

BROADCOM CORPORATION
INV. NO. 337-TA-_____

EXHIBIT 69

Aggarwal 7,342,967 Applied to Representative LG Components and Consumer Audiovisual Products Incorporating Those Components


This claim chart compares independent claim 1 of U.S. Patent No. 7,342,967 (the “Aggarwal ’967 patent”) to LG XD Engine LGE6551-AA2 G5E73E1 GG23C (“LGE6551”) system on a chip (“SoC”).

On information and belief, LG’s LGE6551 is representative of other LG digital TV SoCs having similar functionality (“Accused LG Digital TV SoCs”), including, without limitation, LG1312 ARM 1621 B1 TGV098.00A (“LG1312 1621”) and LG1312 ARM 1614 B1 TGP816.00A (“LG1312 1614”). Ex. 82, Richardson Decl., ¶¶ 21-22. We tested LGE6551. Upon information and belief, all LG XD Engine SoCs feature the same or substantially similar infringing functionality with respect to the ’967 patent. We tested LG1312 ARM 1621 B1 TGV098.00A and LG1312 ARM 1614 B1 TGP816.00A. Upon information and belief, all LG 1312 SoCs feature the same or substantially similar infringing functionality with respect to the ’967 patent.

The LGE6551 SoC is incorporated in downstream products, including LG’s TVs, such as the LG 55UH7700 Smart LED TV (“LG 55UH7700 TV”).

On information and belief, the LG 55UH7700 TV is representative of other LG digital TVs having similar functionality (“Accused LG Digital TVs”), including, without limitation, LG 60UH8500 Smart LED TV (“LG 60UH8500 TV”) and LG OLED55C6P OLED 4K HDR Smart TV (“LG OLED55C6P TV”). Ex. 82, Richardson Decl., ¶¶ 21-22.

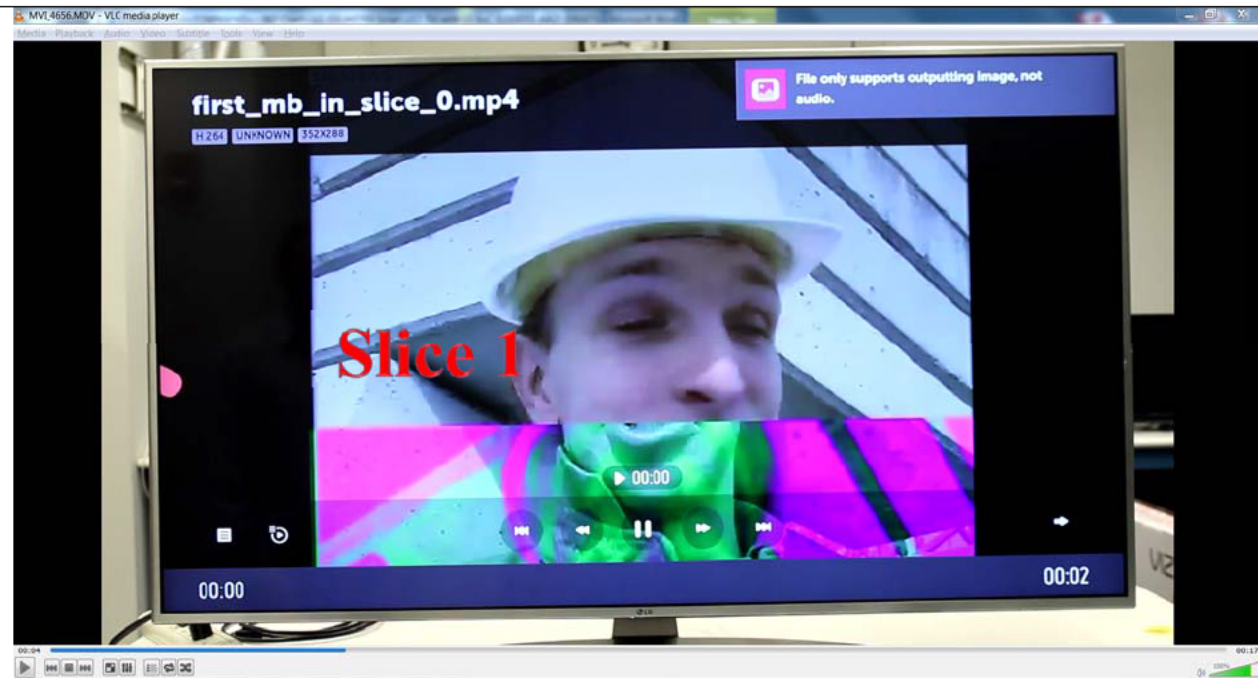
Claims – U.S. Patent No. 7,342,967 (Aggarwal)	Application of Claim Language to Accused Product
Claim 1	
A system for displaying pictures, said system comprising:	To the extent that the preamble is deemed limiting, the Accused LG Digital TV SoCs and televisions that incorporate the Accused LG Digital TV SoCs include a system for displaying pictures. A test of, for example, the LG 55UH7700 Smart LED TV (the “LG 55UH7700 TV”), which incorporates the LGE6551, confirms that the chip meets this claim element. Ex. 82, Richardson Decl., ¶ 19. The following representative screenshot shows that the LGE6551, incorporated in the LG 55UH7700 TV, displays pictures.

	
<p>a host processor for transmitting transport packets, said transport packets providing a plurality of instructions;</p>	<p>On information and belief, the Accused LG Digital TV SoCs and televisions that incorporate the Accused LG Digital TV SoCs contain a host processor for transmitting transport packets, where the transport packets provide a plurality of instructions.</p> <p>A “host processor” can comprise any device or element that processes an incoming transport stream (i.e., a stream of packets), extracts the packets from the stream, and passes the packets on to a decoder device (such as any audio or visual decoding device or functionality). ’967 patent 3:45-52. The claimed “transmitting transport packets” operation is the demultiplexing, decoding, and passing on of individual packets to the decoding functionality. A “plurality of instructions” is the contents of the coded or compressed audio or video syntax itself, which instructs or causes the decoder to perform various tasks.</p> <p>The LGE6551 meets this claim element. The test required uploading the sample bitstreams to the TV through a USB port. Then, the LG 55UH7700 TV, through the LGE6551 chip, read the file, extracted the transport packets, and passed the information on to the video decoder. Ex. 82, Richardson Decl., ¶ 19.</p>
<p>a video decoder for executing the plurality</p>	<p>On information and belief, the Accused LG Digital TV SoCs and televisions that incorporate the Accused LG Digital TV SoCs contain a video decoder for executing the plurality of instructions. ’967 patent 3:53-54</p>

of instructions; and wherein execution of the instructions by the video decoder comprises causing:	(“The decoder 120 is operable to perform decoding of the TS [Transport Stream.]”). For example, the LGE6551 chip contains a video decoder for executing the plurality of instructions. Ex. 82, Richardson Decl., ¶¶ 7-20.
selecting a picture, said picture comprising an intracoded slice and at least one slice above the intracoded slice, and at least one slice below the intracoded slice;	<p>Execution of the instructions on the Accused LG Digital TV SoCs and televisions that incorporate the Accused LG Digital TV SoCs results in the selection of a picture that has an intracoded slice, at least one slice above it, and at least one slice below it.</p> <p>For example, in the test, the sample bitstreams were encoded to have three intracoded slices per frame. Thus, the pictures (frames) that were selected and displayed on the LG 55UH7700 TV screen comprised an intracoded slice, at least one slice above it, and at least one slice below it. Ex. 82, Richardson Decl., ¶ 20.</p> <p>The LGE6551 successfully decoded a test stream in which each picture comprised three intracoded slices. Each picture was selected for decoding where, as previously explained, all slices (including the middle slice) were intracoded. In the following screenshot, for instance, the picture produced by the LGE6551 contains the three claimed slices, each comprising one-third of the image. The top slice is Slice 0, the middle slice is Slice 1 (the claimed “intracoded slice”), and the bottom slice is Slice 2. Ex. 82, Richardson Decl., ¶ 20.</p>

	<p>The above representative screenshot shows Frame 1, at about 0:04, with Slices 0, 1, and 2 labeled.</p>
<p>decoding the at least one slice above the intracoded slice;</p>	<p>Execution of the instructions on the Accused LG Digital TV SoCs and televisions that incorporate the Accused LG Digital TV SoCs results in decoding the at least one slice above the intracoded slice. For example, in the three-slice frame (Frame 1) shown below, the top slice (Slice 0) is displayed and, accordingly, it has been decoded. The top slice appears above the middle slice, which is an intracoded slice. Ex. 82, Richardson Decl., ¶ 20.</p>

	<p>The above representative screenshot shows Frame 1, at about 0:04, with Slice 0 labeled.</p>
<p>decoding the intracoded slice; and</p>	<p>Execution of the instructions on the Accused LG Digital TV SoCs and televisions that incorporate the Accused LG Digital TV SoCs results in decoding the intracoded slice. In the three-slice frame (Frame 1) shown below, the middle intracoded slice (Slice 1) is displayed and, accordingly, it has been decoded. Ex. 82, Richardson Decl., ¶ 20.</p>



The above representative screenshot shows Frame 1, at about 0:04, with Slice 1 labeled.

decoding at least a portion of another picture after decoding the at least one slice above the intracode [sic] slice and the intracode [sic] slice without having decoding [sic] the at least one slice below the intracoded slice.

Execution of the instructions on the Accused LG Digital TV SoCs and televisions that incorporate the Accused LG Digital TV SoCs results in decoding at least a portion of another picture after decoding the at least one slice above the intracoded slice and the intracoded slice without having decoded the at least one slice below the intracoded slice.

This claim element is satisfied, for example, by the successful decoding of the top two-thirds of the test bitstreams in a frame (Frame 1) together with the presence of the error condition in the third slice of that same frame. Then, at some later frame (Frame 2), which does not need to be immediately adjacent to Frame 1, a portion of an image must be successfully decoded. Ex. 82, Richardson Decl., ¶ 20.

As shown in the below frame (Frame 2), a portion of another picture has been decoded following Frame 1, where the LGE6551 chip already decoded the top and middle slices of the image in Frame 2 (i.e., the at least a portion of another picture after decoding the at least one slice above the intracoded slice and the intracoded slice).



The above representative screenshot shows Frame 2, at about 0:05, with Slice 0 labeled.

The following screenshot shows Slices 0, 1, and 2 of the picture of Frame 1, which preceded the Frame 2 image. Slices 0 and 1 have been decoded, as previously explained. The decoder in the LGE6551 chip, upon encountering an intentionally introduced error in Slice 2 of the picture of Frame 1, does not successfully decode or display Slice 2 of the picture of Frame 1. Instead, it displays incorrect video data (probably retained in its internal frame buffer) in the position of Slice 2 and continues to decode Slice 0 of a later frame, Frame 2 in the above example.

In other words, the bottom slice that appears below the intracoded Slice 1 in Frame 1 is not displayed nor has it been decoded. Thus, the portion of Frame 2 shown above has been decoded without having decoded the bottom slice in Frame 1.



The above representative screenshot shows Frame 1, at about 0:04, with Slices 0, 1, and 2 labeled.