561 F.2d at 450. Moreover, even if the products are available separately, an illegal tying arrangement can exist if purchasing the items together is the "only viable economic option." Marts, 77 F.3d at 113. It is not necessary to show that a buyer objected to the tie to prove that the buyer had been coerced. Tic-X-Press, 815 F.2d at 1418.

1. Whether Gemstar Illegally Ties Its Licensing Of Its IPG Patents To The TV Guide Interactive IPG

{* * *} {* * *} {* * *} {* * *} {* [FN48] * *}{* * *}

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Complainants argued that while Boylan testified that Gemstar's license agreements with MSOs include use rights to all of Gemstar's IPG-related patents, "that particular testimony is incorrect, perhaps because Mr. Boylan is not an attorney" (CRRFF 3696). Boylan, when he gave the testimony on August 23, 2001, was employed by Gemstar-TV Guide International as "co-president and COO, member of the office of chief executive," and has had that position since the completion of the merger on July 12, 2000. Before July 12, 2000, Boylan was president and member of the office of the chairman for TV Guide, Incorporated. [FN49] The administrative law judge rejects complainants' assertion that Boylan's testimony under oath is "incorrect."

{* [FN50] [FN51] * *} {* * *}

Respondents argued that Gemstar has misused the patents in issue by illegally tying its patent licenses to the TV Guide Interactive product. The administrative law judge finds that respondents have met their burden in establishing an illegal tying arrangement. Thus he finds that the record establishes that (1) Gemstar's IPG patents and Gemstar's TV Guide Interactive product are separate products; (2) the tied product (TV Guide Interactive product) is a staple article in commerce; and (3) the TV Guide Interactive product and Gemstar's IPG patents are actually tied. See Senza Gel, 803 F.2d at 664. Thus, IPG intellectual property rights can be marketed separately from IPG products. Prior to the Gemstar-TV Guide merger, and throughout the 1990s, there was licensing activity between various entities who had patents and those who sought licenses to those patents. {* * *} {* * *}Moreover, the TV Guide Interactive product is found to be a staple article in commerce. Even Gemstar has argued that its licenses with MSOs are product licenses.

{* [FN52] * *}It is uncontroverted that not all features or functions of the TV Guide Interactive product are covered by Gemstar-TV Guide's IPG-related patents, and that while there are patents that cover parts of the TV Guide Interactive product, part of the product is not covered by the patents. See unobjected RFF 3922 and unobjected RFF 3923. In response to Requests for Admission served by EchoStar, Gemstar admitted:

{* * *}

(RX-1966C at ¶ 60). Gemstar provided identical responses regarding the '204 and '268 patents (RX-1966C ¶ ¶ 62, 63). [FN53] Moreover in this investigation, it has been found that complainants' IPG products do not meet the technical prong of the domestic industry requirement.

{* * *}
{* [FN54] * *} {* [FN55] * *}

Complainants argued that Ergen responded to a "hypothetical question ... whether the premise has been falsified by the record" and to the extent that respondents are offering Mr. Ergen's testimony as an expert opinion, "it should be stricken because Ergen was not identified as an expert pre-trial." (CORFF 3965). Complainants, as the hearing transcript shows, made no objection to the question. Moreover Ergen, as CEO of EchoStar, is in a position to give an opinion. See Rule 701 of Federal Rules of Evidence. In addition, the administrative law judge at the hearing had ample opportunity to observe the demeanor of Ergen. He found Ergen to be forthright and straightforward in his testimony.

{* * *} {* * *}

Hence, as respondents' expert Sibley testified, Gemstar's IPG-related patents, including the patents in issue, are separate from the TV Guide Interactive IPG product. However, the patent licenses include both patents and TV Guide Interactive product. Thus the tying product is Gemstar-TV Guide's IPG-related patents and the

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tied product is the TV-Guide Interactive product. (Sibley, Tr. at 4806-07, RX-4350C).

Based on the foregoing the administrative law judge finds that the respondents have met their burden in establishing, with respect to Gemstar's patent licenses, that Gemstar's TV Guide Interactive product is a staple article in commerce and separate from Gemstar's licensed patents and that both are actually tied in Gemstar's licenses; and that Gemstar unlawfully ties its IPG technology, i.e., patents, to its TV Guide Interactive product, using its market power in the market for IPG technology to coerce licensees to purchase Gemstar's TV Guide Interactive IPG, the tie arising because the TV Guide Interactive IPG is not explicitly contemplated in the claims of the patents in issue.

2. Whether Gemstar Illegally Ties Its IPG Technology/Products To Unpatented And Separate Advertising

Respondents and the staff asserted that Gemstar has misused the patents in suit by illegally tying IPG technology/products to unpatented and separate advertising. [FN57] To determine whether there is a tie in fact, the administrative law judge must determine: (1) advertising and Gemstar's IPG are separate products; (2) the tied product, in this case advertising, is a staple article in commerce; and (3) the advertising and IPG are actually tied. See Senza Gel, 803 F.2d at 665.

The administrative law judge finds that advertising content is a separate product, as it is not covered by Gemstar's patents nor is it necessary to practice the patented invention. None of the patents-in-issue cover advertising content or advertising resale services. (RX-3001; RX-3002; RX-3003; RX-3004; RX-3005). {* * *}The advertising capability of the current IPG is built into the Gemstar IPG itself. (Yuen, Tr. at 2532; Allen dep., JX-2C at 414). The current version of Gemstar's consumer electronics IPG, TV Guide Interactive, and some versions of the StarSight IPG contain advertising. (Yuen, Tr. at 2582- 83). However, advertising resale brokerage is a separate product or service. Thus, respondents' expert Hoffman testified:

Q Did you evaluate whether or not advertising resale is a separate product?

A Yes, advertising resale is unrelated to the patents, Gemstar's patents, it's a service that existed before the advent of IPGs.

Q And did you evaluate whether advertising resale is a staple product?

A Yes, it is a staple product in that there are a number of providers of that service and resell advertising of MSOs, cable companies, broadcast affiliates, so that again, it's not related necessarily to IPGs or IPG patents.

(Tr. at 4679). {* * *} {* * *} {* * *} {* * *} {* * *} {* * *}

Based on the foregoing, the administrative law judge finds that respondents have met their burden in establishing advertising is a separate product from the IPG patents and IPG technology that Gemstar licenses; that advertising is also a staple item in commerce, and it is not necessary to the IPG covered by the patents at issue in issue or any of Gemstar's IPG patents; that Gemstar unlawfully ties its IPG technology/products to unpatented and separate advertising content; and that Gemstar uses its market power in the market for IPG technology/products to coerce its licensees to carry advertising on the TV Guide Interactive IPG with Gemstar dictating the advertising content.

C. Grantback Provisions Of Gemstar's Licenses

Respondents and the staff argued that complainants' (Gemstar's) grantback provisions in their licenses constitute patent misuse. Gemstar argued that the burden of establishing patent misuse has not been met.

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A "grantback" is "an arrangement under which a licensee agrees to extend to the licensor of intellectual property the right to use the licensee's improvements to the licensed technology." Antitrust Guidelines § 5.6. Grantbacks "may adversely affect competition ... if they substantially reduce the licensee's incentives to engage in research and development and thereby limit rivalry in innovation markets." Id. Such anticompetitive grantback provisions impermissibly broaden the physical and temporal scope of the licensor's patent grant, and constitute patent misuse under the "rule of reason." Virginia Panel, 133 F.3d at 868.

{* * *} {* * *} {* [FN58] * *} {* * *} {* [FN59] **}

Unlike the situation with tying arrangements, the administrative law judge must evaluate Gemstar's grantback provisions under the "rule of reason." Transparent-Wrap Machine Corp. v. Stokes & Smith Co., 329 U.S. 637, 648 (1947); see also Virginia Panel, 133 F.3d at 869. According to the DOJ Guidelines, a court assessing a grantback provision under the "rule of reason" should consider the "likely effects [of a challenged practice] in light of the overall structure of the licensing arrangement and conditions in the relevant markets." Antitrust Guidelines § 5.6. The test essentially weighs the effect of a grantback clause on innovation and competition. The DOJ Guidelines further explains:

> An important factor in the Agencies' analysis of a grantback will be whether the licensor has market power in a relevant technology or innovation market. If the Agencies determine that a particular grantback provision is likely to reduce significantly licensees' incentives to invest in improving the licensed technology, the Agencies will consider the extent to which the grantback provision has offsetting procompetitive effects, such as (1) promoting dissemination of licensees' improvements to the licensed technology, (2) increasing the licensors' incentives to disseminate the licensed technology, or (3) otherwise increasing competition and output in a relevant technology or innovation market.... In addition, the Agencies will consider the extent to which grantback provisions in the relevant markets generally increase licensors' incentives to innovate in the first place.

Antitrust Guidelines § 5.6. The Guidelines further warn that "[g]rantbacks may adversely affect competition ... if they substantially reduce the licensee's incentives to engage in research and development and thereby limit rivalry in innovation markets." Id.

Applying the "rule of reason" analysis, the administrative law judge finds that Gemstar's grantback provisions constitute patent misuse. { * * *} {* [FN60] * *} {* * *} {* * *}The free rider problem arises when, for example, "Mr. Smith works very hard and comes up with a great product or invention that has a benefit, and Mr. Jones is somehow able to, without breaking the law necessarily, appropriate the benefit without compensating Mr. Smith." (Sibley, Tr. at 4792). The "main concern" with the free rider is "a real incentive problem because prospectively, Mr. Smith. knows that what he does may be appropriated without compensation by Mr. Jones, may well decide not to go to the effort of producing that product at all. And in-that would result in sort of too little innovation." (Sibley, Tr. at 4792). {* * *}

The administrative law judge rejects complainants' arguments that there is no evidence that any parties outside of Gemstar's covenant not to sue provisions or Gemstar's grantback provision have reduced their efforts to participate in IPG innovation because of the existence of said provisions. See, e.g., Sibley, Tr. at 4871-72, 4881-82. {* * *} {* * *} {* * *}

D. Blocking Effect

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Gemstar has argued that most, if not all, of its conduct should be immune from any patent misuse because Gemstar has acquired a blocking position in the IPG technology market that blocks all competing IPGs. Thus complainants argued that exclusivity is anti-competitive only to the extent it precludes competition; that complainants have a series of overlapping blocking patents which effectively block commercially viable, unlicensed IPGs until 2012; and that exclusivity provisions in complainants' license agreements, therefore, have no effect on lawful competition through at least 2012. (CPre at 242). Morton Salt Co., 314 U.S. at 492, however does not authorize patent misuse where there are blocking patents. Thus the Court stated:

The grant to the inventor of the special privilege of a patent monopoly carries out a public policy adopted by the Constitution and laws of the United States, "to promote the Progress of Science and useful Arts, by securing for limited Times to ... Inventors the exclusive Right ...' to their 'new and useful' inventions. United States Constitution, Art. I, § 8, cl. 8; 35 U.S.C. § 31. But the public policy which includes inventions within the granted monopoly excludes from it all that is not embraced in the invention. It equally forbids the use of the patent to secure an exclusive right or limited monopoly not granted by the Patent Office and which it is contrary to public policy to grant.

It is a principle of general application that courts, and especially courts of equity, may appropriately withhold their aid where the plaintiff is using the right asserted contrary to the public interest. Virginian Ry. Co. v. Federation, 300 U.S. 515, 552; Central Kentucky Co. v. Railroad Commission, 290 U.S. 264, 270-73; Harrisonville v Dickey Clay Co., 289 U.S. 334, 337-38; Beasley v. Texas & Pacific Ry. Co., 191 U.S. 492, 497; Securities & Exchange Comm'n v. U.S. realty Co., 310 U.S. 434, 455; United States v. Morgan, 307 U.S. 183, 194.

Moreover the administrative law judge finds no substance in Gemstar's blocking argument. Gemstar bases its "blocking patent" argument on the opinion of Bernard Lechner. Lechner has spent a fair amount of his time consulting for ligation and has testified before as an expert in issues of patent infringement, claim construction and validity. (Tr. at 5560-61). In prior cases to prepare himself, he read the patent in issue many times, as well as the file history of the patent in issue, and read the relevant prior art concerning the patent in issue. (Tr. at 5661). In contrast, Lechner for his work in this case testified (Tr. at 5561-66):

A In this case I was not asked to look at patents that were in litigation that were being -- wherein someone was accused of infringing a patent and wherein validity was a question and so forth. I was merely asked to look at this portfolio of patents, and based on my interpretation of the claims and the scope of the claims, to render an opinion as to whether I believed they constituted a blocking position, and that is what I did.

Q Mr. Lechner, is it your understanding that you're testifying here in a case where someone is not accused of infringement?

A I understand that there are infringement issues in this case, but I was not -- I am not involved, nor was I asked to be involved in that aspect of the case.

Q Isn't it true, sir, that in connection with testifying here, you did not read -- in your work on this case, you did not read any of the file histories of any of the patents prior to your deposition being taken 30 days ago?

A I'm not certain that that is correct. I certainly have read the file histories of some of the patents. Whether I specifically referred to them in my work on this case, I don't recall that I did, but I can't be absolutely certain that I did not. I probably did not, as a matter of fact, but -

Q I'm sorry, sir. Even though that wasn't a technical answer, I couldn't tell whether you said yes or no.

A What I said was that I can't recall specifically that I did or did not look at any of the file histories during the course of my work on this case. I have certainly looked at a number of the file histories over the last couple of years,

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