Exhibit D-1

Invalidity of the '265 Patent in View of JP 2009-60204 A to Iwamoto (Iwamoto)

This chart provides examples of where the prior art reference discloses, either expressly or inherently, the claim elements of asserted U.S. Patent No. 9,232,265 ("the '265 patent"). The citations herein are exemplary and are not exhaustive; Defendant has cited the most relevant portions of the identified prior art. For each citation, Defendant hereby incorporates by reference the entire cited prior art reference, and reserves the right to rely on uncited portions of each identified prior art reference. To provide context or identify the state of the art at the time of the alleged invention, Defendant reserves the right to rely on: (1) uncited portions of the identified prior art; (2) other prior art not identified herein; (3) references that show the state of the art (irrespective of whether such references themselves qualify as prior art); (4) factual testimony from the inventors or authors of the prior art references, or purveyors of prior art devices; and (5) expert testimony.

Where Defendant cites a figure, the citation includes any text associated with the figure. Where Defendant cites passages relating to a figure, the citation includes the associated figure any other text associated with that figure. Where Defendant cites particular prior art as disclosing a claim element, that citation equally applies to all identical or similar claim elements in this chart. Defendant reserves the right to further assert that a claim element is inherent, the element would have been obvious to a person of ordinary skill in the art, or the element is disclosed in other prior art that may be combined with the cited prior art. To establish the inherency of certain features of the prior art to invalidate the asserted claims, Defendant may rely on cited or uncited portions of the prior art, other documents, factual testimony, and expert testimony.

This invalidity chart is based on information presently available to Defendant, and the information herein is provided as a non-limiting example.

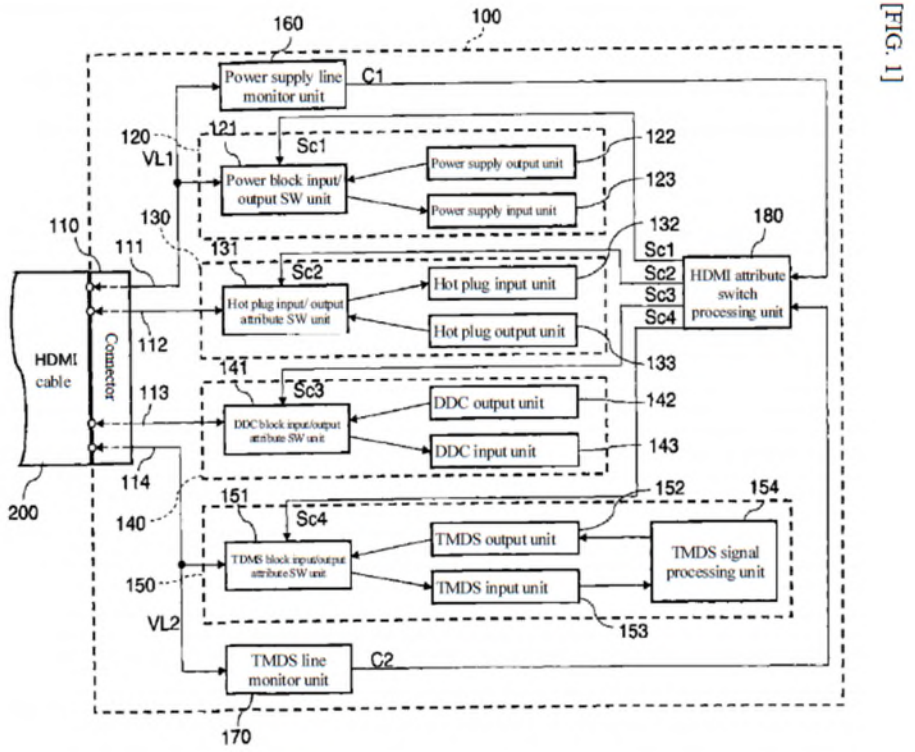
Iwamoto was filed on August 30, 2007, and published on March 19, 2009; therefore, Iwamoto is prior art under at least 35 U.S.C. § 102(b).

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Exhibit D-1

Claim Limitation		Iwamoto
Claim 1		
1[p]	A method comprising:	To the extent the preamble is limiting, Iwamoto discloses this element and/or renders it obvious either alone or in combination with other references and/or the knowledge of one of ordinary skill in the art. *See, e.g.*: "The present invention has been configured in view of such conventional problems, and an object thereof is to provide a source/sink dual-purpose device that can detect a functional attribute of an HDMI device connected to a single connector. To provide a source/sink dual-purpose device capable of automatically switching its own functions according to the detected function attribute of the device." Iwamoto at [0016]. "In order to achieve the foregoing object, the source/sink dual-purpose device of the present invention is a source/sink dual-purpose device conforming to the HDMI standard, provided with first function means for realizing a function as a source device and second function means for realizing a function as a sink device, a source/sink dual-purpose device conforming to the HDMI standard, provided with a second function means for realizing, being provided with a connector for connecting one of the first function means and the second function means to an external device conforming to the HDMI standard, first voltage level monitor means for detecting the voltage level of the power line of the connector, second voltage level monitor means for detecting the voltage level of a TMDS_CLK line of the connector, and function determination means for determining a function of the external device on the basis of the detected two voltage levels." Iwamoto at [0017]. "Before describing embodiments of the present invention in detail, first, main characteristics of the present invention will be described. The source/sink dual-purpose device according to the present invention is configured to conform to the HDMI standard and is provided with two monitor units for detecting a state of signals flowing through an HDMI cable. When an external device is connected via an HDMI cable to a connector shared by both a source and a sink of the source/sink

		dual-purpose device, a function attribute of whether the connected external device conforming to the HDMI standard is the source or the sink is determined on the basis of detection results of two monitor units." Iwamoto at [0026]. "The source/sink dual-purpose device switches its own function to the source or the sink according to the determined function attribute of the external device. At this time, the source/sink dual-purpose device 1 adjusts its own impedance so as not to cause an impedance mismatch with the external device. As a result, the source/sink dual-purpose device can function as the source device or the sink device according to the attribute of the device connected to the shared connector, that is, whether it is the sink device or the source device, without a switching operation of the user." Iwamoto at [0027].

		 Iwamoto at Fig. 1. To the extent that Plaintiff contends that Iwamoto does not explicitly or inherently disclose this element, or render obvious this element, this element is obvious in combination with one or more references and/or with the knowledge of a person of ordinary skill in the art, as set forth in Defendant's Invalidity Contentions.
1(a)	initializing a first audio/video (AV) device to operate in a default AV sink	Iwamoto discloses and/or renders obvious this limitation. *See, e.g.*: "An AV system conforming to the HDMI standard is normally configured by connecting a source device that supplies AV signals and a sink device that receives the AV signals via a cable

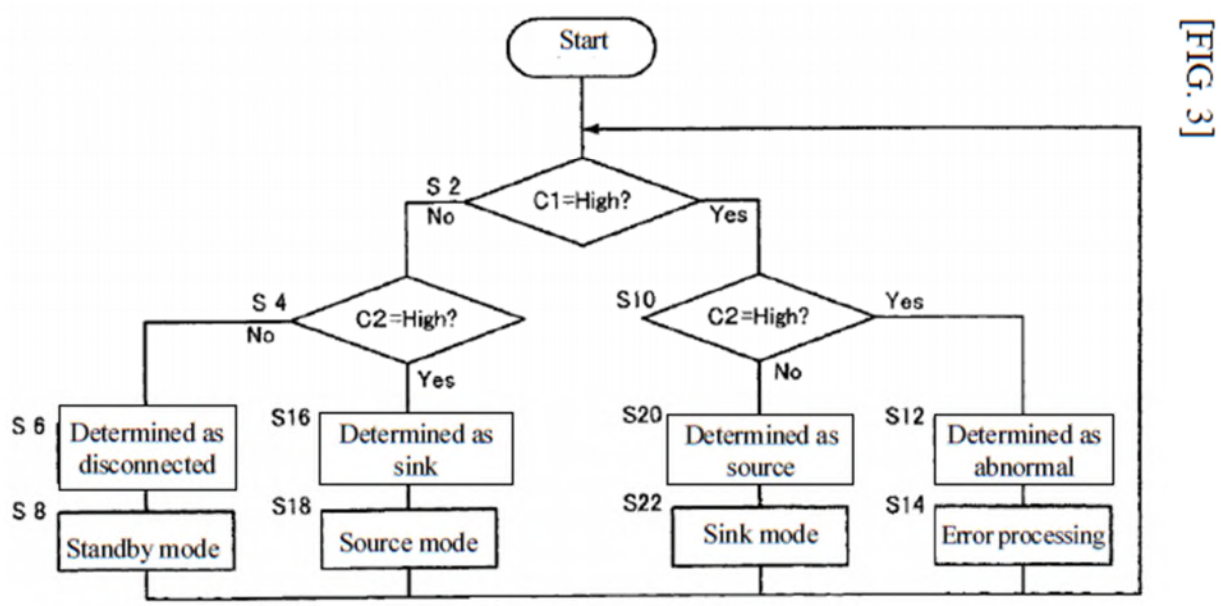
	operation mode in response to a power-on-reset or powering up of the first AV device;	conforming to the HDMI standard (hereinafter referred to as an "HDMI cable"). A device for supplying a video signal or an audio signal such as an STB, a DVD player, or a digital video camera is used as the source device. A device such as a television receiver (hereinafter referred to as "television") or a projector that outputs video or audio is used as the sink device. It is conceivable that these constitute a source/sink dual-purpose device having both a function of the source device and a function of the sink device, such as a television with a built-in DVD player." [0003]. "In order to achieve the foregoing object, the source/sink dual-purpose device of the present invention is a source/sink dual-purpose device conforming to the HDMI standard, provided with first function means for realizing a function as a source device and second function means for realizing a function as a sink device, a source/sink dual-purpose device conforming to the HDMI standard, provided with a second function means for realizing, being provided with a connector for connecting one of the first function means and the second function means to an external device conforming to the HDMI standard, first voltage level monitor means for detecting the voltage level of the power line of the connector, second voltage level monitor means for detecting the voltage level of a TMDS_CLK line of the connector, and function determination means for determining a function of the external device on the basis of the detected two voltage levels." Iwamoto at [0017]. "The HDMI attribute switching processing unit 180 further determines an operation mode M of the source/sink dual-purpose device 100 based on the determination result of the external device function attribute. Note that "operation mode" refers to which function of "standby," "error processing," "source," or "sink" the source/sink dual-purpose device 100 operates." Iwamoto at [0051]. "'Standby' refers to a process for energizing the source/sink dual-purpose device 100 and waiting for connection of the external device. When the function attribute of the external device is determined to be "disconnected", a "standby" mode is determined." Iwamoto at [0052].

		"Specifically, when determined to be in "standby" mode, the control signals Sc1 to Sc4 control the power supply block input/output SW unit 121, the DDC block input/output attribute SW unit 131, the hot plug input/output attribute SW unit 131, and the TDMS block input/output attribute SW unit 151, respectively, so that the power supply block 120, the hot plug block 130, the DCC block 140, and the TMDS block 150 become high impedance." Iwamoto at [0057]. "In step S6, both the power source line level C1 and the TDMS line level C2 are Low, and thus, as described with reference to FIG. 2, it is determined that the external device 20 is "disconnected." Then, in step S8, the control signals Sc1 to Sc4 are output, and the source/sink dual-purpose device 100 is set to the standby mode. Then, control returns to step S2 described above." Iwamoto at [0065]. "State 1: The external device 20 is not connected to the source/sink dual-purpose device 100, or no current is applied despite being connected…. In state 1 (non-connection), the source/sink dual-purpose device 100 is set to a standby mode by processing in step S2 (No), step S4 (No), step S6, and step S8. Then, the source/sink dual-purpose device 100 waits for the external device 20 to be connected while repeating the process of the flowchart of FIG. 3." Iwamoto at [0072]-[0073].

[FIG. 2]

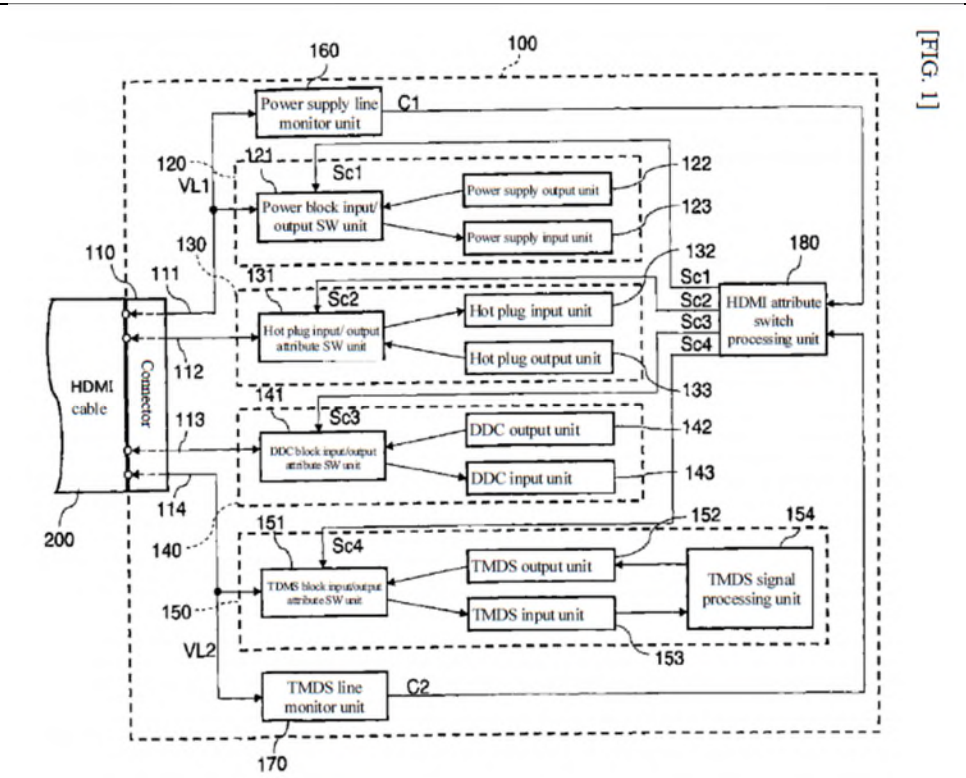
C1	C2	J	M	Sc	
Power line level	TMDS CLK line level	External device function determination	Operation mode determination	Control Signal	
Low	Low	Disconnected	Standby	Sc1	High Impedance
				Sc2	High Impedance
				Sc3	High Impedance
				Sc4	High Impedance
High	High	Error	Shunt	Sc1	High Impedance
				Sc2	High Impedance
				Sc3	High Impedance
				Sc4	High Impedance
Low	High	Sink	Source	Sc1	Power supply output unit
				Sc2	Hot plug input unit
				Sc3	DCC output unit
				Sc4	TMDS output unit
High	Low	Source	Sink	Sc1	Power supply input unit
				Sc2	Hot plug output unit
				Sc3	DDC input unit
				Sc4	TMDS input unit

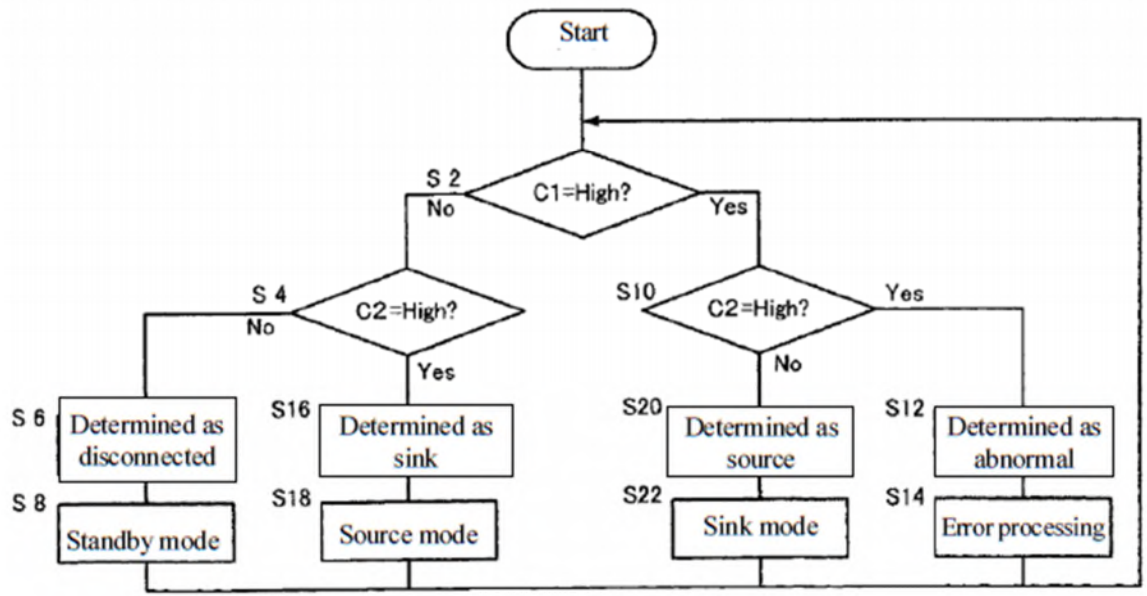
Iwamoto at Fig. 2.

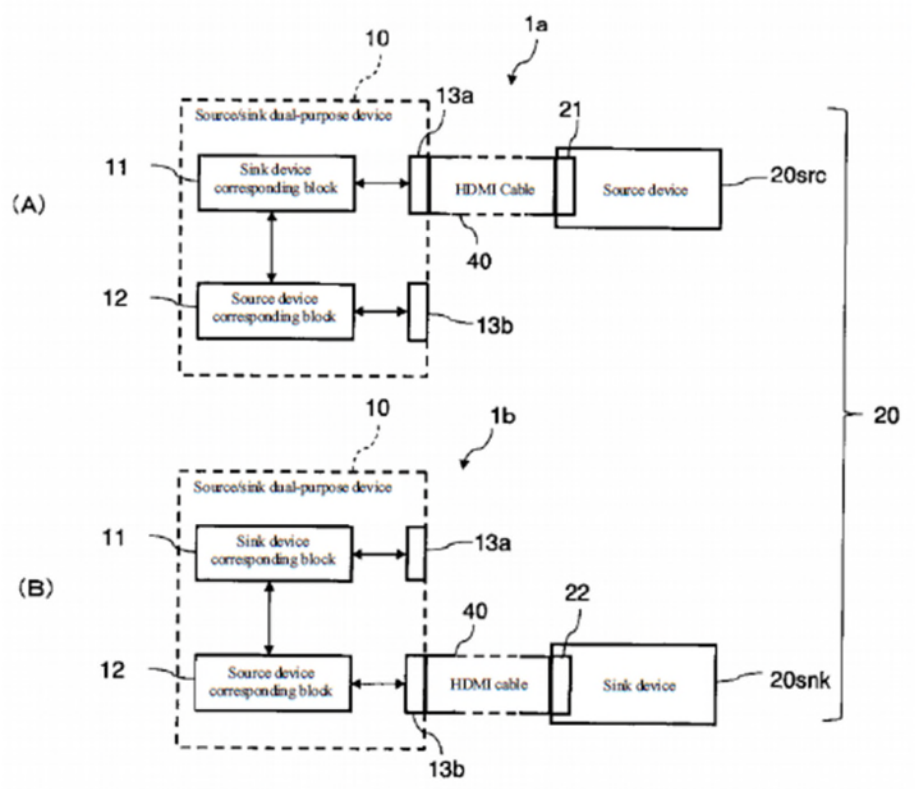
		 Iwamoto at Fig. 3. To the extent that Plaintiff contends that Iwamoto does not explicitly or inherently disclose this element, or render obvious this element, this element is obvious in combination with one or more references and/or with the knowledge of a person of ordinary skill in the art, as set forth in Defendant's Invalidity Contentions.
1(b)	detecting with control circuitry of the first AV device, a coupling between the first AV device and a second AV device;	Iwamoto discloses and/or renders obvious this limitation. *See, e.g.*: "FIG. 1 illustrates a configuration of the source/sink dual-purpose device according to an embodiment of the present invention. The source/sink dual-purpose device 100 includes a connector 110, a power supply block 120, a hot plug block 130, a DCC block 140, a TDMS block 150, a voltage line monitor 160, a TDMS line monitor 170, and an HDMI attribute switching processing unit 180." Iwamoto at [0028]. 00

		"The connector 110 conforms to the HDMI standard and is exclusively connected to either one of another source device 20src (FIG. 5) and a sink device 20snk (FIG. 5) conforming to the HDMI standard via the HDMI cable 200. That is, the connector 110 is shared by the source device 20src and the sink device 20snk. The HDMI cable 200 includes a plurality of lines for transmitting signals and data. Typical lines include a CEC line, a hot plug line, a DDC line, and an HDMC line." Iwamoto at [0029]. "The source/sink dual-purpose device 100 can function as a source device conforming to the HDMI standard, via a power source output unit 122, a hot plug input unit 132, a DDC output unit 142, a TDMS output unit 152, and a TMDS signal processing unit 154. Conversely, the source/sink dual-purpose device 100 can function as a sink device conforming to the HDMI standard, via a power input unit 123, a hot plug output unit 133, a DDC input unit 143, a TDMS input unit 153, and a TMDS signal processing unit 154." [Iwamoto at [0033]. "Next, two monitoring units 160 and 170 that monitor the connection state between the HDMI cable 200 and the external device 20 will be described. The power supply line monitor unit 160 repeatedly detects a voltage level VL1 of a power supply line 111 among a plurality of lines connected to the connector 110 at predetermined time intervals to generate a binary level signal (hereinafter, 'power supply line level') C1." Iwamoto at [0042]. "When the external device 40 to which the connector 110 is connected via the HDMI cable 200 is the source device 20src, the voltage level VL1 of the power source line 111 indicates a High level (5 V). In contrast, when the connected external device 40 is the sink device 20snk, is not connected, or is not operating due to not being energized despite being connected, the voltage level VL1 indicates a low level (0 V). The power supply line level C1 has a value of either High or Low corresponding to the level of the voltage level VL1." Iwamoto at [0043]. "The TDMS line monitor unit 170 repeatedly detects a voltage level VL2 of the TDMS line (specifically, a TDMS_CLK line) 114 included in the connector 110 at predetermined time intervals to generate a binary level signal (hereinafter, "TDMS line level") C2. When the connector 110 is connected to a sink device via the HDMI cable 200, the voltage level VL2 of the TDMS line 114 indicates a High level (3.3 V)." Iwamoto at [0044].

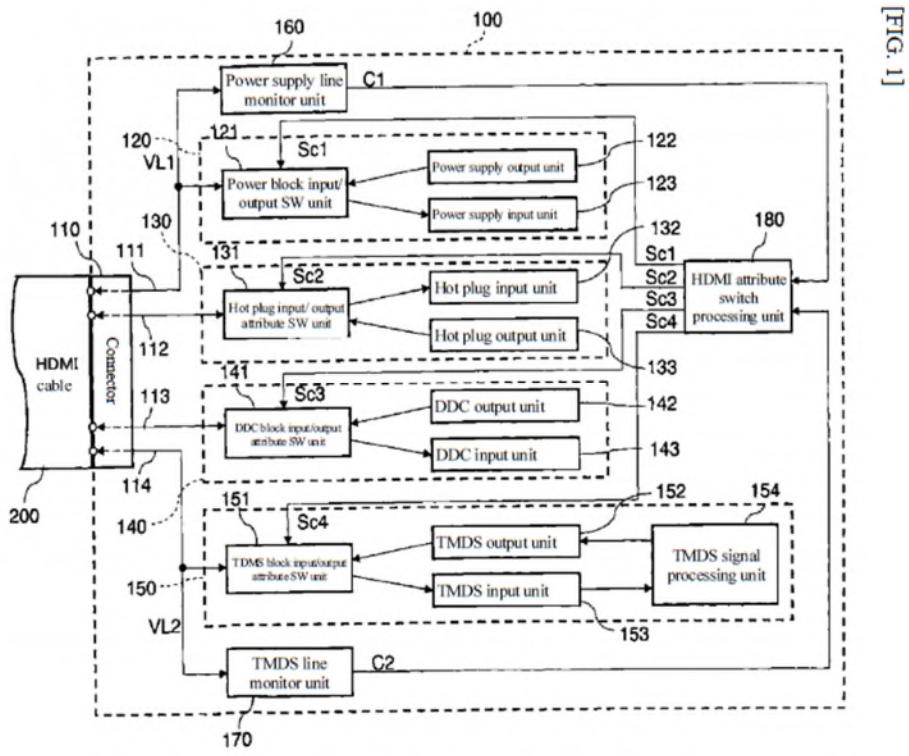
		"In contrast, when the connector 110 is connected to a source device via the HDMI cable 200 or is not connected to another device, the voltage level VL2 indicates a low level (0 V). The TDMS line level C2 has a value of either High or Low corresponding to the level of the voltage level VL2." Iwamoto at [0045]. "Operation of the HDMI attribute switching processing unit 180 will be described below with reference to FIG. 2. The HDMI attribute switching processing unit 180 determines a function J of the external device connected to the connector 110 also used for connection between the source device and the sink device based on the power source line level C1 and the TDMS line level C2. Note that "function," in relation to the external device, refers to one of four states of 'disconnected,' 'abnormal,' 'sink,' and 'source.'" Iwamoto at [0046]. "State 1: The external device 20 is not connected to the source/sink dual-purpose device 100, or no current is applied despite being connected…. In state 1 (non-connection), the source/sink dual-purpose device 100 is set to a standby mode by processing in step S2 (No), step S4 (No), step S6, and step S8. Then, the source/sink dual-purpose device 100 waits for the external device 20 to be connected while repeating the process of the flowchart of FIG. 3." Iwamoto at [0072]-[0073].

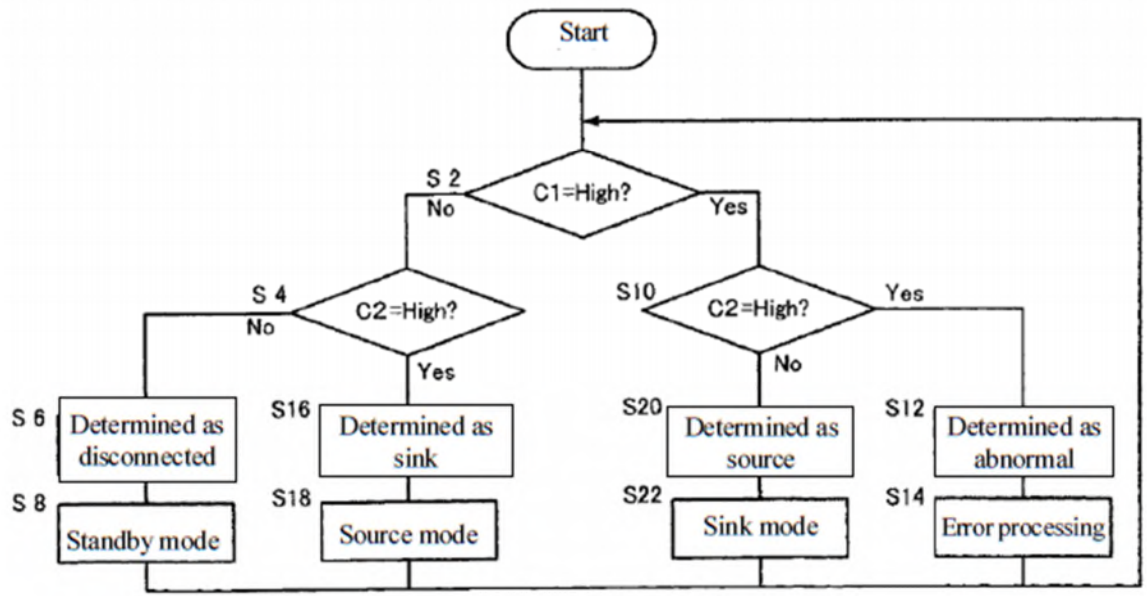
		 Iwamoto at Fig. 1.

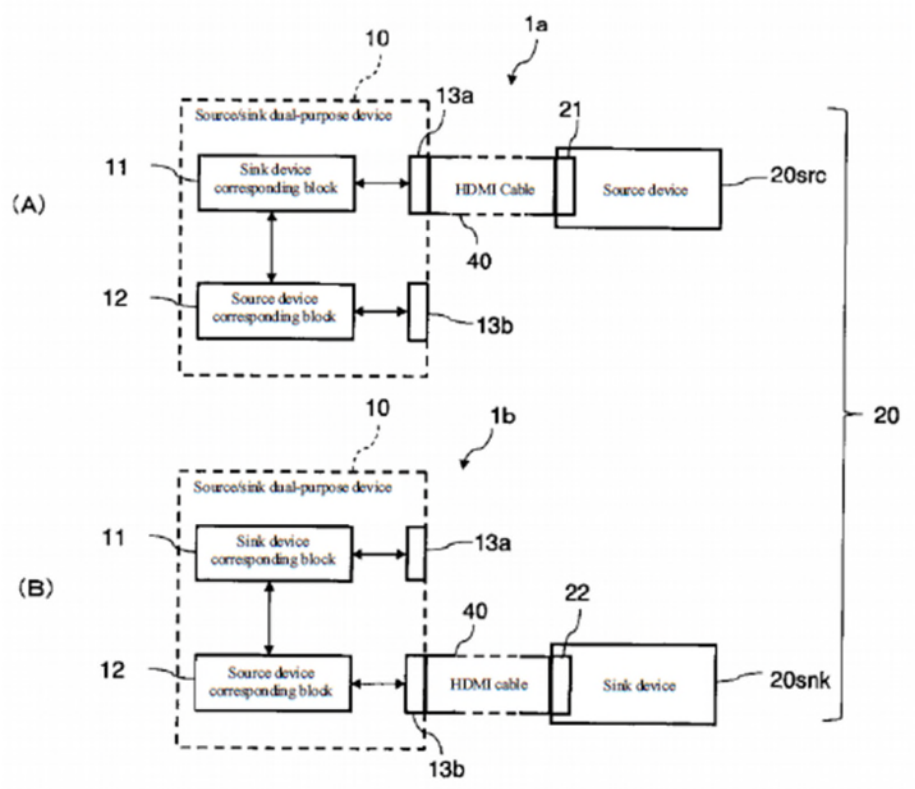
		 [FIG. 3] Iwamoto at Fig. 3.

		 Iwamoto at Fig. 5. To the extent that Plaintiff contends that Iwamoto does not explicitly or inherently disclose this element, or render obvious this element, this element is obvious in combination with one or more references and/or with the knowledge of a person of ordinary skill in the art, as set forth in Defendant's Invalidity Contentions.
1(c)	determining whether a first supply voltage is provided at a channel of a connector, the	Iwamoto discloses and/or renders obvious this limitation. *See, e.g.*: "Next, two monitoring units 160 and 170 that monitor the connection state between the HDMI cable 200 and the external device 20 will be described. The power supply line monitor unit 160 repeatedly

	connector coupling the first AV device and the second AV device;	detects a voltage level VL1 of a power supply line 111 among a plurality of lines connected to the connector 110 at predetermined time intervals to generate a binary level signal (hereinafter, 'power supply line level') C1." Iwamoto at [0042]. "When the external device 40 to which the connector 110 is connected via the HDMI cable 200 is the source device 20src, the voltage level VL1 of the power source line 111 indicates a High level (5 V). In contrast, when the connected external device 40 is the sink device 20snk, is not connected, or is not operating due to not being energized despite being connected, the voltage level VL1 indicates a low level (0 V). The power supply line level C1 has a value of either High or Low corresponding to the level of the voltage level VL1." Iwamoto at [0043]. "The TDMS line monitor unit 170 repeatedly detects a voltage level VL2 of the TDMS line (specifically, a TDMS_CLK line) 114 included in the connector 110 at predetermined time intervals to generate a binary level signal (hereinafter, "TDMS line level") C2. When the connector 110 is connected to a sink device via the HDMI cable 200, the voltage level VL2 of the TDMS line 114 indicates a High level (3.3 V)." Iwamoto at [0044]. "In contrast, when the connector 110 is connected to a source device via the HDMI cable 200 or is not connected to another device, the voltage level VL2 indicates a low level (0 V). The TDMS line level C2 has a value of either High or Low corresponding to the level of the voltage level VL2." Iwamoto at [0045]. "Operation of the HDMI attribute switching processing unit 180 will be described below with reference to FIG. 2. The HDMI attribute switching processing unit 180 determines a function J of the external device connected to the connector 110 also used for connection between the source device and the sink device based on the power source line level C1 and the TDMS line level C2. Note that "function," in relation to the external device, refers to one of four states of 'disconnected,' 'abnormal,' 'sink,' and 'source.'" Iwamoto at [0046]. "State 1: The external device 20 is not connected to the source/sink dual-purpose device 100, or no current is applied despite being connected…. In state 1 (non-connection), the source/sink dual-purpose device 100 is set to a standby mode by processing in step S2 (No), step S4 (No), step S6,

		and step S8. Then, the source/sink dual-purpose device 100 waits for the external device 20 to be connected while repeating the process of the flowchart of FIG. 3." Iwamoto at [0072]-[0073].  [FIG. 1] Iwamoto at Fig. 1.

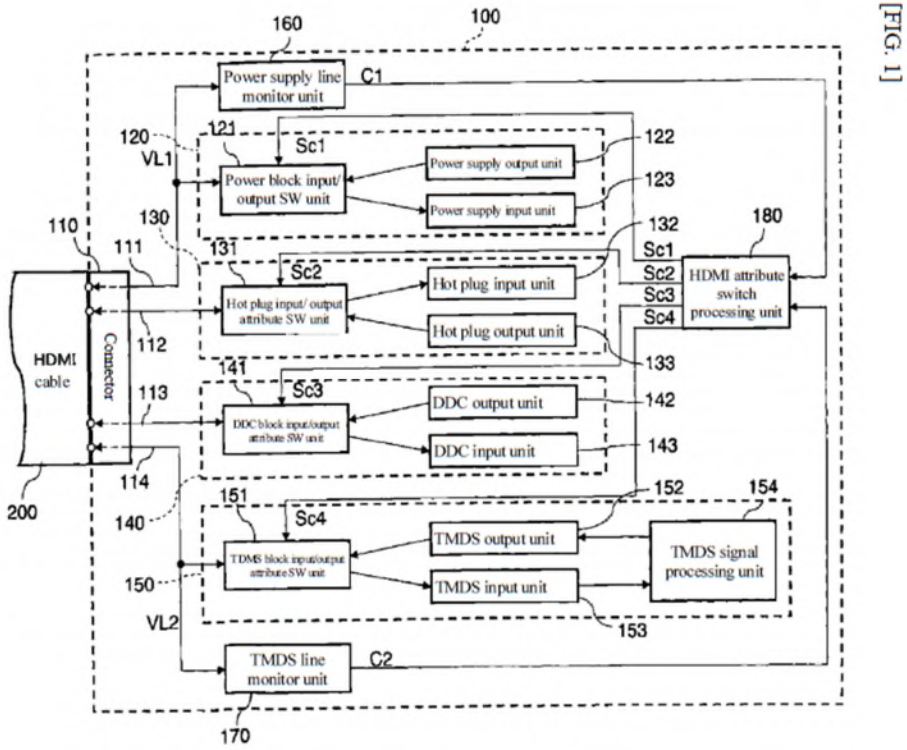
		 [FIG. 3] Iwamoto at Fig. 3.

		 Iwamoto at Fig. 5. To the extent that Plaintiff contends that Iwamoto does not explicitly or inherently disclose this element, or render obvious this element, this element is obvious in combination with one or more references and/or with the knowledge of a person of ordinary skill in the art, as set forth in Defendant's Invalidity Contentions.
1(d)	in response to determining that the first supply voltage is	Iwamoto discloses and/or renders obvious this limitation. *See, e.g.*: "Next, two monitoring units 160 and 170 that monitor the connection state between the HDMI cable

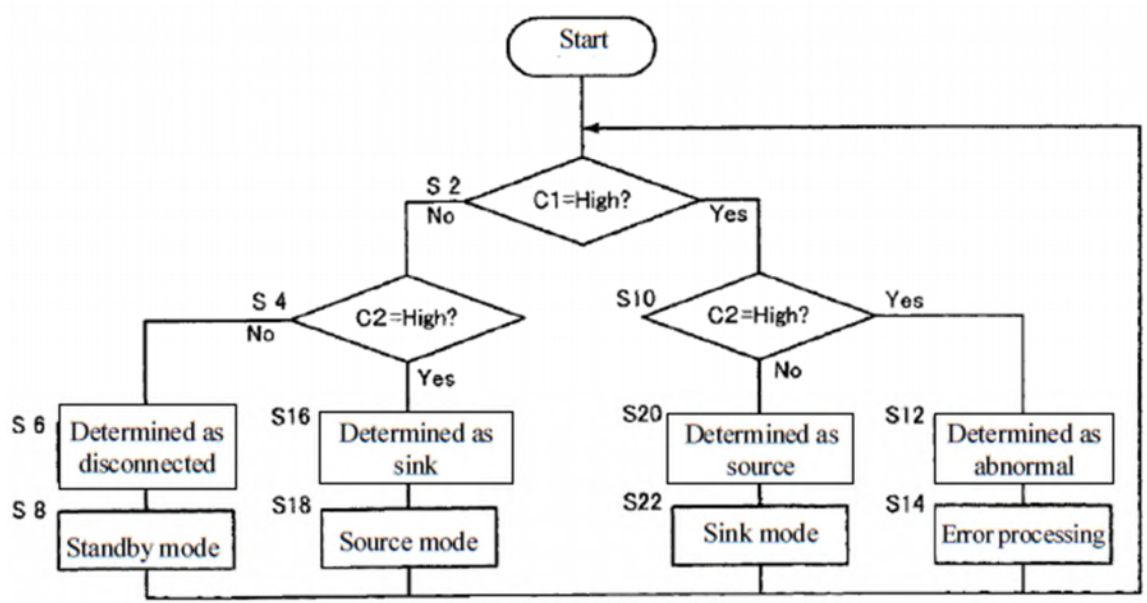
	provided at the channel of the connector, configuring communication logic of the first AV device to continue operating the first AV device in the AV sink operation mode;	200 and the external device 20 will be described. The power supply line monitor unit 160 repeatedly detects a voltage level VL1 of a power supply line 111 among a plurality of lines connected to the connector 110 at predetermined time intervals to generate a binary level signal (hereinafter, 'power supply line level') C1." Iwamoto at [0042]. "When the external device 40 to which the connector 110 is connected via the HDMI cable 200 is the source device 20src, the voltage level VL1 of the power source line 111 indicates a High level (5 V). In contrast, when the connected external device 40 is the sink device 20snk, is not connected, or is not operating due to not being energized despite being connected, the voltage level VL1 indicates a low level (0 V). The power supply line level C1 has a value of either High or Low corresponding to the level of the voltage level VL1." Iwamoto at [0043]. "The TDMS line monitor unit 170 repeatedly detects a voltage level VL2 of the TDMS line (specifically, a TDMS_CLK line) 114 included in the connector 110 at predetermined time intervals to generate a binary level signal (hereinafter, "TDMS line level") C2. When the connector 110 is connected to a sink device via the HDMI cable 200, the voltage level VL2 of the TDMS line 114 indicates a High level (3.3 V)." Iwamoto at [0044]. "In contrast, when the connector 110 is connected to a source device via the HDMI cable 200 or is not connected to another device, the voltage level VL2 indicates a low level (0 V). The TDMS line level C2 has a value of either High or Low corresponding to the level of the voltage level VL2." Iwamoto at [0045]. "Operation of the HDMI attribute switching processing unit 180 will be described below with reference to FIG. 2. The HDMI attribute switching processing unit 180 determines a function J of the external device connected to the connector 110 also used for connection between the source device and the sink device based on the power source line level C1 and the TDMS line level C2. Note that "function," in relation to the external device, refers to one of four states of 'disconnected,' 'abnormal,' 'sink,' and 'source.'" Iwamoto at [0046]. "State 1: The external device 20 is not connected to the source/sink dual-purpose device 100, or no current is applied despite being connected. State 2: The connected external device 20 is abnormal.

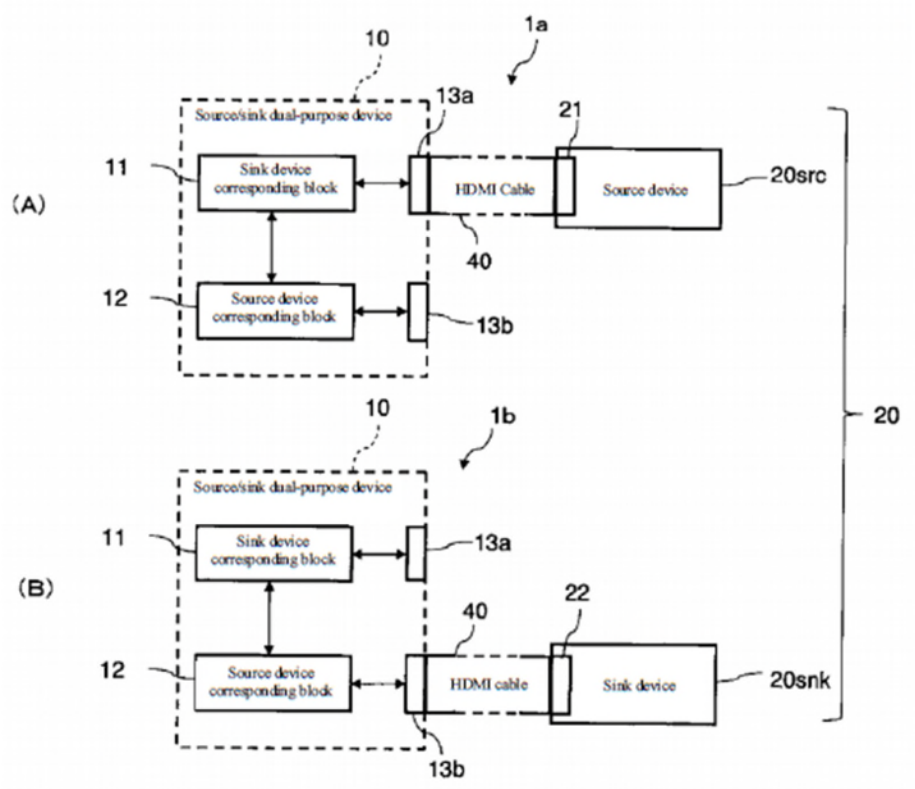
		State 3: A normal sink device 20snk is connected. State 4: A normal source device 20src is connected. State 5: The connection with the external device 20 of state 2 is cut off. State 6: The connection with the external device 20 of state 3 is cut off. State 7: The connection with the external device 20 of state 4 is cut off. State 8: The connection with the external equipment of state 5, state 6, and state 7 is restored." Iwamoto at [0072]. "In state 1 (non-connection), the source/sink dual-purpose device 100 is set to a standby mode by processing in step S2 (No), step S4 (No), step S6, and step S8. Then, the source/sink dual-purpose device 100 waits for the external device 20 to be connected while repeating the process of the flowchart of FIG. 3." Iwamoto at [0073]. "In state 2 (abnormal), the source/sink dual-purpose device 100 is set to the error processing mode by processing in step S2 (Yes), step S10 (Yes), step S12, and step S14. Then, the source/sink dual-purpose device 100 waits for the abnormality of the external device 20 to recover while repeating the process of the flowchart of FIG. 3." Iwamoto at [0074]. "In state 3 (sink), the source/sink dual-purpose device 100 is set to the source mode by the processing in step S2 (No), step S4 (Yes), step S16, and step S18. Then, the source/sink dual-purpose device 100 monitors the state of the external device 20 while repeating the process of the flowchart of FIG. 3. Then, when the state of the external device 20 changes, the operating mode of the device itself is reset in accordance with the change." Iwamoto at [0075]. "In state 4 (source), the source/sink dual-purpose device 100 is set to the sink mode by the processing in step S2 (Yes), step S10 (No), step S20, and step S22. Then, the source/sink dual-purpose device 100 monitors the state of the external device 20 while repeating the process of the flowchart of FIG. 3. Then, when the state of the external device 20 changes, the operating mode of the device itself is reset in accordance with the change." Iwamoto at [0076]. "In state 5, state 6, and state 7, the processing of state 1 described above is executed when the connection with the external device 20 in each state is cut off." Iwamoto at [0077].

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		"In state 8, when the connection with the external device 20 in each state is restored, processing of any of state 2, state 3, or state 4 is executed according to the state of the external device 20." Iwamoto at [0078]. "As described above, it is possible to use a single HDMI connector and automatically switch the attributes of the source device and the sink device without user operation. As a result, it is possible to reduce the cost and size of the device by reducing the number of required components, and to reduce the time and effort of the user to change the HDMI attribute (sink device/source device)." Iwamoto at [0079].  Iwamoto at Fig. 1.

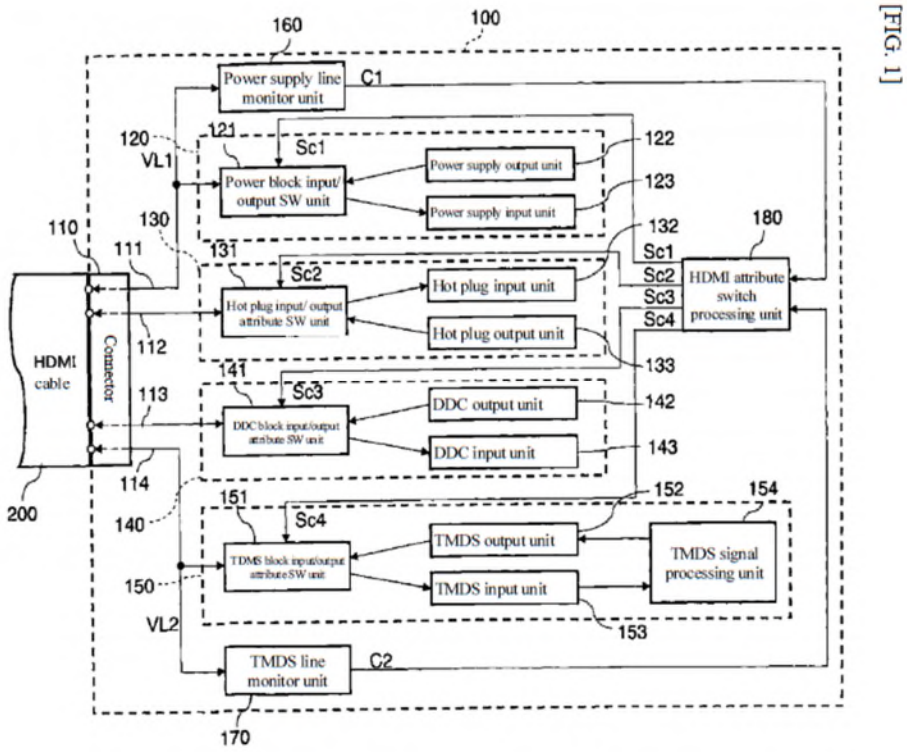
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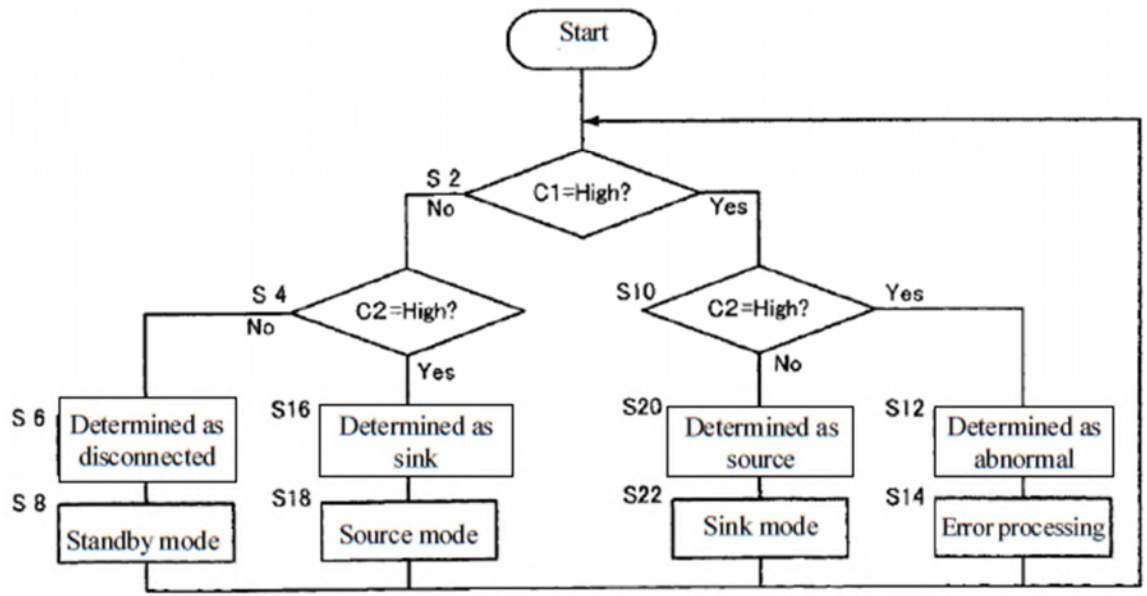
		 [FIG. 3] Iwamoto at Fig. 3.

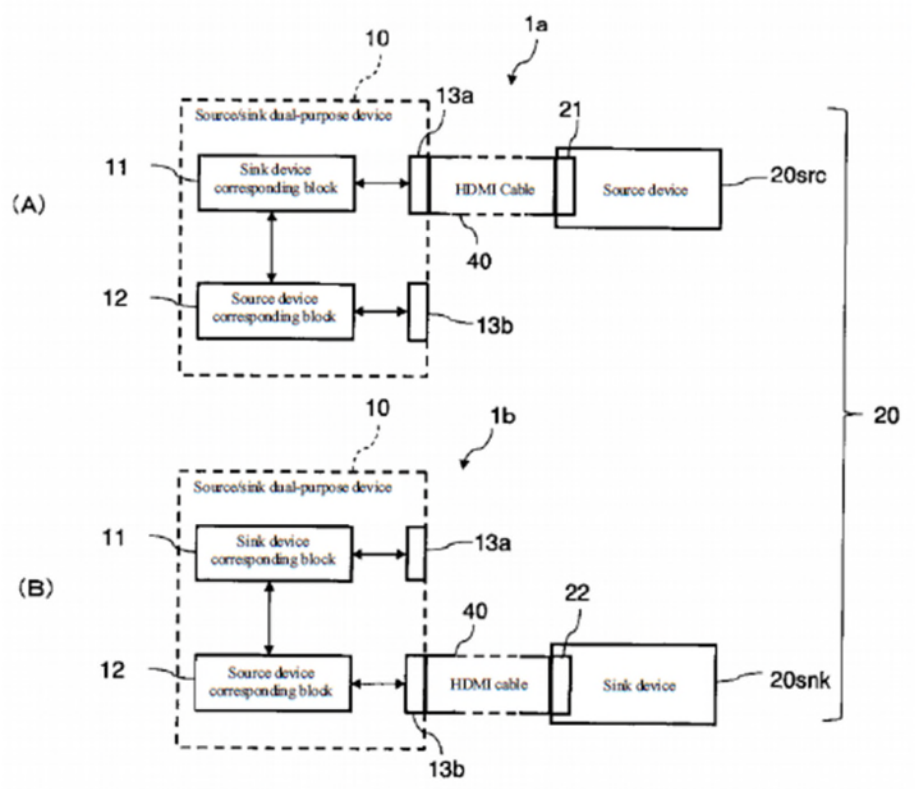
		 Iwamoto at Fig. 5. To the extent that Plaintiff contends that Iwamoto does not explicitly or inherently disclose this element, or render obvious this element, this element is obvious in combination with one or more references and/or with the knowledge of a person of ordinary skill in the art, as set forth in Defendant's Invalidity Contentions.
1(e)	when operating the first AV device in the AV sink operation mode, receiving AV	Iwamoto discloses and/or renders obvious this limitation. *See, e.g.*: "In contrast, when the source/sink dual-purpose device 100 realizes a sink device function, the power input unit 123 supplies power to the hot plug output unit 133, the DDC input unit 143, and

	data provided to the first AV device via the connector and receiving power from the first supply voltage provided to the first AV device at the channel of the connector;	the TDMS input unit 152. By providing the power output unit 122 and the power input unit 123 separately, backflow of current from the sink side to the source side can be prevented." Iwamoto at [0036]. "Thus, in the source/sink dual-purpose device 10 configured as the television with built-in DVD player, a video signal played back by the DVD player is normally displayed as a video by a television display, and an audio signal is output as audio from a speaker of the television. However, there are times when a user would like to view the video on a projector without viewing the video on the television display. Furthermore, it may be desired that the video and audio captured by the digital video camera be played back by a display and a speaker of the source/sink dual-purpose device 10." Iwamoto at [0005]. "In order to respond to such desires, it is required to receive a signal from an external source device to the sink device corresponding block 11 provided in the source/sink dual-purpose device 10 and to supply a signal from the source device corresponding block 12 to the external sink device." Iwamoto at [0006]. "The present invention has been configured in view of such conventional problems, and an object thereof is to provide a source/sink dual-purpose device that can detect a functional attribute of an HDMI device connected to a single connector. To provide a source/sink dual-purpose device capable of automatically switching its own functions according to the detected function attribute of the device." Iwamoto at [0016]. "In a memory (not illustrated) of the DDC input unit 143, when the source/sink dual-purpose device 100 functions as a sink, a displayable video format is stored as the EDID. The EDID stored in the memory is read out by access from the source device 20src when the source/sink dual-purpose device 100 is connected to the source device 20src." Iwamoto at [0039]. "The TDMS input unit 153 receives the video data and the TDMS system audio data transmitted from the source device 20src connected to the HDMI cable 200 when the source/sink dual-purpose device 100 functions as the sink. The video data and the audio data are transferred from the TDMS input unit 153 to the TMDS signal processing unit 154 and converted into video data and audio data before TMDS processing is performed by the TDMS signal processing unit 154. The problem of

		impedance mismatch of the TDMS line 114 can be eliminated by providing the TDMS output unit 152 and the TDMS input unit 153 separately." Iwamoto at [0041]. "Next, two monitoring units 160 and 170 that monitor the connection state between the HDMI cable 200 and the external device 20 will be described. The power supply line monitor unit 160 repeatedly detects a voltage level VL1 of a power supply line 111 among a plurality of lines connected to the connector 110 at predetermined time intervals to generate a binary level signal (hereinafter, 'power supply line level') C1." Iwamoto at [0042]. "When the external device 40 to which the connector 110 is connected via the HDMI cable 200 is the source device 20src, the voltage level VL1 of the power source line 111 indicates a High level (5 V). In contrast, when the connected external device 40 is the sink device 20snk, is not connected, or is not operating due to not being energized despite being connected, the voltage level VL1 indicates a low level (0 V). The power supply line level C1 has a value of either High or Low corresponding to the level of the voltage level VL1." Iwamoto at [0043]. "The TDMS line monitor unit 170 repeatedly detects a voltage level VL2 of the TDMS line (specifically, a TDMS_CLK line) 114 included in the connector 110 at predetermined time intervals to generate a binary level signal (hereinafter, "TDMS line level") C2. When the connector 110 is connected to a sink device via the HDMI cable 200, the voltage level VL2 of the TDMS line 114 indicates a High level (3.3 V)." Iwamoto at [0044]. "In contrast, when the connector 110 is connected to a source device via the HDMI cable 200 or is not connected to another device, the voltage level VL2 indicates a low level (0 V). The TDMS line level C2 has a value of either High or Low corresponding to the level of the voltage level VL2." Iwamoto at [0045]. "Operation of the HDMI attribute switching processing unit 180 will be described below with reference to FIG. 2. The HDMI attribute switching processing unit 180 determines a function J of the external device connected to the connector 110 also used for connection between the source device and the sink device based on the power source line level C1 and the TDMS line level C2. Note that "function," in relation to the external device, refers to one of four states of 'disconnected,' 'abnormal,' 'sink,' and 'source.'" Iwamoto at [0046].

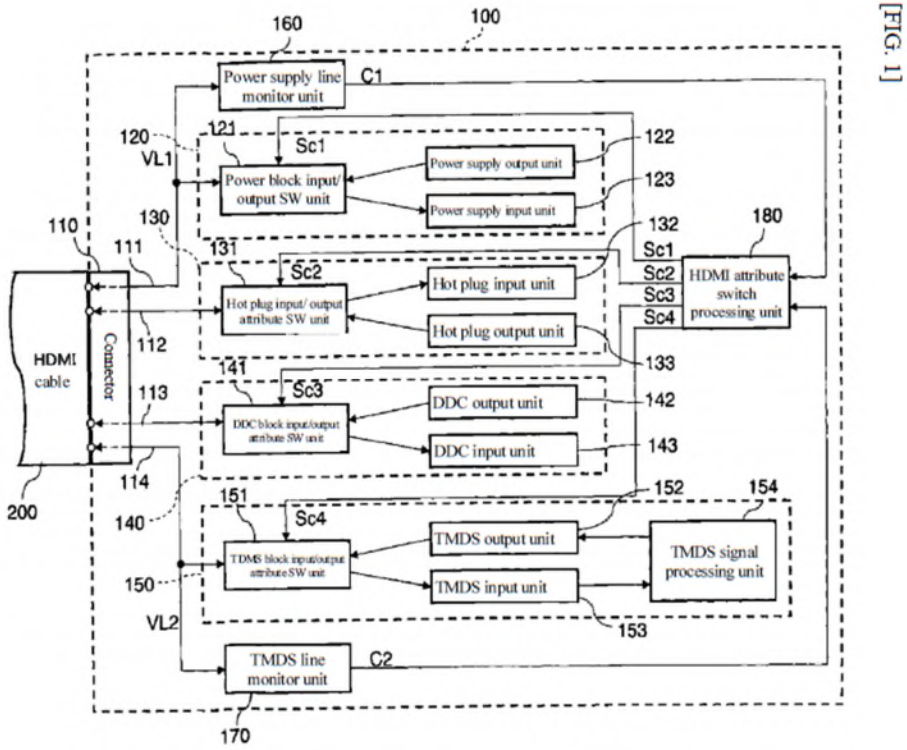
		"In state 4 (source), the source/sink dual-purpose device 100 is set to the sink mode by the processing in step S2 (Yes), step S10 (No), step S20, and step S22. Then, the source/sink dual-purpose device 100 monitors the state of the external device 20 while repeating the process of the flowchart of FIG. 3. Then, when the state of the external device 20 changes, the operating mode of the device itself is reset in accordance with the change." Iwamoto at [0076].  Iwamoto at Fig. 1.

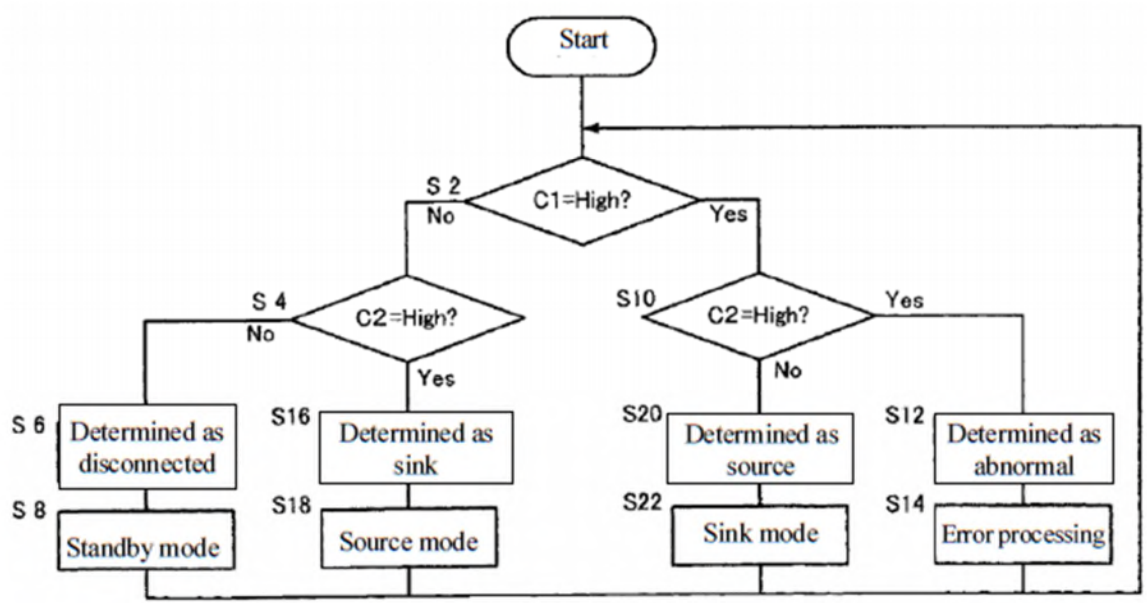
		 [FIG. 3] Iwamoto at Fig. 3.

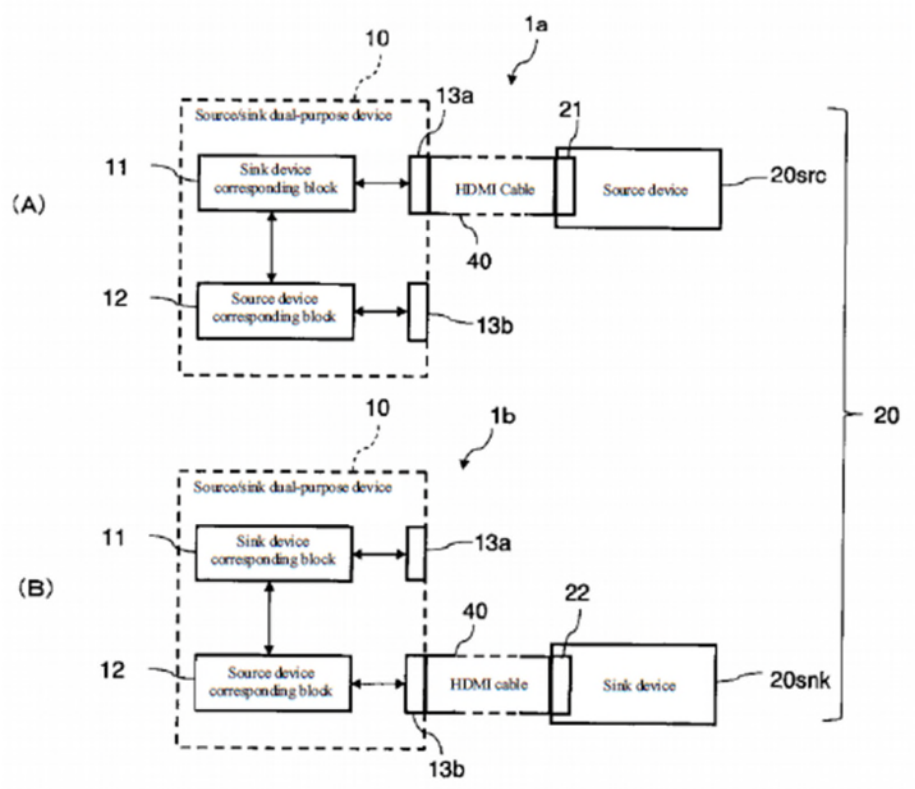
		 Iwamoto at Fig. 5. To the extent that Plaintiff contends that Iwamoto does not explicitly or inherently disclose this element, or render obvious this element, this element is obvious in combination with one or more references and/or with the knowledge of a person of ordinary skill in the art, as set forth in Defendant's Invalidity Contentions.
1(f)	in response to determining that the first supply voltage is not provided at the	Iwamoto discloses and/or renders obvious this limitation. *See, e.g.*: "Next, two monitoring units 160 and 170 that monitor the connection state between the HDMI cable 200 and the external device 20 will be described. The power supply line monitor unit 160 repeatedly

	channel of the connector, configuring the communication logic of the first AV device to transition the first AV device from the AV sink operation mode to an AV source operation mode; and	detects a voltage level VL1 of a power supply line 111 among a plurality of lines connected to the connector 110 at predetermined time intervals to generate a binary level signal (hereinafter, 'power supply line level') C1." Iwamoto at [0042]. "When the external device 40 to which the connector 110 is connected via the HDMI cable 200 is the source device 20src, the voltage level VL1 of the power source line 111 indicates a High level (5 V). In contrast, when the connected external device 40 is the sink device 20snk, is not connected, or is not operating due to not being energized despite being connected, the voltage level VL1 indicates a low level (0 V). The power supply line level C1 has a value of either High or Low corresponding to the level of the voltage level VL1." Iwamoto at [0043]. "The TDMS line monitor unit 170 repeatedly detects a voltage level VL2 of the TDMS line (specifically, a TDMS_CLK line) 114 included in the connector 110 at predetermined time intervals to generate a binary level signal (hereinafter, "TDMS line level") C2. When the connector 110 is connected to a sink device via the HDMI cable 200, the voltage level VL2 of the TDMS line 114 indicates a High level (3.3 V)." Iwamoto at [0044]. "In contrast, when the connector 110 is connected to a source device via the HDMI cable 200 or is not connected to another device, the voltage level VL2 indicates a low level (0 V). The TDMS line level C2 has a value of either High or Low corresponding to the level of the voltage level VL2." Iwamoto at [0045]. "Operation of the HDMI attribute switching processing unit 180 will be described below with reference to FIG. 2. The HDMI attribute switching processing unit 180 determines a function J of the external device connected to the connector 110 also used for connection between the source device and the sink device based on the power source line level C1 and the TDMS line level C2. Note that "function," in relation to the external device, refers to one of four states of 'disconnected,' 'abnormal,' 'sink,' and 'source.'" Iwamoto at [0046]. "State 1: The external device 20 is not connected to the source/sink dual-purpose device 100, or no current is applied despite being connected. State 2: The connected external device 20 is abnormal. State 3: A normal sink device 20snk is connected.

		State 4: A normal source device 20src is connected. State 5: The connection with the external device 20 of state 2 is cut off. State 6: The connection with the external device 20 of state 3 is cut off. State 7: The connection with the external device 20 of state 4 is cut off. State 8: The connection with the external equipment of state 5, state 6, and state 7 is restored." Iwamoto at [0072]. "In state 1 (non-connection), the source/sink dual-purpose device 100 is set to a standby mode by processing in step S2 (No), step S4 (No), step S6, and step S8. Then, the source/sink dual-purpose device 100 waits for the external device 20 to be connected while repeating the process of the flowchart of FIG. 3." Iwamoto at [0073]. "In state 2 (abnormal), the source/sink dual-purpose device 100 is set to the error processing mode by processing in step S2 (Yes), step S10 (Yes), step S12, and step S14. Then, the source/sink dual-purpose device 100 waits for the abnormality of the external device 20 to recover while repeating the process of the flowchart of FIG. 3." Iwamoto at [0074]. "In state 3 (sink), the source/sink dual-purpose device 100 is set to the source mode by the processing in step S2 (No), step S4 (Yes), step S16, and step S18. Then, the source/sink dual-purpose device 100 monitors the state of the external device 20 while repeating the process of the flowchart of FIG. 3. Then, when the state of the external device 20 changes, the operating mode of the device itself is reset in accordance with the change." Iwamoto at [0075]. "In state 4 (source), the source/sink dual-purpose device 100 is set to the sink mode by the processing in step S2 (Yes), step S10 (No), step S20, and step S22. Then, the source/sink dual-purpose device 100 monitors the state of the external device 20 while repeating the process of the flowchart of FIG. 3. Then, when the state of the external device 20 changes, the operating mode of the device itself is reset in accordance with the change." Iwamoto at [0076]. "In state 5, state 6, and state 7, the processing of state 1 described above is executed when the connection with the external device 20 in each state is cut off." Iwamoto at [0077].

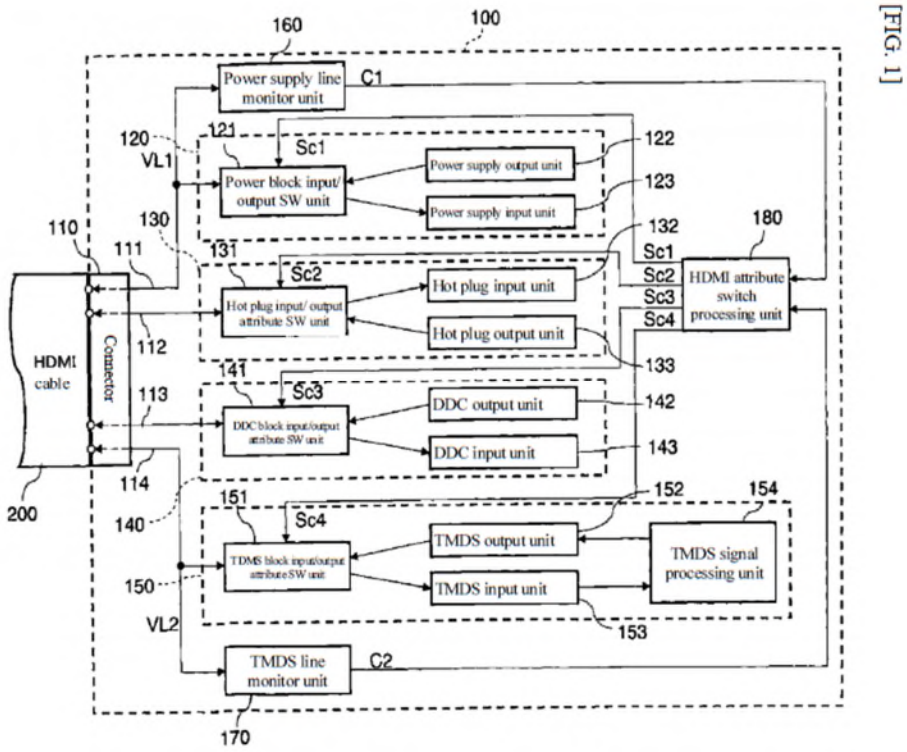
		"In state 8, when the connection with the external device 20 in each state is restored, processing of any of state 2, state 3, or state 4 is executed according to the state of the external device 20." Iwamoto at [0078]. "As described above, it is possible to use a single HDMI connector and automatically switch the attributes of the source device and the sink device without user operation. As a result, it is possible to reduce the cost and size of the device by reducing the number of required components, and to reduce the time and effort of the user to change the HDMI attribute (sink device/source device)." Iwamoto at [0079].  Iwamoto at Fig. 1.

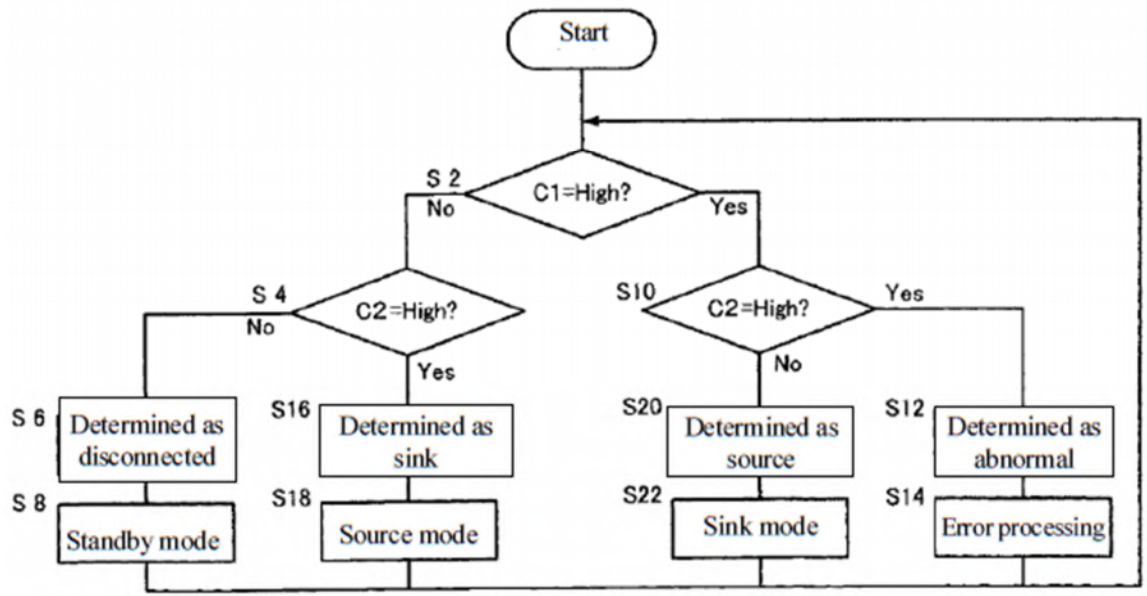
		 [FIG. 3] Iwamoto at Fig. 3.

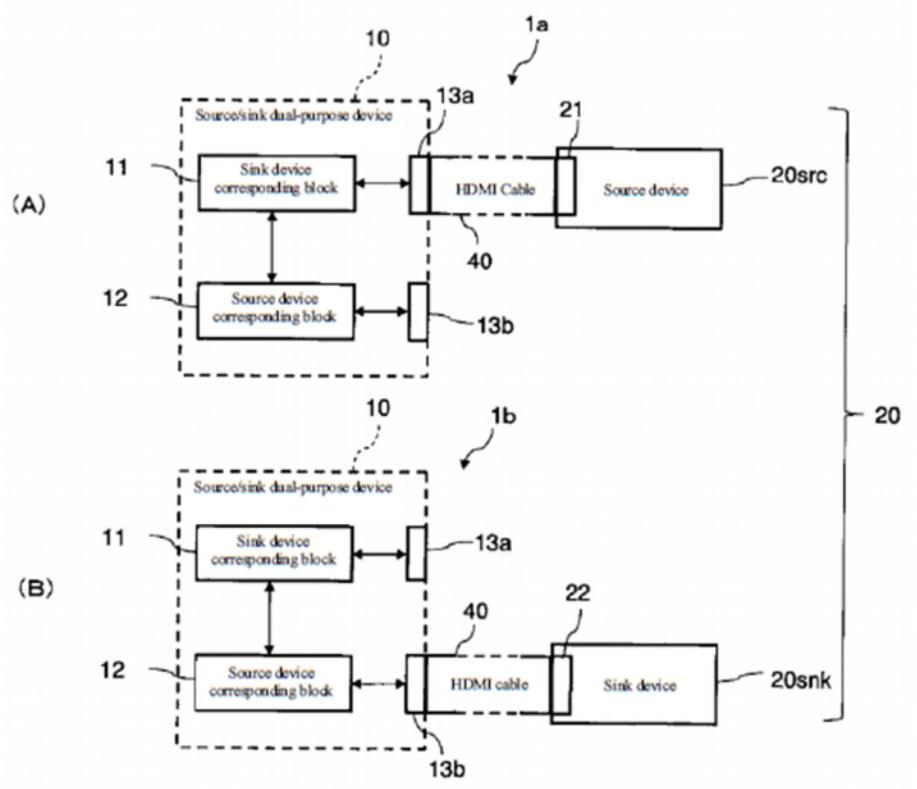
		 Iwamoto at Fig. 5. To the extent that Plaintiff contends that Iwamoto does not explicitly or inherently disclose this element, or render obvious this element, this element is obvious in combination with one or more references and/or with the knowledge of a person of ordinary skill in the art, as set forth in Defendant's Invalidity Contentions.
1(g)	when operating the first AV device in the AV source operation mode, sending AV	Iwamoto discloses and/or renders obvious this limitation. *See, e.g.*: "In contrast, when the source/sink dual-purpose device 100 realizes a sink device function, the power input unit 123 supplies power to the hot plug output unit 133, the DDC input unit 143, and

	data via the connector and providing a second supply voltage at the channel of the connector.	the TDMS input unit 152. By providing the power output unit 122 and the power input unit 123 separately, backflow of current from the sink side to the source side can be prevented." Iwamoto at [0036]. "Thus, in the source/sink dual-purpose device 10 configured as the television with built-in DVD player, a video signal played back by the DVD player is normally displayed as a video by a television display, and an audio signal is output as audio from a speaker of the television. However, there are times when a user would like to view the video on a projector without viewing the video on the television display. Furthermore, it may be desired that the video and audio captured by the digital video camera be played back by a display and a speaker of the source/sink dual-purpose device 10." Iwamoto at [0005]. "In order to respond to such desires, it is required to receive a signal from an external source device to the sink device corresponding block 11 provided in the source/sink dual-purpose device 10 and to supply a signal from the source device corresponding block 12 to the external sink device." Iwamoto at [0006]. "The present invention has been configured in view of such conventional problems, and an object thereof is to provide a source/sink dual-purpose device that can detect a functional attribute of an HDMI device connected to a single connector. To provide a source/sink dual-purpose device capable of automatically switching its own functions according to the detected function attribute of the device." Iwamoto at [0016]. "In a memory (not illustrated) of the DDC input unit 143, when the source/sink dual-purpose device 100 functions as a sink, a displayable video format is stored as the EDID. The EDID stored in the memory is read out by access from the source device 20src when the source/sink dual-purpose device 100 is connected to the source device 20src." Iwamoto at [0039]. "The TDMS input unit 153 receives the video data and the TDMS system audio data transmitted from the source device 20src connected to the HDMI cable 200 when the source/sink dual-purpose device 100 functions as the sink. The video data and the audio data are transferred from the TDMS input unit 153 to the TMDS signal processing unit 154 and converted into video data and audio data before TMDS processing is performed by the TDMS signal processing unit 154. The problem of

		impedance mismatch of the TDMS line 114 can be eliminated by providing the TDMS output unit 152 and the TDMS input unit 153 separately." Iwamoto at [0041]. "Next, two monitoring units 160 and 170 that monitor the connection state between the HDMI cable 200 and the external device 20 will be described. The power supply line monitor unit 160 repeatedly detects a voltage level VL1 of a power supply line 111 among a plurality of lines connected to the connector 110 at predetermined time intervals to generate a binary level signal (hereinafter, 'power supply line level') C1." Iwamoto at [0042]. "When the external device 40 to which the connector 110 is connected via the HDMI cable 200 is the source device 20src, the voltage level VL1 of the power source line 111 indicates a High level (5 V). In contrast, when the connected external device 40 is the sink device 20snk, is not connected, or is not operating due to not being energized despite being connected, the voltage level VL1 indicates a low level (0 V). The power supply line level C1 has a value of either High or Low corresponding to the level of the voltage level VL1." Iwamoto at [0043]. "The TDMS line monitor unit 170 repeatedly detects a voltage level VL2 of the TDMS line (specifically, a TDMS_CLK line) 114 included in the connector 110 at predetermined time intervals to generate a binary level signal (hereinafter, "TDMS line level") C2. When the connector 110 is connected to a sink device via the HDMI cable 200, the voltage level VL2 of the TDMS line 114 indicates a High level (3.3 V)." Iwamoto at [0044]. "In contrast, when the connector 110 is connected to a source device via the HDMI cable 200 or is not connected to another device, the voltage level VL2 indicates a low level (0 V). The TDMS line level C2 has a value of either High or Low corresponding to the level of the voltage level VL2." Iwamoto at [0045]. "Operation of the HDMI attribute switching processing unit 180 will be described below with reference to FIG. 2. The HDMI attribute switching processing unit 180 determines a function J of the external device connected to the connector 110 also used for connection between the source device and the sink device based on the power source line level C1 and the TDMS line level C2. Note that "function," in relation to the external device, refers to one of four states of 'disconnected,' 'abnormal,' 'sink,' and 'source.'" Iwamoto at [0046].

		"In state 3 (sink), the source/sink dual-purpose device 100 is set to the source mode by the processing in step S2 (No), step S4 (Yes), step S16, and step S18. Then, the source/sink dual-purpose device 100 monitors the state of the external device 20 while repeating the process of the flowchart of FIG. 3. Then, when the state of the external device 20 changes, the operating mode of the device itself is reset in accordance with the change." Iwamoto at [0076].  [FIG. 1] Iwamoto at Fig. 1.

		 [FIG. 3] Iwamoto at Fig. 3.

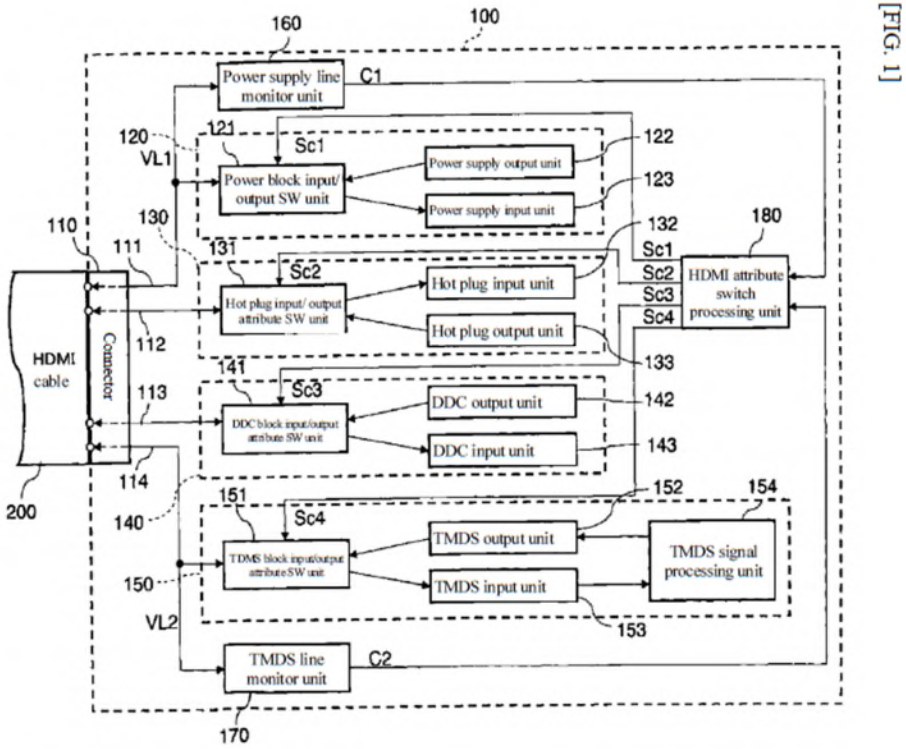


Iwamoto at Fig. 5.

To the extent that Plaintiff contends that Iwamoto does not explicitly or inherently disclose this element, or render obvious this element, this element is obvious in combination with one or more references and/or with the knowledge of a person of ordinary skill in the art, as set forth in Defendant's Invalidity Contentions.

Claim 8

8[p]	An audio/video (AV) device comprising:	To the extent the preamble is limiting, Iwamoto discloses this element and/or renders it obvious either alone or in combination with other references and/or the knowledge of one of ordinary skill in the art. *See, e.g.*: "The present invention has been configured in view of such conventional problems, and an object thereof is to provide a source/sink dual-purpose device that can detect a functional attribute of an HDMI device connected to a single connector. To provide a source/sink dual-purpose device capable of automatically switching its own functions according to the detected function attribute of the device." Iwamoto at [0016]. "In order to achieve the foregoing object, the source/sink dual-purpose device of the present invention is a source/sink dual-purpose device conforming to the HDMI standard, provided with first function means for realizing a function as a source device and second function means for realizing a function as a sink device, a source/sink dual-purpose device conforming to the HDMI standard, provided with a second function means for realizing, being provided with a connector for connecting one of the first function means and the second function means to an external device conforming to the HDMI standard, first voltage level monitor means for detecting the voltage level of the power line of the connector, second voltage level monitor means for detecting the voltage level of a TMDS_CLK line of the connector, and function determination means for determining a function of the external device on the basis of the detected two voltage levels." Iwamoto at [0017].

		 Iwamoto at Fig. 1. To the extent that Plaintiff contends that Iwamoto does not explicitly or inherently disclose this element, or render obvious this element, this element is obvious in combination with one or more references and/or with the knowledge of a person of ordinary skill in the art, as set forth in Defendant's Invalidity Contentions.
8(a)	communication logic to couple to a	Iwamoto discloses and/or renders obvious this limitation. *See, e.g.*:

	connector, the communication logic including circuitry configured to implement:	*See* exemplary disclosures and corresponding discussion for claim element 1(c) and 1(d).
8(a)(1)(i)	an AV sink operation mode for the communication logic to receive AV data provided to the AV device at the connector and to receive power from a first supply voltage provided to the AV device via a channel of the connector,	*See* exemplary disclosures and corresponding discussion for claim element 1(e).
8(a)(1)(ii)	the AV sink operation mode being a default mode of operation for the AV device, and	*See* exemplary disclosures and corresponding discussion for claim element 1(a).
8(a)(2)	an AV source operation mode for the communication logic to send AV data from the AV device via the connector and to provide a second supply voltage at the	*See* exemplary disclosures and corresponding discussion for claim element 1(g).

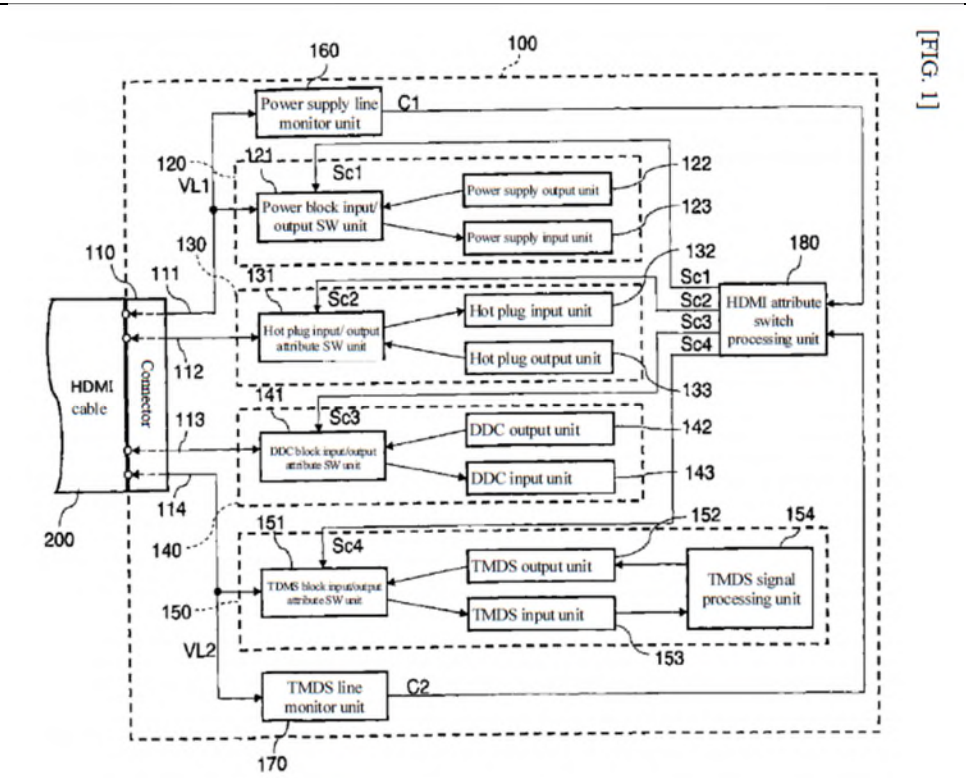
	channel of the connector; and	
8(b)(1)	control logic including circuitry to configure the communication logic to initialize the AV device to operate in the default AV sink operation mode in response to a power-on-reset or powering up of the AV device,	*See* exemplary disclosures and corresponding discussion for claim element 1(a).
8(b)(2)	to continue operating the AV device in the AV sink operation mode in response to determining that the first supply voltage is provided at the channel of the connector, and to configure the communication logic to transition the AV device from the AV sink operation mode to the AV source operation mode in response to determining that the	*See* exemplary disclosures and corresponding discussion for claim element 1(d), 1(f), and 1(c).

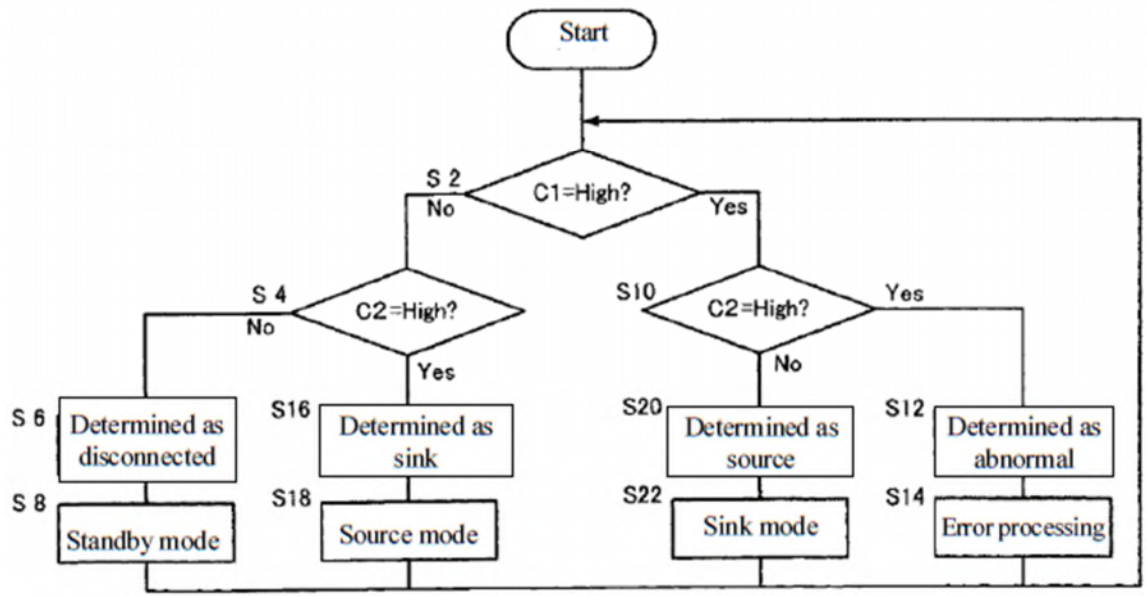
	first supply voltage is not provided at the channel of the connector.	
Claim 11		
11(a)	The device of claim 8, further comprising: detector logic to detect, while the communication logic is in the default operation mode, a coupling of the AV device to another AV device via the connector; and	Iwamoto discloses, expressly or inherently, the device of claim 11 under any proposed construction, and further discloses and/or renders obvious limitation 11(a). *See, e.g.*: *See* exemplary disclosures and corresponding discussion for claim 8 and claim element 1(b).
11(b)	wherein the communication logic is further configured to perform an AV data exchange with the other device in response to the detection.	Iwamoto discloses and/or renders obvious this limitation. *See, e.g.*: "In contrast, when the source/sink dual-purpose device 100 realizes a sink device function, the power input unit 123 supplies power to the hot plug output unit 133, the DDC input unit 143, and the TDMS input unit 152. By providing the power output unit 122 and the power input unit 123 separately, backflow of current from the sink side to the source side can be prevented." Iwamoto at [0036]. "Thus, in the source/sink dual-purpose device 10 configured as the television with built-in DVD player, a video signal played back by the DVD player is normally displayed as a video by a television display, and an audio signal is output as audio from a speaker of the television. However, there are times when a user would like to view the video on a projector without viewing the video on the television display. Furthermore, it may be desired that the video and audio captured by the

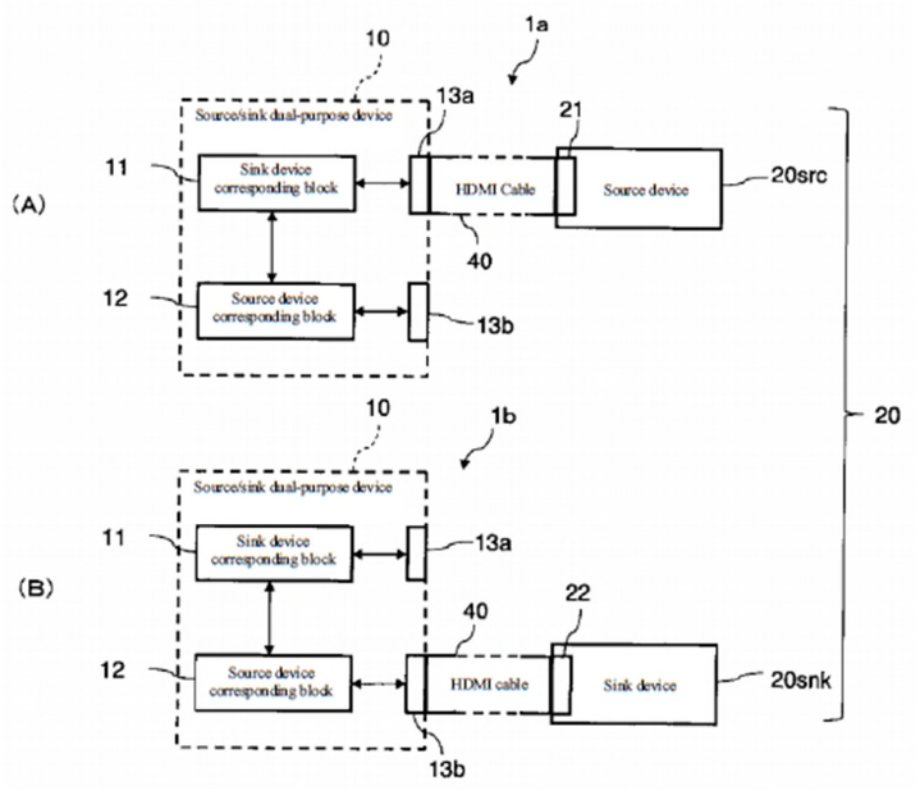
		digital video camera be played back by a display and a speaker of the source/sink dual-purpose device 10." Iwamoto at [0005]. "In order to respond to such desires, it is required to receive a signal from an external source device to the sink device corresponding block 11 provided in the source/sink dual-purpose device 10 and to supply a signal from the source device corresponding block 12 to the external sink device." Iwamoto at [0006]. "The present invention has been configured in view of such conventional problems, and an object thereof is to provide a source/sink dual-purpose device that can detect a functional attribute of an HDMI device connected to a single connector. To provide a source/sink dual-purpose device capable of automatically switching its own functions according to the detected function attribute of the device." Iwamoto at [0016]. "In the DDC block 140, when the source/sink dual-purpose device 100 functions as a source, EDID data related to a displayable video format from the sink device 20snk connected to the HDMI cable 200 is transferred to a DDC output unit 142 and stored in a memory (not illustrated). The DDC output unit 142 sets a video format on the basis of a user instruction from the EDID stored in a memory." Iwamoto at [0038]. "In a memory (not illustrated) of the DDC input unit 143, when the source/sink dual-purpose device 100 functions as a sink, a displayable video format is stored as the EDID. The EDID stored in the memory is read out by access from the source device 20src when the source/sink dual-purpose device 100 is connected to the source device 20src." Iwamoto at [0039]. "In the TDMS block 150, when the source/sink dual-purpose device 100 functions as a source, a TDMS output unit 152 outputs video data and audio data converted into TDMS system data by the TDMS signal processing unit 154 to the sink device 20snk connected to the HDMI cable 200." Iwamoto at [0040]. "The TDMS input unit 153 receives the video data and the TDMS system audio data transmitted from the source device 20src connected to the HDMI cable 200 when the source/sink dual-purpose device 100 functions as the sink. The video data and the audio data are transferred from the TDMS

		input unit 153 to the TMDS signal processing unit 154 and converted into video data and audio data before TMDS processing is performed by the TDMS signal processing unit 154. The problem of impedance mismatch of the TDMS line 114 can be eliminated by providing the TDMS output unit 152 and the TDMS input unit 153 separately." Iwamoto at [0041]. "Next, two monitoring units 160 and 170 that monitor the connection state between the HDMI cable 200 and the external device 20 will be described. The power supply line monitor unit 160 repeatedly detects a voltage level VL1 of a power supply line 111 among a plurality of lines connected to the connector 110 at predetermined time intervals to generate a binary level signal (hereinafter, 'power supply line level') C1." Iwamoto at [0042]. "When the external device 40 to which the connector 110 is connected via the HDMI cable 200 is the source device 20src, the voltage level VL1 of the power source line 111 indicates a High level (5 V). In contrast, when the connected external device 40 is the sink device 20snk, is not connected, or is not operating due to not being energized despite being connected, the voltage level VL1 indicates a low level (0 V). The power supply line level C1 has a value of either High or Low corresponding to the level of the voltage level VL1." Iwamoto at [0043]. "The TDMS line monitor unit 170 repeatedly detects a voltage level VL2 of the TDMS line (specifically, a TDMS_CLK line) 114 included in the connector 110 at predetermined time intervals to generate a binary level signal (hereinafter, "TDMS line level") C2. When the connector 110 is connected to a sink device via the HDMI cable 200, the voltage level VL2 of the TDMS line 114 indicates a High level (3.3 V)." Iwamoto at [0044]. "In contrast, when the connector 110 is connected to a source device via the HDMI cable 200 or is not connected to another device, the voltage level VL2 indicates a low level (0 V). The TDMS line level C2 has a value of either High or Low corresponding to the level of the voltage level VL2." Iwamoto at [0045]. "Operation of the HDMI attribute switching processing unit 180 will be described below with reference to FIG. 2. The HDMI attribute switching processing unit 180 determines a function J of the external device connected to the connector 110 also used for connection between the source device and the sink device based on the power source line level C1 and the TDMS line level C2.

		Note that "function," in relation to the external device, refers to one of four states of 'disconnected,' 'abnormal,' 'sink,' and 'source.'" Iwamoto at [0046]. "In state 3 (sink), the source/sink dual-purpose device 100 is set to the source mode by the processing in step S2 (No), step S4 (Yes), step S16, and step S18. Then, the source/sink dual-purpose device 100 monitors the state of the external device 20 while repeating the process of the flowchart of FIG. 3. Then, when the state of the external device 20 changes, the operating mode of the device itself is reset in accordance with the change." Iwamoto at [0075]. "In state 4 (source), the source/sink dual-purpose device 100 is set to the sink mode by the processing in step S2 (Yes), step S10 (No), step S20, and step S22. Then, the source/sink dual-purpose device 100 monitors the state of the external device 20 while repeating the process of the flowchart of FIG. 3. Then, when the state of the external device 20 changes, the operating mode of the device itself is reset in accordance with the change." Iwamoto at [0076].

		 Iwamoto at Fig. 1.

		 [FIG. 3] Iwamoto at Fig. 3.

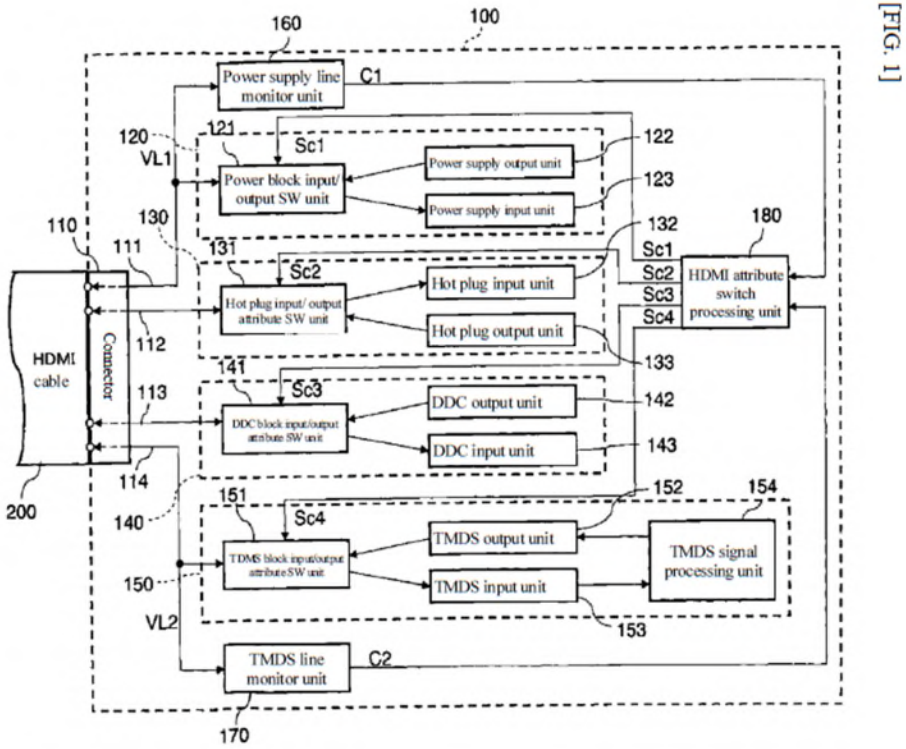


Iwamoto at Fig. 5.

To the extent that Plaintiff contends that Iwamoto does not explicitly or inherently disclose this element, or render obvious this element, this element is obvious in combination with one or more references and/or with the knowledge of a person of ordinary skill in the art, as set forth in Defendant's Invalidity Contentions.

Claim 14

14[p]	A system comprising:	To the extent the preamble is limiting, Iwamoto discloses this element and/or renders it obvious either alone or in combination with other references and/or the knowledge of one of ordinary skill in the art. *See, e.g.*: "The present invention has been configured in view of such conventional problems, and an object thereof is to provide a source/sink dual-purpose device that can detect a functional attribute of an HDMI device connected to a single connector. To provide a source/sink dual-purpose device capable of automatically switching its own functions according to the detected function attribute of the device." Iwamoto at [0016]. "In order to achieve the foregoing object, the source/sink dual-purpose device of the present invention is a source/sink dual-purpose device conforming to the HDMI standard, provided with first function means for realizing a function as a source device and second function means for realizing a function as a sink device, a source/sink dual-purpose device conforming to the HDMI standard, provided with a second function means for realizing, being provided with a connector for connecting one of the first function means and the second function means to an external device conforming to the HDMI standard, first voltage level monitor means for detecting the voltage level of the power line of the connector, second voltage level monitor means for detecting the voltage level of a TMDS_CLK line of the connector, and function determination means for determining a function of the external device on the basis of the detected two voltage levels." Iwamoto at [0017].

		 Iwamoto at Fig. 1. To the extent that Plaintiff contends that Iwamoto does not explicitly or inherently disclose this element, or render obvious this element, this element is obvious in combination with one or more references and/or with the knowledge of a person of ordinary skill in the art, as set forth in Defendant's Invalidity Contentions.
14(a)	a connector;	*See* exemplary disclosures and corresponding discussion for claim element 1(c).

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14(b)	communication logic of an audio/video (AV) device coupled to the connector, the communication logic including circuitry configured to implement:	*See* exemplary disclosures and corresponding discussion for claim element 1(c) and 1(d).
14(b)(1)	an AV sink operation mode for the communication logic to receive AV data provided to the system at the connector and to receive power from a first supply voltage provided to the system at a channel of the connector, the AV sink operation mode being a default mode of operation for the system, and	*See* exemplary disclosures and corresponding discussion for claim element 1(a) and 1(e).
14(b)(2)	an AV source operation mode for the communication logic to send AV data from the system via the connector and to provide a second	*See* exemplary disclosures and corresponding discussion for claim element 1(g).

	supply voltage at the channel of the connector; and	
14(c)	control logic including circuitry to configure the communication logic to initialize the AV device to operate in the default AV sink operation mode in response to a power-on-reset or powering up of the AV device, to continue operating the AV device in the AV sink operation mode in response to determining that the first supply voltage is provided at the channel of the connector, and to configure the communication logic to transition the AV device from the AV sink operation mode to the AV source operation mode in response to	*See* exemplary disclosures and corresponding discussion for claim element 1(a), 1(c), 1(d), and 1(f).

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	determining that the first supply voltage is not provided at the channel of the connector.	

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Exhibit D-2

Invalidity of the ’265 Patent in View of U.S. Pat. App. Pub. No. 2009/0046690 A1 (Hsieh).

This chart provides examples of where the prior art reference discloses, either expressly or inherently, the claim elements of asserted U.S. Patent No. 9,232,265 (“the ’265 patent”). The citations herein are exemplary and are not exhaustive; Defendant has cited the most relevant portions of the identified prior art. For each citation, Defendant hereby incorporates by reference the entire cited prior art reference, and reserves the right to rely on uncited portions of each identified prior art reference. To provide context or identify the state of the art at the time of the alleged invention, Defendant reserves the right to rely on: (1) uncited portions of the identified prior art; (2) other prior art not identified herein; (3) references that show the state of the art (irrespective of whether such references themselves qualify as prior art); (4) factual testimony from the inventors or authors of the prior art references, or purveyors of prior art devices; and (5) expert testimony.

Where Defendant cites a figure, the citation includes any text associated with the figure. Where Defendant cites passages relating to a figure, the citation includes the associated figure any other text associated with that figure. Where Defendant cites particular prior art as disclosing a claim element, that citation equally applies to all identical or similar claim elements in this chart. Defendant reserves the right to further assert that a claim element is inherent, the element would have been obvious to a person of ordinary skill in the art, or the element is disclosed in other prior art that may be combined with the cited prior art. To establish the inherency of certain features of the prior art to invalidate the asserted claims, Defendant may rely on cited or uncited portions of the prior art, other documents, factual testimony, and expert testimony.

This invalidity chart is based on information presently available to Defendant, and the information herein is provided as a non-limiting example.

Hsieh was filed on August 16, 2007, and published on February 19, 2009; therefore, Hsieh is prior art under at least 35 U.S.C. § 102(b).

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Exhibit D-2

Claim Limitation		Hsieh
Claim 1		
1[p]	A method comprising:	To the extent the preamble is limiting, Hsieh discloses this element and/or renders it obvious either alone or in combination with other references and/or the knowledge of one of ordinary skill in the art. *See, e.g.*: "The HSDI structure, such as High-Definition Multimedia Interface (HDMI), is a digital audio/video interface capable of transmitting uncompressed data streams. HSDI is compatible with Digital Rights Management technology and provides an interface between any compatible digital audio/ video source device (e.g. a set-top box, a DVD recorder, or a PC) and a compatible digital audio/video sink device, such as a digital television. Therefore, it has become a modern replacement for conventional analog standards such as SCART or RCA connectors." Hsieh at [0002]. "One objective of the invention is therefore to provide a bidirectional HSDI transceiver and a method for supplying a bi-directional communication process on a HSDI device, to solve the above-mentioned problems." Hsieh at [0004]. "FIG. 1 illustrates a diagram of an HSDI transceiver with bi-directional HSDI functionality according to an exemplary embodiment of the invention." Hsieh at [0015]. "Briefly summarized, an HSDI transceiver with bi-directional functionality can switch its function to make itself compatible to a typical HSDI source device/HSDI sink device, or form a bi-directional HSDI structure coupled with another HSDI transceiver with bi-directional functionality. It can extend the combinations and the usage of the HSDI device applications. When a DVD recorder and a digital television both have bi-directional HSDI functionality, TV signals can be received and processed by the tuner in the digital TV and transformed into HSDI signals by the HSDI device in the digital TV. The HSDI signals are then transported to the DVD recorder as a video input and an audio input. In this way, the DVD recorder does not need to be provided with a tuner while recording a TV program. The cost of the DVD recorder is hence significantly decreased. Moreover, a user can use a mobile phone or a remote computer to control the computer at home through the Internet to tum on a TV and switch the HSDI device inside the TV to act as a source device. By utilizing the bi-directional structure of the TV and the computer at home, the TV can transport TV signals to the computer. Once the computer has transferred the HSDI TV signal into

		a TS bit stream, it can further transmit the TS bit stream to the user through the Internet, allowing the user to watch TV programs in any location." Hsieh at [0035]. "If the specific HSDI device supports bi-directional functionalities, as shown in FIG. 2, the first multiplexer 106 of the HSDI transceiver 100 is connected to the first multiplexer 206 of the specific HSDI device 200 by a TMDS channel (or a wireless interface in another embodiment) to transport the HSDI signals bi-directionally between the HSDI transceiver 100 and the specific HSDI device 200, the controller 108 of the HSDI transceiver 100 is connected to the controller 208 of the specific HSDI device 200 by a CEC line (or a wireless interface), and the second multiplexer 112 of the HSDI trans-ceivers 100 is connected to the second multiplexer 212 of the specific HSDI device 200 by a display data channel (DDC) line (or a wireless interface) to transport the EDID of the sink device." Hsieh at [0020]. "FIG. 3 is a flow chart of forming a bi-directional HSDI structure shown in FIG. 2." Hsieh at [0023].

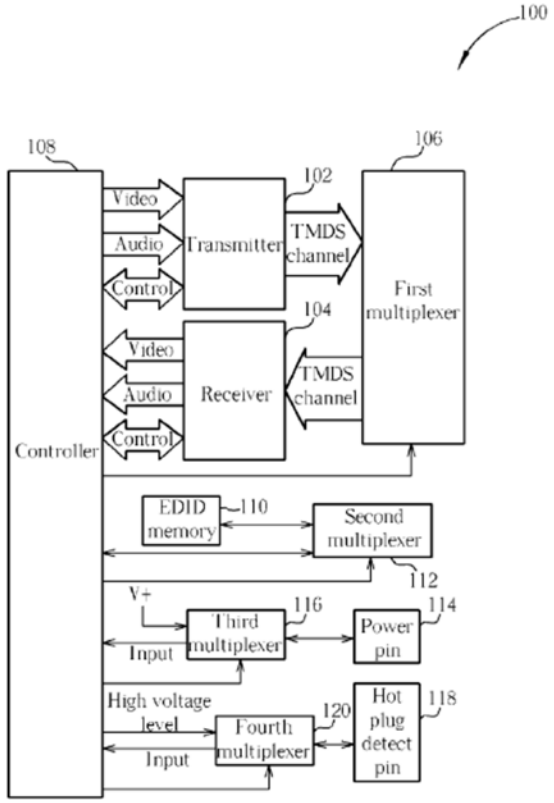
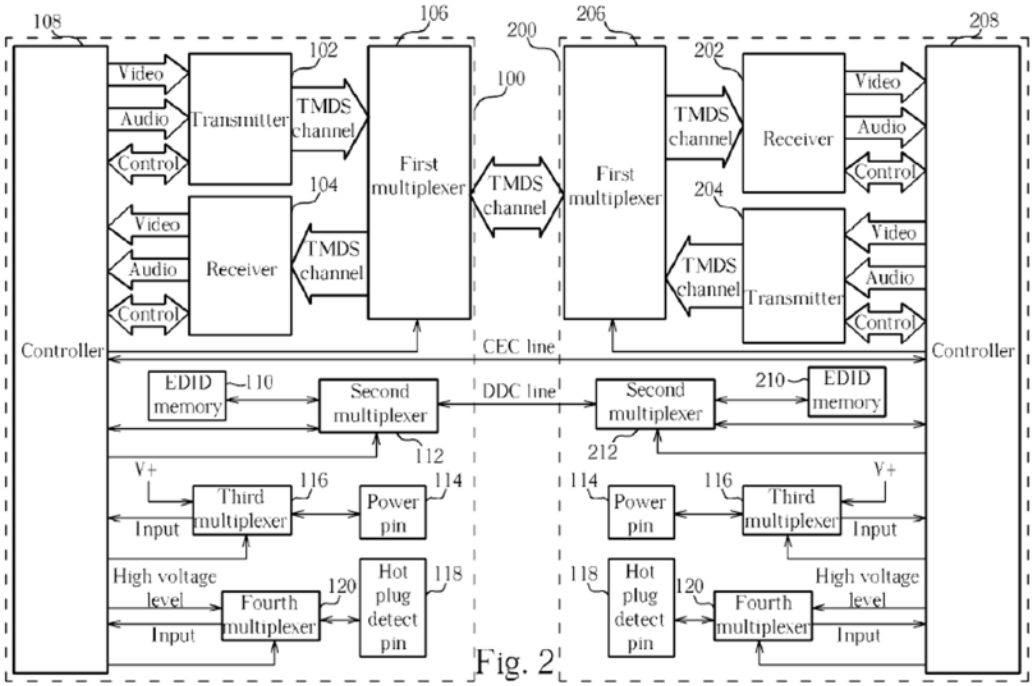
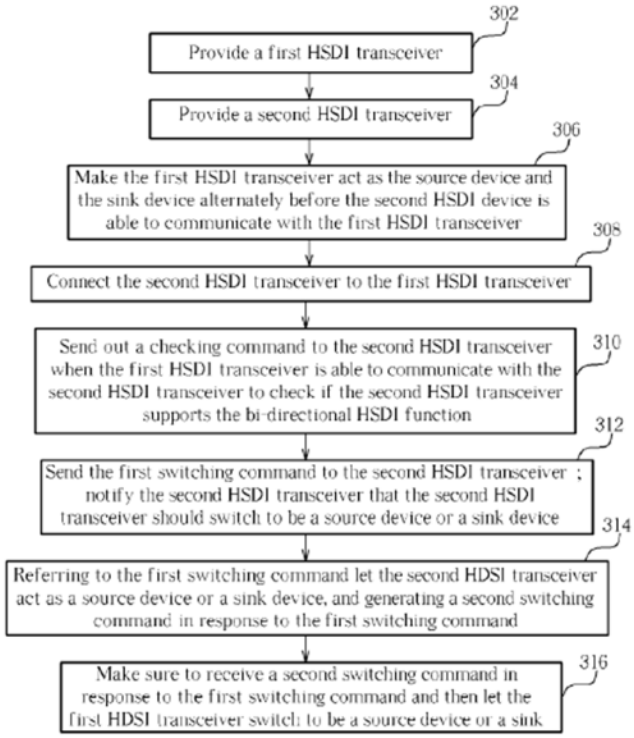


Fig. 1

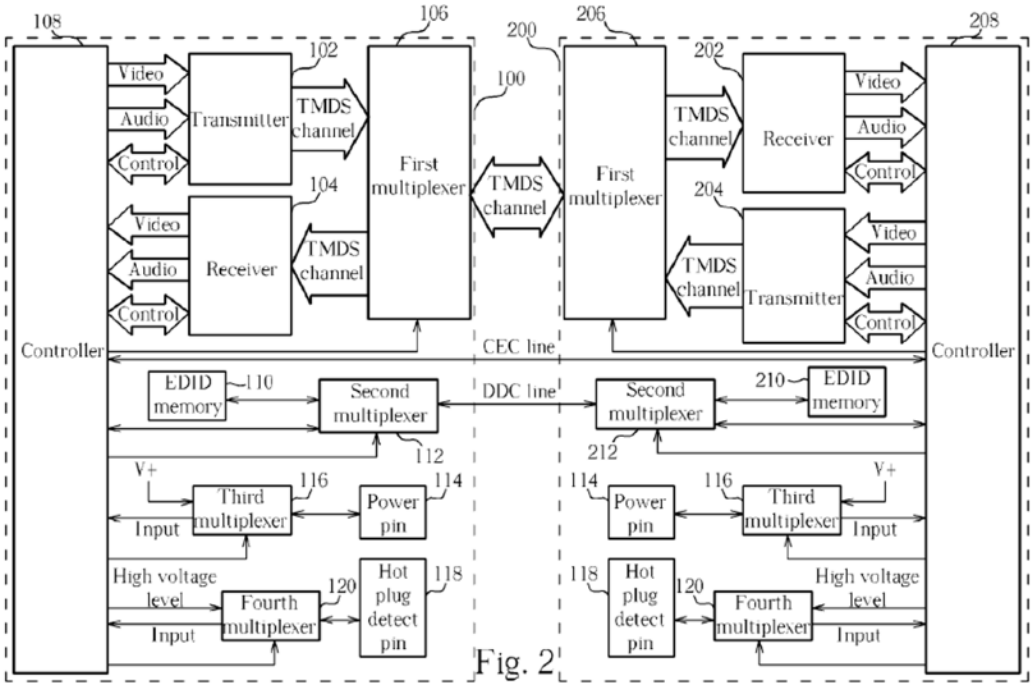
Hsieh at Fig. 1.

		 Fig. 2 Hsieh at Fig. 2.

		 Fig. 3 Hsieh at Fig. 3. To the extent that Plaintiff contends that Hsieh does not explicitly or inherently disclose this element, or render obvious this element, this element is obvious in combination with one or more references and/or with the knowledge of a person of ordinary skill in the art, as set forth in Defendant's Invalidity Contentions.
1(a)	initializing a first audio/video (AV)	Hsieh discloses and/or renders obvious this limitation. *See, e.g.*:

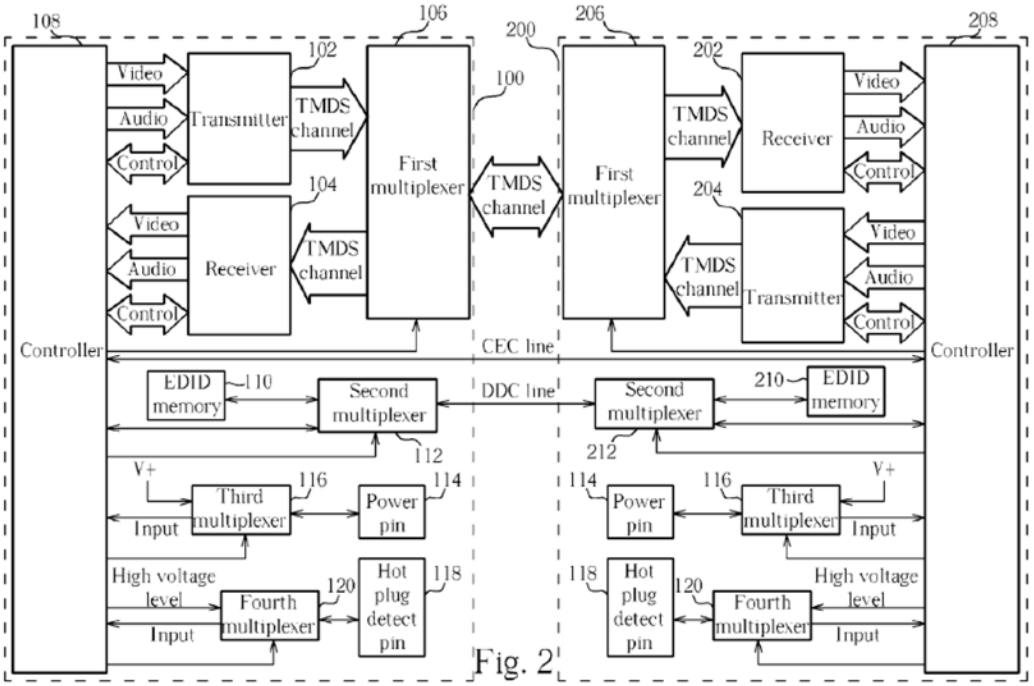
	device to operate in a default AV sink operation mode in response to a power-on-reset or powering up of the first AV device;	"[T]he first HSDI transceiver is pre-set to be either the source device or the sink device prior receiving or generating a first control Switching command." Hsieh at [0006]. "Being bi-directional, the HSDI transceiver 100 can be chosen to act as a source device or a sink device depending on the user's requirement. Please note, prior generating a switching command, each HSDI transceiver 100 is pre-set as the source device or the sink device by having some default setting. For example, the settings of the power pin 114 and the hot plug detect pin 118, and the connection relationships of the first multiplexer 106 and the second multiplexer 112 of the HSDI transceiver 100 are pre-set to let the HSDI transceiver 100 conform to the standard for HSDI device, such as HDMI specification. When the HSDI transceiver 100 is a DVD recorder, the default setting of the first multiplexer 106 is to couple to the transmitter 102, the default setting of the second multiplexer 112 is to couple to the controller 108, the controller 108 controls the third multiplexer 116 to set the power pin 114 to supply power, and controls the fourth multiplexer 120 to set the hot plug detect pin 118 to become an input node." Hsieh at [0106]. "Initially, each device is set to be the default working function, Source or sink function." [0020] To the extent that Plaintiff contends that Hsieh does not explicitly or inherently disclose this element, or render obvious this element, this element is obvious in combination with one or more references and/or with the knowledge of a person of ordinary skill in the art, as set forth in Defendant's Invalidity Contentions.
1(b)	detecting with control circuitry of the first AV device, a coupling between the first AV device and a second AV device;	Hsieh discloses and/or renders obvious this limitation. *See, e.g.*: "Being bi-directional, the HSDI transceiver 100 can be chosen to act as a source device or a sink device depending on the user's requirement. Please note, prior generating a switching command, each HSDI transceiver 100 is pre-set as the source device or the sink device by having some default setting. For example, the settings of the power pin 114 and the hot plug detect pin 118, and the connection relationships of the first multiplexer 106 and the second multiplexer 112 of the HSDI transceiver 100 are pre-set to let the HSDI transceiver 100 conform to the standard for HSDI device, such as HDMI specification. When the HSDI transceiver 100 is a DVD recorder, the default setting of the first multiplexer 106 is to couple to the transmitter 102, the default setting of the second multiplexer 112 is to couple to the controller 108, the con-troller 108 controls the third multiplexer

		116 to set the power pin 114 to supply power, and controls the fourth multiplexer 120 to set the hot plug detect pin 118 to become an input node." Hsieh at [0016]. "When the HSDI transceiver 100 is connected to a specific HSDI device, it will trigger the detection process to determine whether the specific HSDI device is plugged in according to a communication procedure specified in the specification for a variety of HSDI devices, such as HDMI. Since such a communication procedure can be appreciated by a person skilled in this art, the detailed description is omitted here for the brevity. While both HSDI transceiver 100 and the specific HSDI device act as the same type of devices, which could be either both are source or both are sink devices, the HSDI transceiver 100 is unable to detect the plugged-in specific HSDI device. In such case, the controller 108 of the HSDI transceiver 100 could make transceiver 100 to be the sink device while the specific HSDI device is a source device and vice versa by controlling the first multiplexer 106, the second multiplexer 112, the third multiplexer 116, and the fourth multiplexer 118 to make the HSDI transceiver 100 act as the source device and the sink device alternately. Please note that controlling could be performed prior of the specific HSDI device is able to communicate with the HSDI transceiver 100. For example, if the HSDI transceiver 100 acts as a source device initially and the specific HSDI device is also a source device, the controller 108 controls the first multiplexer 106 to be coupled to the receiver 104, the second multiplexer 112 to be coupled to the EDID memory 110, the third multiplexer 116 to make the power pin 114 to draw power from the specific HSDI device, and the fourth multiplexer 120 to make the hot plug detect pin 118 to have a high voltage in order to let the HSDI transceiver 100 enter a slave mode to act as a sink device. By switching HSDI transceiver 100 to a sink device, two HSDI communication devices are able to communicate with each other after the HSDI transceiver 100 enters the slave mode. While the non-detection of plug-in status occurs due to the reason of the specific HSDI device is not connected to or not completely connected to the HSDI transceiver 100 yet, the HSDI transceiver 100 could switch to a master mode to act as the source device." Hsieh at [0017]. "Once the HSDI transceiver 100 detects the plugged-in specific HSDI device, the controller 108 sends out a checking command to check whether the specific HSDI device supports the bi-directional HSDI functionality." Hsieh at [0018].

		 Fig. 2 Hsieh at Fig. 2. To the extent that Plaintiff contends that Hsieh does not explicitly or inherently disclose this element, or render obvious this element, this element is obvious in combination with one or more references and/or with the knowledge of a person of ordinary skill in the art, as set forth in Defendant's Invalidity Contentions.
1(c)	determining whether a first supply voltage is provided at a channel of a connector, the connector coupling the	Hsieh discloses and/or renders obvious this limitation. *See, e.g.*: "Being bi-directional, the HSDI transceiver 100 can be chosen to act as a source device or a sink device depending on the user's requirement. Please note, prior generating a switching command, each HSDI transceiver 100 is pre-set as the source device or the sink device by having some default setting. For example, the settings of the power pin 114 and the hot plug detect pin 118, and the connection relationships of the first multiplexer 106 and the second multiplexer 112 of the HSDI

	first AV device and the second AV device;	transceiver 100 are pre-set to let the HSDI transceiver 100 conform to the standard for HSDI device, such as HDMI specification. When the HSDI transceiver 100 is a DVD recorder, the default setting of the first multiplexer 106 is to couple to the transmitter 102, the default setting of the second multiplexer 112 is to couple to the controller 108, the controller 108 controls the third multiplexer 116 to set the power pin 114 to supply power, and controls the fourth multiplexer 120 to set the hot plug detect pin 118 to become an input node." Hsieh at [0016]. "When the HSDI transceiver 100 is connected to a specific HSDI device, it will trigger the detection process to determine whether the specific HSDI device is plugged in according to a communication procedure specified in the specification for a variety of HSDI devices, such as HDMI. Since such a communication procedure can be appreciated by a person skilled in this art, the detailed description is omitted here for the brevity. While both HSDI transceiver 100 and the specific HSDI device act as the same type of devices, which could be either both are source or both are sink devices, the HSDI transceiver 100 is unable to detect the plugged-in specific HSDI device. In such case, the controller 108 of the HSDI transceiver 100 could make transceiver 100 to be the sink device while the specific HSDI device is a source device and vice versa by controlling the first multiplexer 106, the second multiplexer 112, the third multiplexer 116, and the fourth multiplexer 118 to make the HSDI transceiver 100 act as the source device and the sink device alternately. Please note that controlling could be performed prior of the specific HSDI device is able to communicate with the HSDI transceiver 100. For example, if the HSDI transceiver 100 acts as a source device initially and the specific HSDI device is also a source device, the controller 108 controls the first multiplexer 106 to be coupled to the receiver 104, the second multiplexer 112 to be coupled to the EDID memory 110, the third multiplexer 116 to make the power pin 114 to draw power from the specific HSDI device, and the fourth multiplexer 120 to make the hot plug detect pin 118 to have a high voltage in order to let the HSDI transceiver 100 enter a slave mode to act as a sink device. By switching HSDI transceiver 100 to a sink device, two HSDI communication devices are able to communicate with each other after the HSDI transceiver 100 enters the slave mode. While the non-detection of plug-in status occurs due to the reason of the specific HSDI device is not connected to or not completely connected to the HSDI transceiver 100 yet, the HSDI transceiver 100 could switch to a master mode to act as the source device." Hsieh at [0017].

		"Once the HSDI transceiver 100 detects the plugged-in specific HSDI device, the controller 108 sends out a check-ing command to check whether the specific HSDI device supports the bi-directional HSDI functionality." Hsieh at [0018]. "If the specific HSDI device supports bi-directional functionalities, as shown in FIG. 2, the first multiplexer 106 of the HSDI transceiver 100 is connected to the first multiplexer 206 of the specific HSDI device 200 by a TMDS channel (or a wireless interface in another embodiment) to transport the HSDI signals bi-directionally between the HSDI transceiver 100 and the specific HSDI device 200, the controller 108 of the HSDI transceiver 100 is connected to the controller 208 of the specific HSDI device 200 by a CEC line (or a wireless interface), and the second multiplexer 112 of the HSDI trans-ceivers 100 is connected to the second multiplexer 212 of the specific HSDI device 200 by a display data channel (DDC) line (or a wireless interface) to transport the EDID of the sink device. Initially, each device is set to be the default working function, source or sink function. When device is requested to change its working function, it needs to send the switching command to notify another device. For example, while the HSDI transceiver 100 is a source device and the specific HSDI device 200 is a sink device, initially the controller 108 of the HSDI transceiver 100 will control the first multiplexer 106 and the second multiplexer 112 to be source function; that is, coupling the first multiplexer 106 to the transmitter 102 and coupling the second multiplexer 112 to the controller 108 to let the HSDI transceiver 100 act as the source device. And initially the controller 208 of the HSDI transceiver 200 will control the first multiplexer 206 and the second multiplexer 212 to be sink function; that is, coupling the first multiplexer 206 to the receiver 202 and coupling the second multiplexer 212 to the EDID memory 210 to let the HSDI transceiver 200 act as the sink device." Hsieh at [0020]. "When the HSDI transceiver 100 is requested to change its working function from source device to sink device, the HSDI transceiver 100 sends a checking command to the HSDI transceiver 200, and a first switching command is then sent from the controller 108 to the controller 208 of the specific HSDI device 200 through the CEC line, and if the controller 208 supports this first switching command, it should generate a second switching command in response to the first switching command and couple the first multiplexer 206 to the transmitter 204, couple the second multiplexer 212 to the controller 208, set hot-plug detect pin 218 to be input pin and set power pin 214 to be output pin. At this time, controller 108 will ignore the hot-plug in signal." Hsieh at [0021].

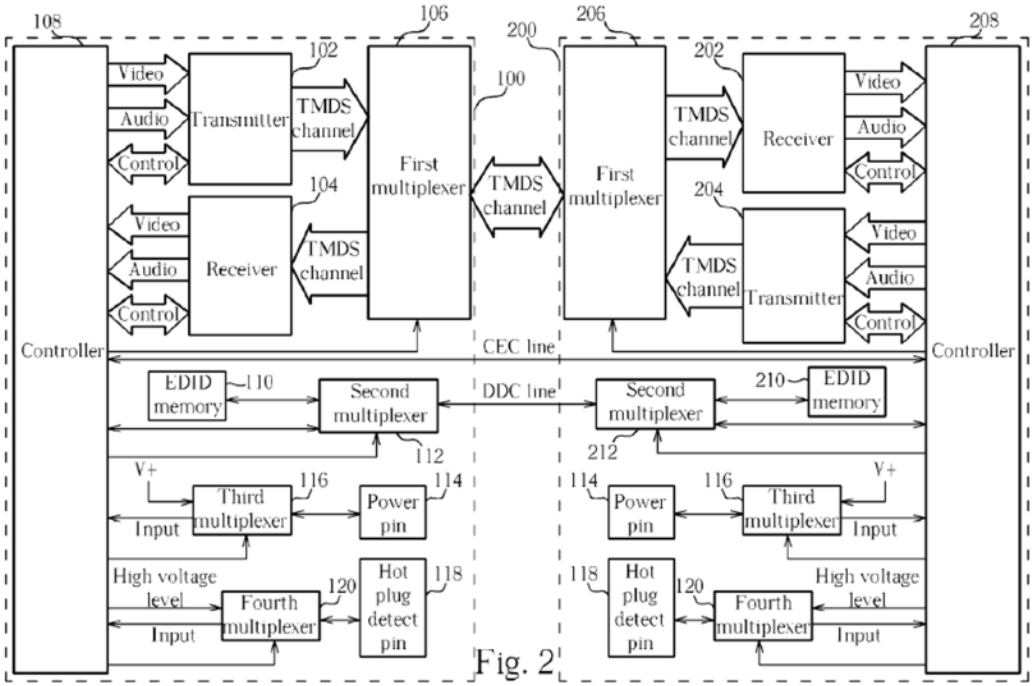
		"When the controller 108 receive the second switching command, the controller 108 will couple the first multi-plexer 106 to the receiver 104, couple the second multiplexer 112 to the EDID memory 110, set the hot-plug detect pin 118 to be output pin and set power pin 114 to be input pin. Finally the HSDI transceiver 100 will set hot-plug signal to be high and the controller 208 will detect hot-plug in signal, then transceiver 200 will act as source device and the transceiver 100 will act as sink device. The switching command can be an OP code or an OP code plus some parameters. For example, the first switching command can be an OP code plus two parameters, the first parameter '1 ' or '0' represents that the device which receives command is requested to act as a source device or a sink device respectively. The second parameter is for confirming the operating resolution and frequency between the HSDI transceiver 100 and the specific HSDI device 200." Hsieh at [0022].  Fig. 2 Hsieh at Fig. 2.

		To the extent that Plaintiff contends that Hsieh does not explicitly or inherently disclose this element, or render obvious this element, this element is obvious in combination with one or more references and/or with the knowledge of a person of ordinary skill in the art, as set forth in Defendant's Invalidity Contentions.
1(d)	in response to determining that the first supply voltage is provided at the channel of the connector, configuring communication logic of the first AV device to continue operating the first AV device in the AV sink operation mode;	Hsieh discloses and/or renders obvious this limitation. *See, e.g.*: "When the HSDI transceiver 100 is connected to a specific HSDI device, it will trigger the detection process to determine whether the specific HSDI device is plugged in according to a communication procedure specified in the specification for a variety of HSDI devices, such as HDMI. Since such a communication procedure can be appreciated by a person skilled in this art, the detailed description is omitted here for the brevity. While both HSDI transceiver 100 and the specific HSDI device act as the same type of devices, which could be either both are source or both are sink devices, the HSDI transceiver 100 is unable to detect the plugged-in specific HSDI device. In such case, the controller 108 of the HSDI transceiver 100 could make transceiver 100 to be the sink device while the specific HSDI device is a source device and vice versa by controlling the first multiplexer 106, the second multiplexer 112, the third multiplexer 116, and the fourth multiplexer 118 to make the HSDI transceiver 100 act as the source device and the sink device alternately. Please note that controlling could be performed prior of the specific HSDI device is able to communicate with the HSDI transceiver 100. For example, if the HSDI transceiver 100 acts as a source device initially and the specific HSDI device is also a source device, the controller 108 controls the first multiplexer 106 to be coupled to the receiver 104, the second multiplexer 112 to be coupled to the EDID memory 110, the third multiplexer 116 to make the power pin 114 to draw power from the specific HSDI device, and the fourth multiplexer 120 to make the hot plug detect pin 118 to have a high voltage in order to let the HSDI transceiver 100 enter a slave mode to act as a sink device. By switching HSDI transceiver 100 to a sink device, two HSDI communication devices are able to communicate with each other after the HSDI transceiver 100 enters the slave mode. While the non-detection of plug-in status occurs due to the reason of the specific HSDI device is not connected to or not completely connected to the HSDI transceiver 100 yet, the HSDI transceiver 100 could switch to a master mode to act as the source device." Hsieh at [0017]. [0018] Once the HSDI transceiver 100 detects the plugged-in specific HSDI device, the controller 108 sends out a check-ing command to check whether the specific HSDI device supports the bi-

		directional HSDI functionality. Note that no matter whether the HSDI transceiver 100 is a source device or a sink device, it can actively send the checking command to another HSDI device through a wireless transmission or through a CEC line. The checking command can be an opera-tion code (OP code) plus a parameter. Alternatively the con-troller 108 can check whether the specific HSDI device sup-ports the bi-directional HSDI functionality by directly reading an identifying byte in the EDID memory of the spe-cific HSDI device. For example, the specific HSDI device sets the parameter or the identifying byte to be '0' as not support-ing the bi-directional functionality, or sets the parameter or the identifying byte to be '1' as supporting the bi-directional functionality in special position of EDID. Alternatively, the parameter or the identifying byte can be set to other identifi-cations to represent whether the devices support the bi-direc-tional functionality and the initial types of devices, such as the source or sink device. In addition, a HSDI device could choose to reply or not to reply an unknown command. If the HSDI transceiver 100 sends out the checking command and does not receive a response from the specific HSDI device, the specific HSDI device is deemed as a non-bi-directional HSDI transceiver and does not support the bi-directional functionality." Hsieh at [0018]. "When the controller 108 receive the second switching command, the controller 108 will couple the first multiplexer 106 to the receiver 104, couple the second multiplexer 112 to the EDID memory 110, set the hot-plug detect pin 118 to be output pin and set power pin 114 to be input pin. Finally the HSDI transceiver 100 will set hot-plug signal to be high and the controller 208 will detect hot-plug in signal, then transceiver 200 will act as source device and the transceiver 100 will act as sink device. The switching command can be an OP code or an OP code plus some parameters. For example, the first switching command can be an OP code plus two parameters, the first parameter '1 ' or '0' represents that the device which receives command is requested to act as a source device or a sink device respectively. The second parameter is for confirming the operating resolution and frequency between the HSDI transceiver 100 and the specific HSDI device 200." Hsieh at [0022]. To the extent that Plaintiff contends that Hsieh does not explicitly or inherently disclose this element, or render obvious this element, this element is obvious in combination with one or more references and/or with the knowledge of a person of ordinary skill in the art, as set forth in Defendant's Invalidity Contentions.

1(e)	when operating the first AV device in the AV sink operation mode, receiving AV data provided to the first AV device via the connector and receiving power from the first supply voltage provided to the first AV device at the channel of the connector;	Hsieh discloses and/or renders obvious this limitation. *See, e.g.*: "Being bi-directional, the HSDI transceiver 100 can be chosen to act as a source device or a sink device depending on the user's requirement." Hsieh at [0016]. "FIG. 1 illustrates a diagram of an HSDI transceiver with bi-directional HSDI functionality according to an exemplary embodiment of the invention. The HSDI transceiver 100 comprises a transmitter 102, a receiver 104, a first multiplexer 106, a controller 108, an enhanced extended display identification data (EDID) memory 110, a second multiplexer 112, a power pin 114, a third multiplexer 116, a hot plug detect pin 118 and a fourth multiplexer 120. The transmitter 102 is for transmitting a data stream, and is substantially the same as a transmitter in a conventional HSDI source device. The receiver 104 is for receiving a data stream, and is substantially the same as a receiver in a conventional HSDI sink device.The first multiplexer 106 is controlled by the controller 108 to be selectively coupled to the transmitter 102 or the receiver 104 to let the HSDI transceiver 100 act as a source device or a sink device respectively. That is, the transmitter 102 and the receiver 104 will not work at the same time in this embodiment. The EDID memory 110 is for storing EDID, including the data format or resolution that the HSDI transceiver 100 can support. The EDID in this embodiment can further include an identifying byte to represent whether the HSDI transceiver 100 supports the novel bi-directional functionality and whether the HSDI transceiver 100 acts as a source or sink device. The identifying byte will be described in detail in the following paragraphs. The second multiplexer 112, coupled to the EDID memory 110 and the controller 108, is controlled by the controller 108 to be selectively coupled to the EDID memory 110 or coupled to the controller 108." Hsieh at [0015]. "For example, the settings of the powerpin 114 and the hot plug detect pin 118, and the connection relationships of the first multiplexer 106 and the second multiplexer 112 of the HSDI transceiver 100 are pre-set to let the HSDI transceiver 100 conform to the standard for HSDI device, such as HDMI specification." Hsieh at [0016]. "When the HSDI transceiver 100 is requested to change its working function from source device to sink device, the HSDI transceiver 100 sends a checking command to the HSDI transceiver 200, and a first switching command is then sent from the controller 108 to the controller 208 of the specific HSDI device 200 through the CEC line, and if the controller 208 supports this first switching

		command, it should generate a second switching command in response to the first switching command and couple the first multiplexer 206 to the transmitter 204, couple the second multiplexer 212 to the controller 208, set hot-plug detect pin 218 to be input pin and set power pin 214 to be output pin. At this time, controller 108 will ignore the hot-plug in signal." Hsieh at [0021]. "When the controller 108 receive the second switch-ing command, the controller 108 will couple the first multi-plexer 106 to the receiver 104, couple the second multiplexer 112 to the EDID memory 110, set the hot-plug detect pin 118 to be output pin and set power pin 114 to be input pin. Finally the HSDI transceiver 100 will set hot-plug signal to be high and the controller 208 will detect hot-plug in signal, then transceiver 200 will act as source device and the transceiver 100 will act as sink device. The switching command can be an OP code or an OP code plus some parameters. For example, the first switching command can be an OP code plus two parameters, the first parameter '1 ' or '0' represents that the device which receives command is requested to act as a source device or a sink device respectively. The second parameter is for confirming the operating resolution and frequency between the HSDI transceiver 100 and the specific HSDI device 200." Hsieh at [0022]. "[A] power pin, coupled to the controller of the first high-speed digital interface transceiver, for supplying power to a specific high-speed digital interface device when the first high-speed digital interface transceiver acts as the source device, and being an input pin when the first high-speed digital interface transceiver acts as the sink device, wherein the power pin is controlled by the controller of the first high-speed digital interface transceiver." Hsieh at cl. 11.

		 Fig. 2 Hsieh at Fig. 2. To the extent that Plaintiff contends that Hsieh does not explicitly or inherently disclose this element, or render obvious this element, this element is obvious in combination with one or more references and/or with the knowledge of a person of ordinary skill in the art, as set forth in Defendant's Invalidity Contentions.
1(f)	in response to determining that the first supply voltage is not provided at the channel of the connector, configuring	Hsieh discloses and/or renders obvious this limitation. *See, e.g.*: "When the HSDI transceiver 100 is connected to a specific HSDI device, it will trigger the detection process to determine whether the specific HSDI device is plugged in according to a communication procedure specified in the specification for a variety of HSDI devices, such as HDMI. Since such a communication procedure can be appreciated by a person skilled in this art, the detailed description is omitted here for the brevity. While both HSDI transceiver 100 and the specific HSDI device act

	the communication logic of the first AV device to transition the first AV device from the AV sink operation mode to an AV source operation mode; and	as the same type of devices, which could be either both are source or both are sink devices, the HSDI transceiver 100 is unable to detect the plugged-in specific HSDI device. In such case, the controller 108 of the HSDI transceiver 100 could make transceiver 100 to be the sink device while the specific HSDI device is a source device and vice versa by controlling the first multiplexer 106, the second multiplexer 112, the third multiplexer 116, and the fourth multiplexer 118 to make the HSDI transceiver 100 act as the source device and the sink device alternately. Please note that controlling could be performed prior of the specific HSDI device is able to communicate with the HSDI transceiver 100. For example, if the HSDI transceiver 100 acts as a source device initially and the specific HSDI device is also a source device, the controller 108 controls the first multiplexer 106 to be coupled to the receiver 104, the second multiplexer 112 to be coupled to the EDID memory 110, the third multiplexer 116 to make the power pin 114 to draw power from the specific HSDI device, and the fourth multiplexer 120 to make the hot plug detect pin 118 to have a high voltage in order to let the HSDI transceiver 100 enter a slave mode to act as a sink device. By switching HSDI transceiver 100 to a sink device, two HSDI communication devices are able to communicate with each other after the HSDI transceiver 100 enters the slave mode. While the non-detection of plug-in status occurs due to the reason of the specific HSDI device is not connected to or not completely connected to the HSDI transceiver 100 yet, the HSDI transceiver 100 could switch to a master mode to act as the source device." Hsieh at [0017]. [0018] Once the HSDI transceiver 100 detects the plugged-in specific HSDI device, the controller 108 sends out a check-ing command to check whether the specific HSDI device supports the bi-directional HSDI functionality. Note that no matter whether the HSDI transceiver 100 is a source device or a sink device, it can actively send the checking command to another HSDI device through a wireless transmission or through a CEC line. The checking command can be an opera-tion code (OP code) plus a parameter. Alternatively the con-troller 108 can check whether the specific HSDI device sup-ports the bi-directional HSDI functionality by directly reading an identifying byte in the EDID memory of the spe-cific HSDI device. For example, the specific HSDI device sets the parameter or the identifying byte to be '0' as not support-ing the bi-directional functionality, or sets the parameter or the identifying byte to be '1' as supporting the bi-directional functionality in special position of EDID. Alternatively, the parameter or the identifying byte can be set to other identifi-cations to represent whether the devices support the bi-direc-tional functionality and the initial types of devices, such as the source or sink device. In addition, a HSDI device could choose to reply or not to reply an unknown command. If the HSDI transceiver 100 sends out the checking

		command and does not receive a response from the specific HSDI device, the specific HSDI device is deemed as a non-bi-directional HSDI transceiver and does not support the bi-directional functionality." Hsieh at [0018]. "When the controller 108 receive the second switching command, the controller 108 will couple the first multiplexer 106 to the receiver 104, couple the second multiplexer 112 to the EDID memory 110, set the hot-plug detect pin 118 to be output pin and set power pin 114 to be input pin. Finally the HSDI transceiver 100 will set hot-plug signal to be high and the controller 208 will detect hot-plug in signal, then transceiver 200 will act as source device and the transceiver 100 will act as sink device. The switching command can be an OP code or an OP code plus some parameters. For example, the first switching command can be an OP code plus two parameters, the first parameter '1 ' or '0' represents that the device which receives command is requested to act as a source device or a sink device respectively. The second parameter is for confirming the operating resolution and frequency between the HSDI transceiver 100 and the specific HSDI device 200." Hsieh at [0022]. To the extent that Plaintiff contends that Hsieh does not explicitly or inherently disclose this element, or render obvious this element, this element is obvious in combination with one or more references and/or with the knowledge of a person of ordinary skill in the art, as set forth in Defendant's Invalidity Contentions.
1(g)	when operating the first AV device in the AV source operation mode, sending AV data via the connector and providing a second supply voltage at the channel of the connector.	Hsieh discloses and/or renders obvious this limitation. *See, e.g.*: "Being bi-directional, the HSDI transceiver 100 can be chosen to act as a source device or a sink device depending on the user's requirement." Hsieh at [0016]. "FIG. 1 illustrates a diagram of an HSDI transceiver with bi-directional HSDI functionality according to an exem plary embodiment of the invention. The HSDI transceiver 100 comprises a transmitter 102, a receiver 104, a first multiplexer 106, a controller 108, an enhanced extended display identifi cation data (EDID) memory 110, a second multiplexer 112, a power pin 114, a third multiplexer 116, a hot plug detect pin 118 and a fourth multiplexer 120. The transmitter 102 is for transmitting a data stream, and is substantially the same as a transmitter in a conventional HSDI source device. The receiver 104 is for receiving a data stream, and is substantially the same as a receiver in a conventional HSDI sink device.The first multiplexer 106 is controlled by the controller

		108 to be selectively coupled to the transmitter 102 or the receiver 104 to let the HSDI transceiver 100 act as a source device or a sink device respectively. That is, the transmitter 102 and the receiver 104 will not work at the same time in this embodi ment. The EDID memory 110 is for storing EDID, including the data format or resolution that the HSDI transceiver 100 can support. The EDID in this embodiment can further include an identifying byte to represent whether the HSDI transceiver 100 supports the novel bi-directional functionality and whether the HSDI transceiver 100 acts as a source or sink device. The identifying byte will be described in detail in the following paragraphs. The second multiplexer 112, coupled to the EDID memory 110 and the controller 108, is controlled by the controller 108 to be selectively coupled to the EDID memory 110 or coupled to the controller 108." Hsieh at [0015]. "For example, the settings of the powerpin 114 and the hot plug detect pin 118, and the connection relationships of the first multiplexer 106 and the second multiplexer 112 of the HSDI transceiver 100 are pre-set to let the HSDI transceiver 100 conform to the standard for HSDI device, such as HDMI specification." Hsieh at [0016]. "When the HSDI transceiver 100 is a DVD recorder, the default setting of the first multiplexer 106 is to couple to the transmitter 102, the default setting of the second multiplexer 112 is to couple to the controller 108, the con troller 108 controls the third multiplexer 116 to set the power pin 114 to supply power, and controls the fourth multiplexer 120 to set the hot plug detect pin 118 to become an input node." Hsieh at [0016]. "For example, while the HSDI transceiver 100 is a source device and the specific HSDI device 200 is a sink device, initially the controller 108 of the HSDI transceiver 100 will control the first multiplexer 106 and the second multiplexer 112 to be source function; that is, coupling the first multiplexer 106 to the transmitter 102 and coupling the second multiplexer 112 to the controller 108 to let the HSDI transceiver 100 act as the source device. And initially the controller 208 of the HSDI transceiver 200 will control the first multiplexer 206 and the second multiplexer 212 to be sink function; that is, coupling the first multiplexer 206 to the receiver 202 and coupling the second multiplexer 212 to the EDID memory 210 to let the HSDI transceiver 200 act as the sink device." Hsieh at [0020].

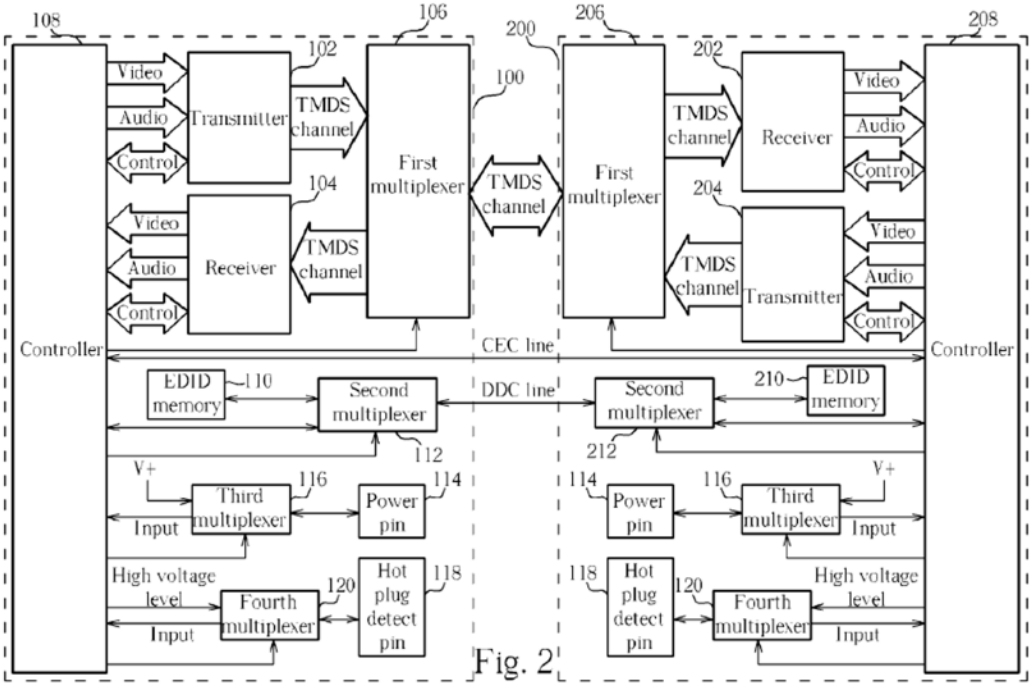
		"[A] power pin, coupled to the controller of the first high-speed digital interface transceiver, for supplying power to a specific high-speed digital interface device when the first high-speed digital interface transceiver acts as the source device, and being an input pin when the first high-speed digital interface transceiver acts as the sink device, wherein the power pin is controlled by the controller of the first high-speed digital interface transceiver." Hsieh at cl. 11.  Fig. 2 Hsieh at Fig. 2. To the extent that Plaintiff contends that Hsieh does not explicitly or inherently disclose this element, or render obvious this element, this element is obvious in combination with one or more references and/or with the knowledge of a person of ordinary skill in the art, as set forth in Defendant's Invalidity Contentions.

Exhibit D-2

Claim 8		
8[p]	An audio/video (AV) device comprising:	To the extent the preamble is limiting, Hsieh discloses this element and/or renders it obvious either alone or in combination with other references and/or the knowledge of one of ordinary skill in the art. *See, e.g.*: "The HSDI structure, such as High-Definition Mul-timedia Interface (HDMI), is a digital audio/video interface capable of transmitting uncompressed data streams. HSDI is compatible with Digital Rights Management technology and provides an interface between any compatible digital audio/ video source device (e.g. a set-top box, a DVD recorder, or a PC) and a compatible digital audio/video sink device, such as a digital television. Therefore, it has become a modern replacement for conventional analog standards such as SCART or RCA connectors." Hsieh at [0002]. "One objective of the invention is therefore to pro-vide a bidirectional HSDI transceiver and a method for supplying a bi-directional communication process on a HSDI device, to solve the above-mentioned problems." Hsieh at [0004]. "FIG. 1 illustrates a diagram of an HSDI transceiver with bi-directional HSDI functionality according to an exemplary embodiment of the invention." Hsieh at [0015]. "Briefly summarized, an HSDI transceiver with bi-directional functionality can switch its function to make itself compatible to a typical HSDI source device/HSDI sink device, or form a bi-directional HSDI structure coupled with another HSDI transceiver with bi-directional functionality. It can extend the combinations and the usage of the HSDI device applications. When a DVD recorder and a digital television both have bi-directional HSDI functionality, TV signals can be received and processed by the tuner in the digital TV and transformed into HSDI signals by the HSDI device in the digital TV. The HSDI signals are then transported to the DVD recorder as a video input and an audio input. In this way, the DVD recorder does not need to be provided with a tuner while recording a TV program. The cost of the DVD recorder is hence significantly decreased. Moreover, a user can use a mobile phone or a remote computer to control the computer at home through the Internet to tum on a TV and switch the HSDI device inside the TV to act as a source device. By utilizing the bi-directional structure of the TV and the computer at home, the TV can transport TV signals to the computer. Once the computer has transferred the HSDI TV signal into

		a TS bit stream, it can further transmit the TS bit stream to the user through the Internet, allowing the user to watch TV programs in any location." Hsieh at [0035]. "If the specific HSDI device supports bi-directional functionalities, as shown in FIG. 2, the first multiplexer 106 of the HSDI transceiver 100 is connected to the first multiplexer 206 of the specific HSDI device 200 by a TMDS channel (or a wireless interface in another embodiment) to transport the HSDI signals bi-directionally between the HSDI transceiver 100 and the specific HSDI device 200, the controller 108 of the HSDI transceiver 100 is connected to the controller 208 of the specific HSDI device 200 by a CEC line (or a wireless interface), and the second multiplexer 112 of the HSDI trans-ceivers 100 is connected to the second multiplexer 212 of the specific HSDI device 200 by a display data channel (DDC) line (or a wireless interface) to transport the EDID of the sink device." Hsieh at [0020].

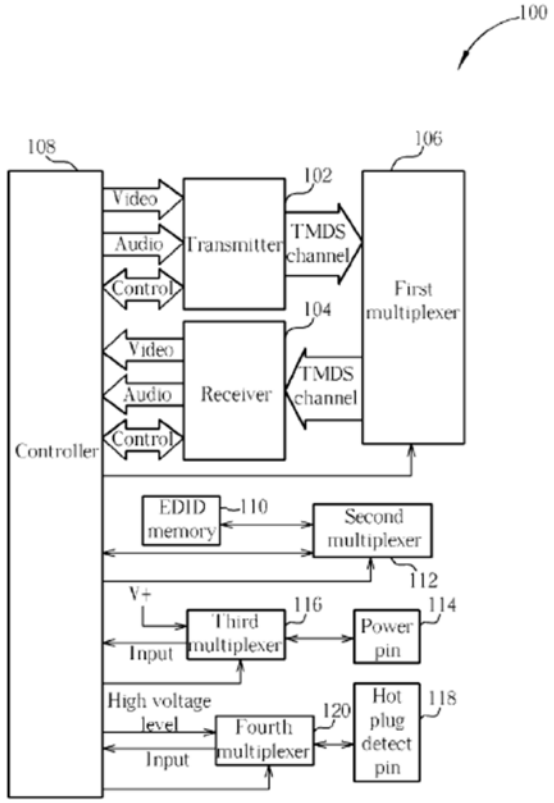
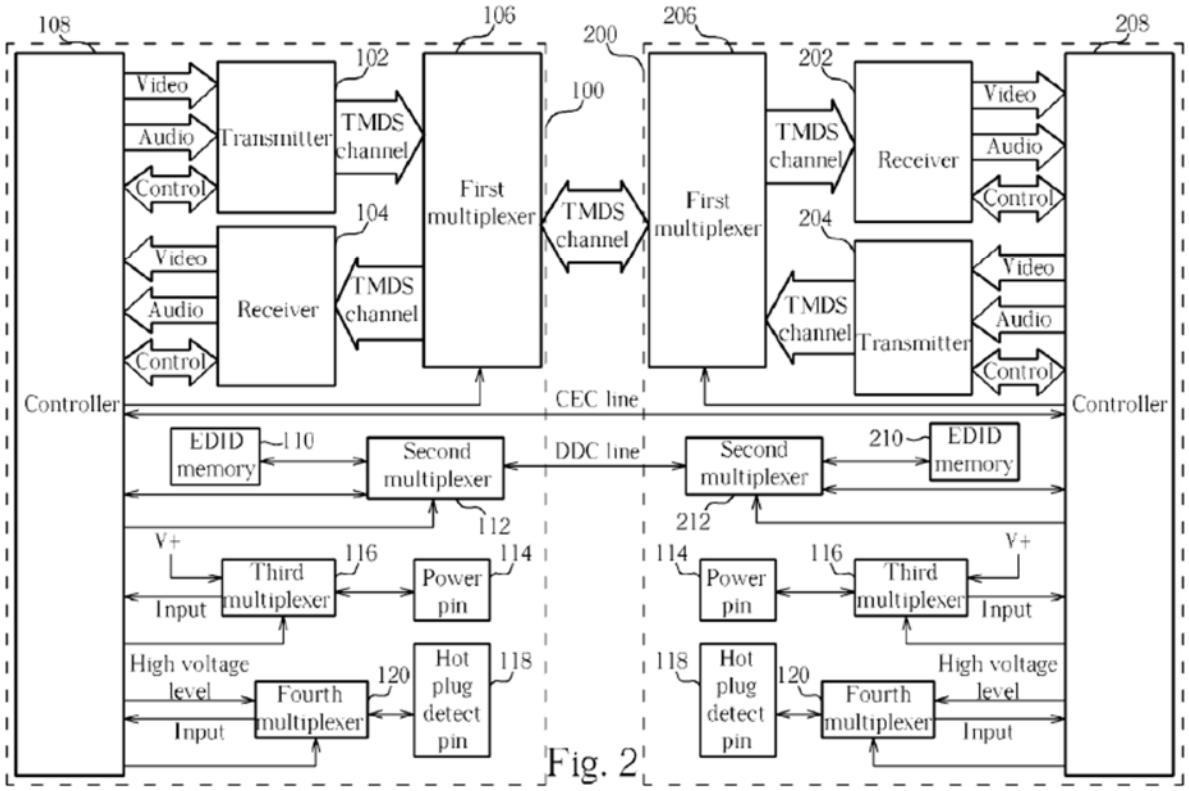


Fig. 1

Hsieh at Fig. 1.

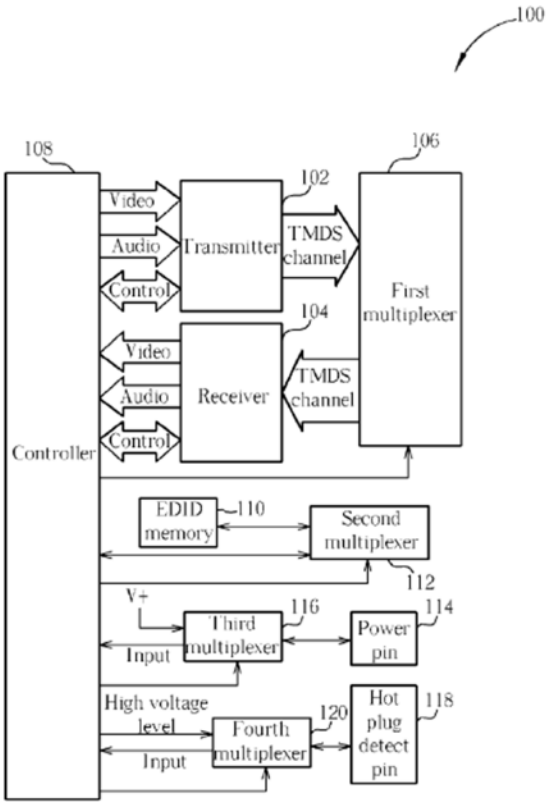
		 Fig. 2 Hsieh at Fig. 2. To the extent that Plaintiff contends that Hsieh does not explicitly or inherently disclose this element, or render obvious this element, this element is obvious in combination with one or more references and/or with the knowledge of a person of ordinary skill in the art, as set forth in Defendant's Invalidity Contentions.
8(a)	communication logic to couple to a connector, the communication logic	Hsieh discloses and/or renders obvious this limitation. *See* exemplary disclosures and corresponding discussion for claim element 1(c) and 1(d).

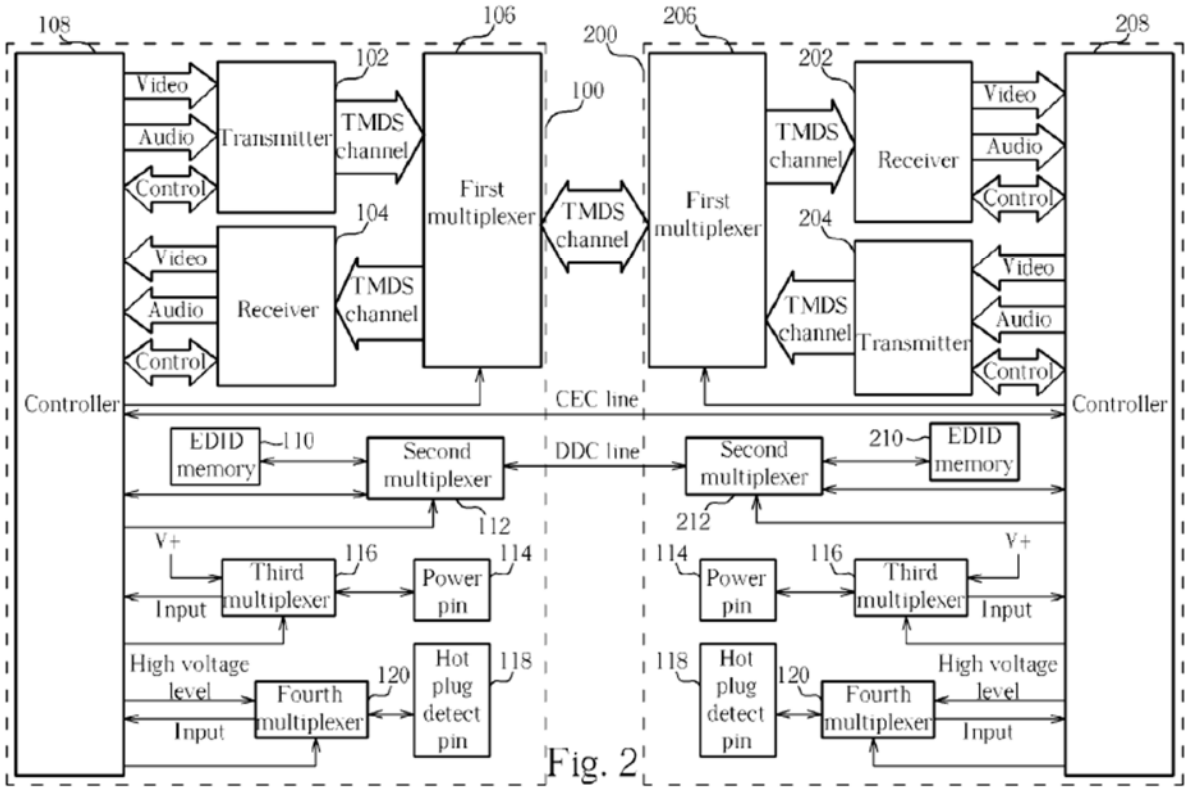
	including circuitry configured to implement:	
8(a)(1)(i)	an AV sink operation mode for the communication logic to receive AV data provided to the AV device at the connector and to receive power from a first supply voltage provided to the AV device via a channel of the connector,	Hsieh discloses and/or renders obvious this limitation. *See* exemplary disclosures and corresponding discussion for claim element 1(e).
8(a)(1)(ii)	the AV sink operation mode being a default mode of operation for the AV device, and	Hsieh discloses and/or renders obvious this limitation. *See* exemplary disclosures and corresponding discussion for claim element 1(a).
8(a)(2)	an AV source operation mode for the communication logic to send AV data from the AV device via the connector and to provide a second supply voltage at the channel of the connector; and	Hsieh discloses and/or renders obvious this limitation. *See* exemplary disclosures and corresponding discussion for claim element 1(g).

8(b)(1)	control logic including circuitry to configure the communication logic to initialize the AV device to operate in the default AV sink operation mode in response to a power-on-reset or powering up of the AV device,	Hsieh discloses and/or renders obvious this limitation. *See* exemplary disclosures and corresponding discussion for claim element 1(a).
8(b)(2)	to continue operating the AV device in the AV sink operation mode in response to determining that the first supply voltage is provided at the channel of the connector, and to configure the communication logic to transition the AV device from the AV sink operation mode to the AV source operation mode in response to determining that the first supply voltage is not provided at the	Hsieh discloses and/or renders obvious this limitation. *See* exemplary disclosures and corresponding discussion for claim element 1(d), 1(f), and 1(c).

	channel of the connector.	
Claim 11		
11(a)	The device of claim 8, further comprising: detector logic to detect, while the communication logic is in the default operation mode, a coupling of the AV device to another AV device via the connector; and	Hsieh discloses, expressly or inherently, the device of claim 8 under any proposed construction, and further discloses and/or renders obvious limitation 11(a). See exemplary disclosures and corresponding discussion for claim 8 and claim element 1(b).
11(b)	wherein the communication logic is further configured to perform an AV data exchange with the other device in response to the detection.	Hsieh discloses and/or renders obvious this limitation. *See* exemplary disclosures and corresponding discussion for claim element 1(e) and 1(g).
Claim 14		
14[p]	A system comprising:	To the extent the preamble is limiting, Hsieh discloses this element and/or renders it obvious either alone or in combination with other references and/or the knowledge of one of ordinary skill in the art. *See, e.g.*: "The HSDI structure, such as High-Definition Mul-timedia Interface (HDMI), is a digital audio/video interface capable of transmitting uncompressed data streams. HSDI is compatible with Digital Rights Management technology and provides an interface between any compatible digital

		audio/ video source device (e.g. a set-top box, a DVD recorder, or a PC) and a compatible digital audio/video sink device, such as a digital television. Therefore, it has become a modern replacement for conventional analog standards such as SCART or RCA connectors." Hsieh at [0002]. "One objective of the invention is therefore to pro-vide a bidirectional HSDI transceiver and a method for supplying a bi-directional communication process on a HSDI device, to solve the above-mentioned problems." Hsieh at [0004]. "FIG. 1 illustrates a diagram of an HSDI transceiver with bi-directional HSDI functionality according to an exemplary embodiment of the invention." Hsieh at [0015]. "Briefly summarized, an HSDI transceiver with bi-directional functionality can switch its function to make itself compatible to a typical HSDI source device/HSDI sink device, or form a bi-directional HSDI structure coupled with another HSDI transceiver with bi-directional functionality. It can extend the combinations and the usage of the HSDI device applications. When a DVD recorder and a digital television both have bi-directional HSDI functionality, TV signals can be received and processed by the tuner in the digital TV and transformed into HSDI signals by the HSDI device in the digital TV. The HSDI signals are then transported to the DVD recorder as a video input and an audio input. In this way, the DVD recorder does not need to be provided with a tuner while recording a TV program. The cost of the DVD recorder is hence significantly decreased. Moreover, a user can use a mobile phone or a remote computer to control the computer at home through the Internet to tum on a TV and switch the HSDI device inside the TV to act as a source device. By utilizing the bi-directional structure of the TV and the computer at home, the TV can transport TV signals to the computer. Once the computer has transferred the HSDI TV signal into a TS bit stream, it can further transmit the TS bit stream to the user through the Internet, allowing the user to watch TV programs in any location." Hsieh at [0035]. "If the specific HSDI device supports bi-directional functionalities, as shown in FIG. 2, the first multiplexer 106 of the HSDI transceiver 100 is connected to the first multiplexer 206 of the specific HSDI device 200 by a TMDS channel (or a wireless interface in another embodiment) to transport the HSDI signals bi-directionally between the HSDI transceiver 100 and the specific HSDI device 200, the controller 108 of the HSDI transceiver 100 is connected to the controller 208 of the specific HSDI device 200 by a CEC line (or a wireless interface), and the second multiplexer 112 of the

		HSDI trans-ceivers 100 is connected to the second multiplexer 212 of the specific HSDI device 200 by a display data channel (DDC) line (or a wireless interface) to transport the EDID of the sink device." Hsieh at [0020].  Fig. 1 Hsieh at Fig. 1.

		 Fig. 2 Hsieh at Fig. 2. To the extent that Plaintiff contends that Hsieh does not explicitly or inherently disclose this element, or render obvious this element, this element is obvious in combination with one or more references and/or with the knowledge of a person of ordinary skill in the art, as set forth in Defendant's Invalidity Contentions.
14(a)	a connector;	Hsieh discloses and/or renders obvious this limitation. *See* exemplary disclosures and corresponding discussion for claim element 1(c).

14(b)	communication logic of an audio/video (AV) device coupled to the connector, the communication logic including circuitry configured to implement:	Hsieh discloses and/or renders obvious this limitation. *See* exemplary disclosures and corresponding discussion for claim element 1(c) and 1(d).
14(b)(1)	an AV sink operation mode for the communication logic to receive AV data provided to the system at the connector and to receive power from a first supply voltage provided to the system at a channel of the connector, the AV sink operation mode being a default mode of operation for the system, and	Hsieh discloses and/or renders obvious this limitation. *See* exemplary disclosures and corresponding discussion for claim element 1(a) and 1(e).
14(b)(2)	an AV source operation mode for the communication logic to send AV data from the system via the connector and to provide a second	Hsieh discloses and/or renders obvious this limitation. *See* exemplary disclosures and corresponding discussion for claim element 1(g).

	supply voltage at the channel of the connector; and	
14(c)	control logic including circuitry to configure the communication logic to initialize the AV device to operate in the default AV sink operation mode in response to a power-on-reset or powering up of the AV device, to continue operating the AV device in the AV sink operation mode in response to determining that the first supply voltage is provided at the channel of the connector, and to configure the communication logic to transition the AV device from the AV sink operation mode to the AV source operation mode in response to	Hsieh discloses and/or renders obvious this limitation. *See* exemplary disclosures and corresponding discussion for claim element 1(a), 1(c), 1(d), and 1(f).

	determining that the first supply voltage is not provided at the channel of the connector.	

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Exhibit D-3

Invalidity of the '265 Patent in View of U.S. Pat. App. Pub. No. 2008/0028237 A1 to Knight (Knight).

This chart provides examples of where the prior art reference discloses, either expressly or inherently, the claim elements of asserted U.S. Patent No. 9,232,265 ("the '265 patent"). The citations herein are exemplary and are not exhaustive; Defendant has cited the most relevant portions of the identified prior art. For each citation, Defendant hereby incorporates by reference the entire cited prior art reference, and reserves the right to rely on uncited portions of each identified prior art reference. To provide context or identify the state of the art at the time of the alleged invention, Defendant reserves the right to rely on: (1) uncited portions of the identified prior art; (2) other prior art not identified herein; (3) references that show the state of the art (irrespective of whether such references themselves qualify as prior art); (4) factual testimony from the inventors or authors of the prior art references, or purveyors of prior art devices; and (5) expert testimony.

Where Defendant cites a figure, the citation includes any text associated with the figure. Where Defendant cites passages relating to a figure, the citation includes the associated figure any other text associated with that figure. Where Defendant cites particular prior art as disclosing a claim element, that citation equally applies to all identical or similar claim elements in this chart. Defendant reserves the right to further assert that a claim element is inherent, the element would have been obvious to a person of ordinary skill in the art, or the element is disclosed in other prior art that may be combined with the cited prior art. To establish the inherency of certain features of the prior art to invalidate the asserted claims, Defendant may rely on cited or uncited portions of the prior art, other documents, factual testimony, and expert testimony.

This invalidity chart is based on information presently available to Defendant, and the information herein is provided as a non-limiting example.

Knight was filed on July 26, 2006, and published on January 31, 2008; therefore, Knight is prior art under at least 35 U.S.C. § 102(b).

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Exhibit D-3

Claim Limitation		Knight
Claim 1		
1[p]	A method comprising:	To the extent the preamble is limiting, Knight discloses this element and/or renders it obvious either alone or in combination with other references and/or the knowledge of one of ordinary skill in the art. *See, e.g.*: "All electronic devices that are able to communicate with other devices have the need for both power and data communication on some level. It is often desirable to integrate both power and data into a single connector and sometimes even route both power and data over the same conductors." Knight at [0001]. "A typical scenario is one where a device, such as a remote video camera, is powered through the same interface through which it sends data. Such cameras are commercially available and may operate using USB, Firewire, or PoE. One device, the host, sources power while the other device, the camera, sinks power." Knight at [0002]. "Embodiment 100 is a device that is capable of communicating power and data through a single connector to another device....Such interfaces are useful for a wide variety of applications, including devices such as a remote camera that has data and power connections through a single USB or PoE cable." Knight at [0024]. "The embodiment 100 may be, for example, a portion of a laptop computer that has several connector interfaces 104, 106, 108, and 110 for powering and com-municating with various external devices, such as pointing devices, cameras, speakers, or any other device that uses a combination of data and power provided through one of the connector interfaces. The battery bank 126 in this example may be integral to the laptop computer, but may be charged through power from the external power source 136 or through power supplied on one of the connector interfaces 104, 106, 108, or 110." Knight at [0027]. "FIG. 2 is a flowchart diagram illustrating an embodiment 200 of a method for power management. When a connection is made with a remote device in block 202, three different options may happen for device 201." Knight at [0039].

		"In one option, the device 201 may have received a command to configure as a power source. If such command was received in block 204, the device may attempt to connect as a power source in block 212, otherwise the device may attempt to connect as a power sink in block 222." Knight at [0040]. "In a second option, the default device 201 configuration of block 206 may be to attempt to configure as a power source in block 212." Knight at [0041]. "In a third option, the device 201 may examine its battery or external power source status in block 208, and if the battery or external power source has sufficient power in block 210, the device 201 attempts to connect as a power source in block 212, otherwise the device 201 may attempt to connect as a power sink in block 222." Knight at [0042].

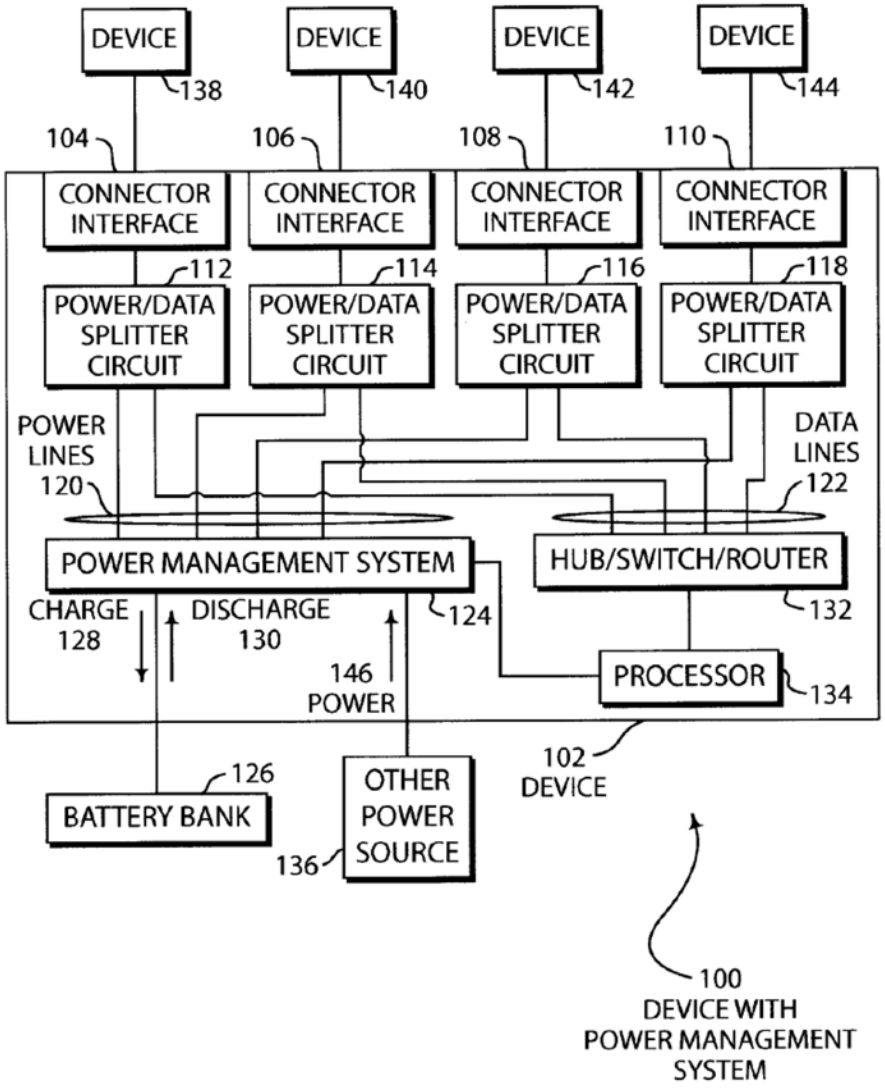
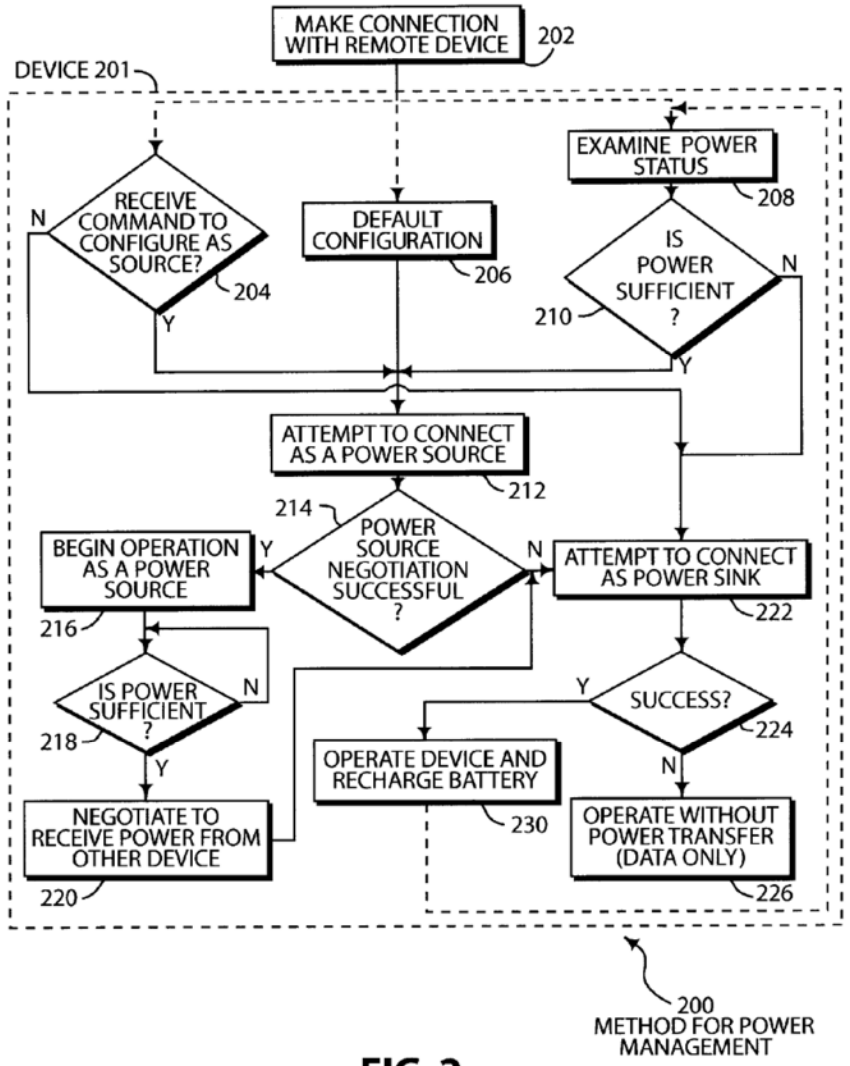

DEVICE
138
DEVICE
140
DEVICE
142
DEVICE
144
104
106
108
110
CONNECTOR INTERFACE
CONNECTOR INTERFACE
CONNECTOR INTERFACE
CONNECTOR INTERFACE
112
114
116
118
POWER/DATA SPLITTER CIRCUIT
POWER/DATA SPLITTER CIRCUIT
POWER/DATA SPLITTER CIRCUIT
POWER/DATA SPLITTER CIRCUIT
POWER LINES
120
DATA LINES
122
POWER MANAGEMENT SYSTEM
HUB/SWITCH/ROUTER
CHARGE
128
DISCHARGE
130
124
132
146
POWER
PROCESSOR
134
102
DEVICE
126
BATTERY BANK
OTHER POWER SOURCE
136
100
DEVICE WITH POWER MANAGEMENT SYSTEM

FIG. 1

		Knight at Fig. 1.  **FIG. 2** Knight at Fig. 2.

		To the extent that Plaintiff contends that Knight does not explicitly or inherently disclose this element, or render obvious this element, this element is obvious in combination with one or more references and/or with the knowledge of a person of ordinary skill in the art, as set forth in Defendant's Invalidity Contentions.
1(a)	initializing a first audio/video (AV) device to operate in a default AV sink operation mode in response to a power-on-reset or powering up of the first AV device;	Knight discloses and/or renders obvious this limitation. *See, e.g.*: "All electronic devices that are able to communicate with other devices have the need for both power and data communication on some level. It is often desirable to integrate both power and data into a single connector and sometimes even route both power and data over the same conductors." Knight at [0001]. "A typical scenario is one where a device, such as a remote video camera, is powered through the same interface through which it sends data. Such cameras are commercially available and may operate using USB, Firewire, or PoE. One device, the host, sources power while the other device, the camera, sinks power." Knight at [0002]. "Embodiment 100 is a device that is capable of communicating power and data through a single connector to another device....Such interfaces are useful for a wide variety of applications, including devices such as a remote camera that has data and power connections through a single USB or PoE cable." Knight at [0024]. "The embodiment 100 may be, for example, a portion of a laptop computer that has several connector interfaces 104, 106, 108, and 110 for powering and communicating with various external devices, such as pointing devices, cameras, speakers, or any other device that uses a combination of data and power provided through one of the connector interfaces. The battery bank 126 in this example may be integral to the laptop computer, but may be charged through power from the external power source 136 or through power supplied on one of the connector interfaces 104, 106, 108, or 110." Knight at [0027]. "Power may be managed across multiple devices and power may be managed as a system of several devices. For example, device 138 may be initially configured to supply power from a battery source

		attached to device 138, and the power supply may be sufficient to power devices 140, 142, and 144. When the battery source attached to device 138 reaches a low threshold, communication through the data lines 122 may be used to reconfigure the system such that the device 102 and the battery bank 126 supplies power to the devices 140, 142, and 144. Additionally, the device 138 may switch from sourcing power to sinking power from device 102. In this manner, several devices, each having a store of power, may share power and reconfigure power delivery such that the entire system remains powered." Knight at [0037]. "The embodiment 200 illustrates a method by which a device first attempts to connect as a power source, then attempts to connect as a power sink if the power source attempt fails. In other embodiments, a device may be configured to attempt to connect as a power sink initially, then attempts as a power source secondarily." Knight at [0048].

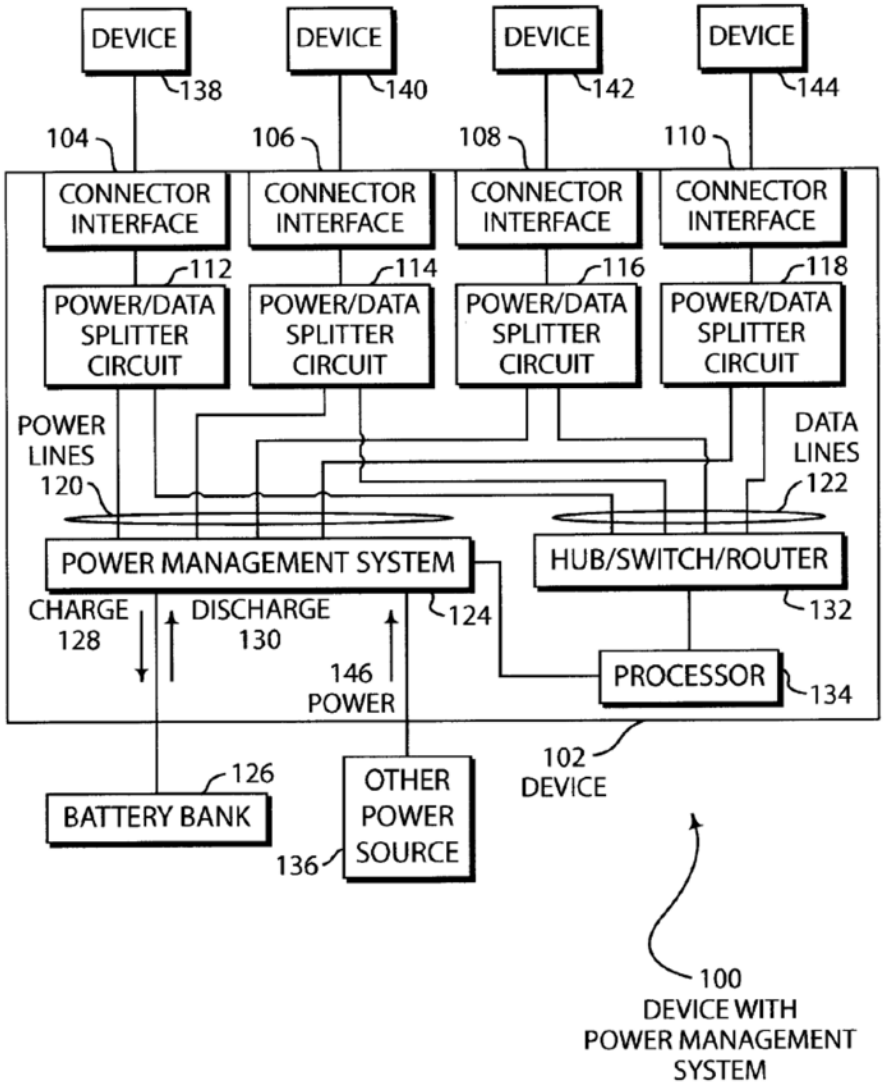
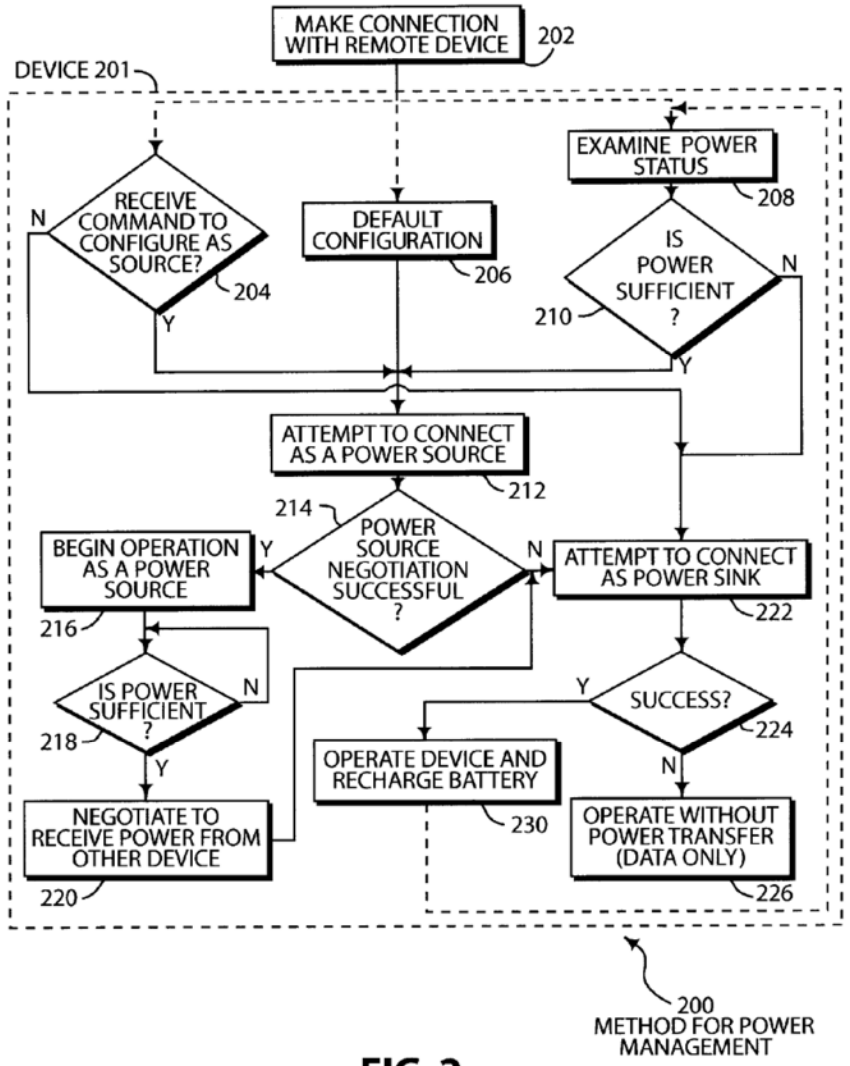

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CONNECTOR INTERFACE
CONNECTOR INTERFACE
CONNECTOR INTERFACE
CONNECTOR INTERFACE
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116
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POWER/DATA SPLITTER CIRCUIT
POWER/DATA SPLITTER CIRCUIT
POWER/DATA SPLITTER CIRCUIT
POWER/DATA SPLITTER CIRCUIT
POWER LINES
120
DATA LINES
122
POWER MANAGEMENT SYSTEM
HUB/SWITCH/ROUTER
CHARGE
128
DISCHARGE
130
124
132
146
POWER
PROCESSOR
134
102
DEVICE
126
BATTERY BANK
OTHER POWER SOURCE
136
100
DEVICE WITH POWER MANAGEMENT SYSTEM

FIG. 1

		Knight at Fig. 1.  **FIG. 2** Knight at Fig. 2.

		To the extent that Plaintiff contends that Knight does not explicitly or inherently disclose this element, or render obvious this element, this element is obvious in combination with one or more references and/or with the knowledge of a person of ordinary skill in the art, as set forth in Defendant's Invalidity Contentions.
1(b)	detecting with control circuitry of the first AV device, a coupling between the first AV device and a second AV device;	Knight discloses and/or renders obvious this limitation. *See, e.g.*: "In cases where the connector interfaces 104, 106, 108, or 110 are able to both sink and source power, a remote device may be able to supply power for a period of time, during which the battery bank 126 may be charged. The same remote device may then switch to a mode where the remote device can no longer source power but requires the device 102 to source power. In such a mode, the battery bank 126 may be discharged to supply power to the system." Knight at [0030]. "The device 102 may operate as a hub, switch, or router for data, and the data lines 122 may be routed to a hub, switch, or router circuit 132. Data hubs, switches, and routers are known in the art and enable multiple devices to be connected to each other in various network configurations. In some embodiments, the device 102 may merely be a dedicated network connection device, while in other embodiments, the device 102 may be a portion of a computer, robot, network appliance, or other device having other substantial functionality and purposes. By having a hub, switch, or router functionality, the device 102 may connect to multiple devices and enable communication between those remote devices. Such an embodiment may be where the connector interfaces 104, 106, 108, and 110 use Ethernet-based communication protocols, such as PoE." Knight at [0031]. "Some embodiments may be adapted such that each device 138, 140, 142, and 144 are in communication with the processor 134 and no direct communication between the remote devices are possible. Such an embodiment may be where the device 102 is a personal computer and the connector interfaces 104, 106, 108, and 110 are USB ports or other similar architecture. In such an embodiment, the USB devices communicate directly with the processor 134 and not with each other." Knight at [0032] "A device may have an integrated data and power interface and may have a power management system that is able to detect if another device connected to the interface may source power from which the first device may charge a battery. If the other device is not capable of sourcing power,

		the interface may be able to detect if the other device requires power from the battery. If so, the device may configure itself to supply power to the other device. In some embodiments, the device may use electronic logic or state machines for such negotiation over the power signal lines, while in other embodiments, the various devices may com-municate through the data channels for such negotiation." Knight at [0004] "FIG. 2 is a flowchart diagram illustrating an embodiment 200 of a method for power management. When a connection is made with a remote device in block 202, three different options may happen for device 201." Knight at [0039].

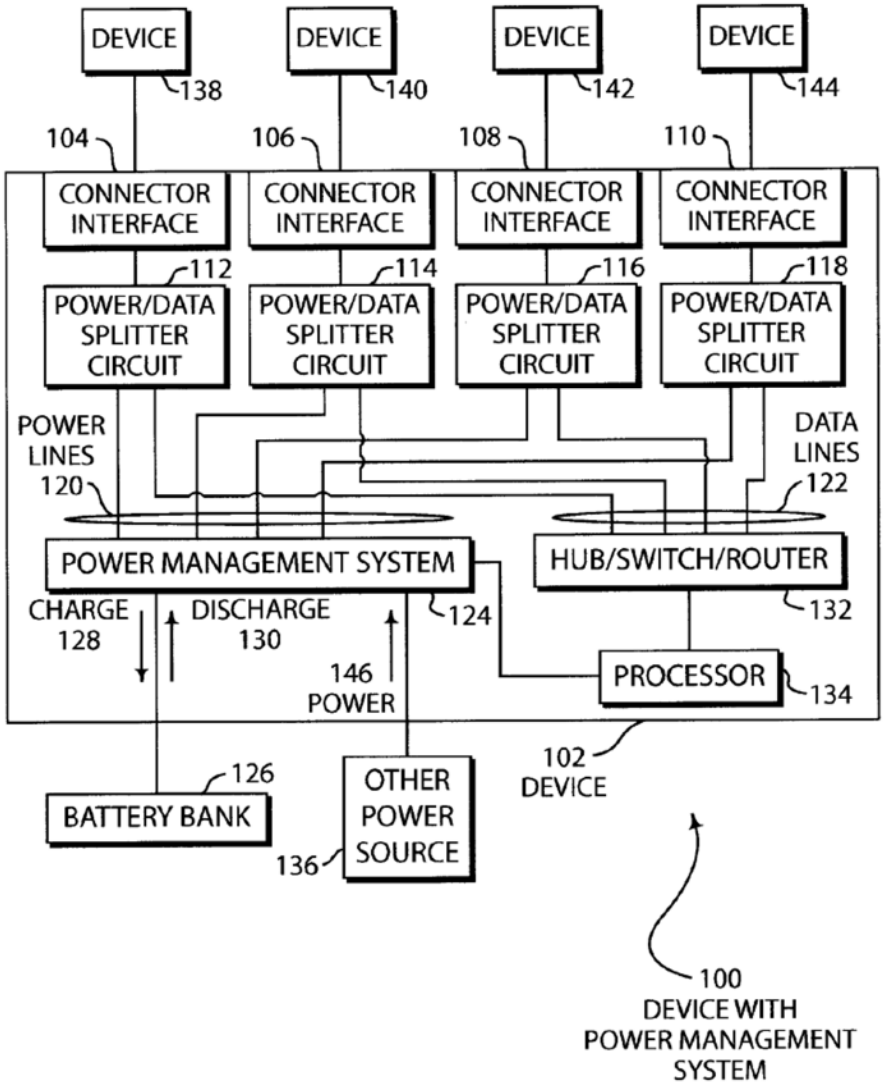
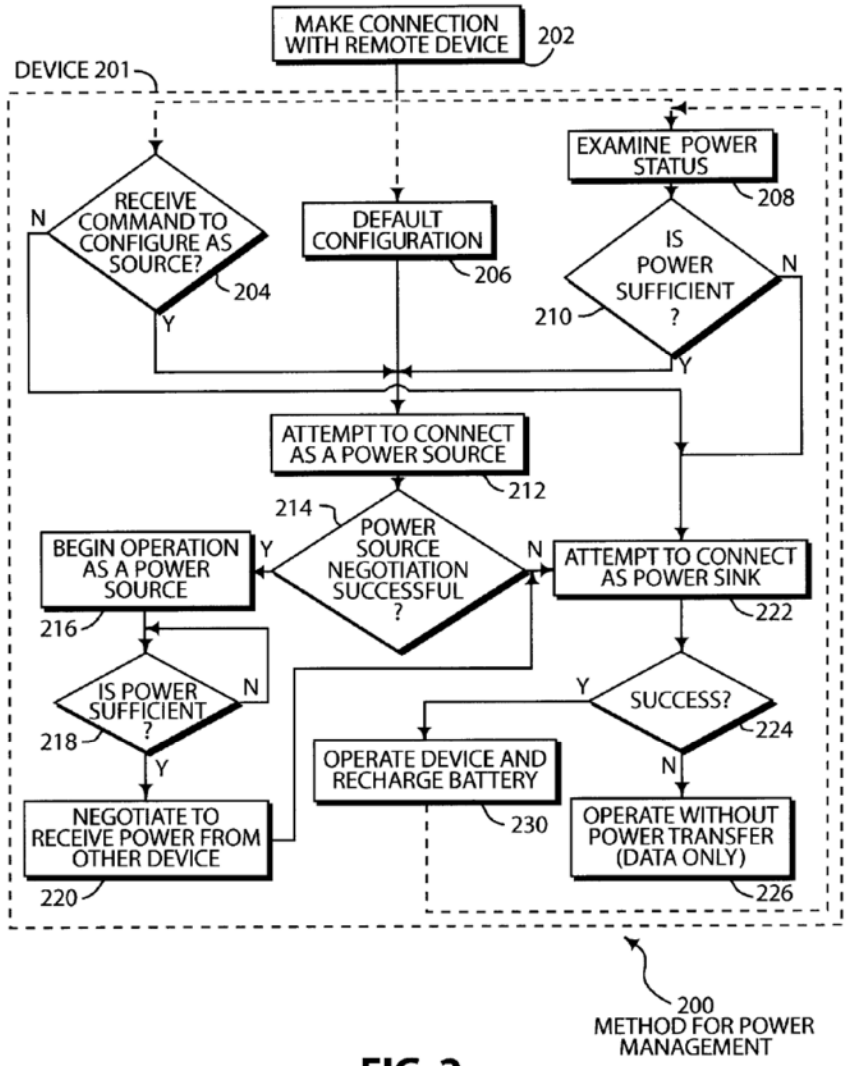

DEVICE
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DEVICE
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CONNECTOR INTERFACE
CONNECTOR INTERFACE
CONNECTOR INTERFACE
CONNECTOR INTERFACE
112
114
116
118
POWER/DATA SPLITTER CIRCUIT
POWER/DATA SPLITTER CIRCUIT
POWER/DATA SPLITTER CIRCUIT
POWER/DATA SPLITTER CIRCUIT
POWER LINES
120
DATA LINES
122
POWER MANAGEMENT SYSTEM
HUB/SWITCH/ROUTER
CHARGE
128
DISCHARGE
130
124
132
146
POWER
PROCESSOR
134
102
DEVICE
126
BATTERY BANK
OTHER POWER SOURCE
136
100
DEVICE WITH POWER MANAGEMENT SYSTEM

FIG. 1

		Knight at Fig. 1.  **FIG. 2** Knight at Fig. 2.

		To the extent that Plaintiff contends that Knight does not explicitly or inherently disclose this element, or render obvious this element, this element is obvious in combination with one or more references and/or with the knowledge of a person of ordinary skill in the art, as set forth in Defendant's Invalidity Contentions.
1(c)	determining whether a first supply voltage is provided at a channel of a connector, the connector coupling the first AV device and the second AV device;	Knight discloses and/or renders obvious this limitation. *See, e.g.*: "The power management system 124 may be adapted to manage the power of several devices 102, 138, 140, 142, and 144. Any or all of the devices 138, 140, 142, or 144 may be able to supply power through the respective connector interfaces to charge the battery bank 126. Similarly, any of the devices 138, 140, 142, and 144 may draw power through the connector interfaces that would discharge the battery bank 126." Knight at [0029], Fig.1. "The embodiment 100 may be, for example, a portion of a laptop computer that has several connector interfaces 104, 106, 108, and 110 for powering and com-municating with various external devices, such as pointing devices, cameras, speakers, or any other device that uses a combination of data and power provided through one of the connector interfaces. The battery bank 126 in this example may be integral to the laptop computer, but may be charged through power from the external power source 136 or through power supplied on one of the connector interfaces 104, 106, 108, or 110." Knight at [0027] "The embodiment 200 illustrates a method by which a device first attempts to connect as a power source, then attempts to connect as a power sink if the power source attempt fails. In other embodiments, a device may be configured to attempt to connect as a power sink initially, then attempts as a power source secondarily." Knight at [0048] "If the power source negotiation is not successful in block 214, the device may attempt to connect as a power sink in block 222. If the connection is successful in block 224, the device may operate in a power sink mode and recharge any attached batteries in block 230. The device may continue to examine the battery status in block 208 and may change from a power sink to a power source if the battery is recharged." Knight at [0044].

		"In other cases, the negotiation may be through sensing status and communicating through the power connections. One example of such communication may be for a device to configure a specific resistance along the power connections to indicate that it may sink power. The connecting device may sense the resistance and then begin supplying power to the first device." Knight at [0047]. To the extent that Plaintiff contends that Knight does not explicitly or inherently disclose this element, or render obvious this element, this element is obvious in combination with one or more references and/or with the knowledge of a person of ordinary skill in the art, as set forth in Defendant's Invalidity Contentions.
1(d)	in response to determining that the first supply voltage is provided at the channel of the connector, configuring communication logic of the first AV device to continue operating the first AV device in the AV sink operation mode;	Knight discloses and/or renders obvious this limitation. *See, e.g.*: Knight describes a source/sink negotiation process which "may be through sensing status and communicating through the power connections." Knight at [0047]. "The embodiment 200 illustrates a method by which a device first attempts to connect as a power source, then attempts to connect as a power sink if the power source attempt fails. In other embodiments, a device may be configured to attempt to connect as a power sink initially, then attempts as a power source secondarily." Knight at [0048] "If the power source negotiation is not successful in block 214, the device may attempt to connect as a power sink in block 222. If the connection is successful in block 224, the device may operate in a power sink mode and recharge any attached batteries in block 230. The device may continue to examine the battery status in block 208 and may change from a power sink to a power source if the battery is recharged." Knight at [0044]. "In other cases, the negotiation may be through sensing status and communicating through the power connections. One example of such communication may be for a device to configure a specific resistance along the power connections to indicate that it may sink power. The connecting device may sense the resistance and then begin supplying power to the first device." Knight at [0047].

		To the extent that Plaintiff contends that Knight does not explicitly or inherently disclose this element, or render obvious this element, this element is obvious in combination with one or more references and/or with the knowledge of a person of ordinary skill in the art, as set forth in Defendant's Invalidity Contentions.
1(e)	when operating the first AV device in the AV sink operation mode, receiving AV data provided to the first AV device via the connector and receiving power from the first supply voltage provided to the first AV device at the channel of the connector;	Knight discloses and/or renders obvious this limitation. *See, e.g.*: The devices 102, 138, 140, 142, and 144 (laptop, camera, etc.) are inherently capable of bi-directional data transfer. The devices have two power modes: "In cases where the connector interfaces 104, 106, 108, or 110 are able to both sink and source power, a remote device may be able to supply power for a period of time, during which the battery bank 126 may be charged. The same remote device may then switch to a mode where the remote device can no longer source power but requires the device 102 to source power. In such a mode, the battery bank 126 may be discharged to supply power to the system." Knight at [0030]. "The device 102 may operate as a hub, switch, or router for data, and the data lines 122 may be routed to a hub, switch, or router circuit 132. Data hubs, switches, and routers are known in the art and enable multiple devices to be connected to each other in various network configura-tions. In some embodiments, the device 102 may merely be a dedicated network connection device, while in other embodiments, the device 102 may be a portion of a com-puter, robot, network appliance, or other device having other substantial functionality and purposes. By having a hub, switch, or router functionality, the device 102 may connect to multiple devices and enable communication between those remote devices. Such an embodiment may be where the connector interfaces 104, 106, 108, and 110 use Ether-net-based communication protocols, such as PoE." Knight at [0031]. "Some embodiments may be adapted such that each device 138, 140, 142, and 144 are in communication with the processor 134 and no direct communication between the remote devices are possible. Such an embodiment may be where the device 102 is a personal computer and the connector interfaces 104, 106, 108, and 110 are USB ports or other similar architecture. In such an embodiment, the USB devices communicate directly with the processor 134 and not with each other." Knight at [0032]

		To the extent that Plaintiff contends that Knight does not explicitly or inherently disclose this element, or render obvious this element, this element is obvious in combination with one or more references and/or with the knowledge of a person of ordinary skill in the art, as set forth in Defendant's Invalidity Contentions.
1(f)	in response to determining that the first supply voltage is not provided at the channel of the connector, configuring the communication logic of the first AV device to transition the first AV device from the AV sink operation mode to an AV source operation mode; and	Knight discloses and/or renders obvious this limitation. *See, e.g.*: Knight describes a source/sink negotiation process which "may be through sensing status and communicating through the power connections." Knight at [0047]. "The embodiment 200 illustrates a method by which a device first attempts to connect as a power source, then attempts to connect as a power sink if the power source attempt fails. In other embodiments, a device may be configured to attempt to connect as a power sink initially, then attempts as a power source secondarily." Knight at [0048] "If the power source negotiation is not successful in block 214, the device may attempt to connect as a power sink in block 222. If the connection is successful in block 224, the device may operate in a power sink mode and recharge any attached batteries in block 230. The device may continue to examine the battery status in block 208 and may change from a power sink to a power source if the battery is recharged." Knight at [0044]. "In other cases, the negotiation may be through sensing status and communicating through the power connections. One example of such communication may be for a device to configure a specific resistance along the power connections to indicate that it may sink power. The connecting device may sense the resistance and then begin supplying power to the first device." Knight at [0047]. To the extent that Plaintiff contends that Knight does not explicitly or inherently disclose this element, or render obvious this element, this element is obvious in combination with one or more references and/or with the knowledge of a person of ordinary skill in the art, as set forth in Defendant's Invalidity Contentions.
1(g)	when operating the first AV device in the AV source operation mode, sending AV	Knight discloses and/or renders obvious this limitation. *See, e.g.*: The devices 102, 138, 140, 142, and 144 (laptop, camera, etc.) are inherently capable of bi-directional data transfer. The devices have two power modes:

	data via the connector and providing a second supply voltage at the channel of the connector.	"In cases where the connector interfaces 104, 106, 108, or 110 are able to both sink and source power, a remote device may be able to supply power for a period of time, during which the battery bank 126 may be charged. The same remote device may then switch to a mode where the remote device can no longer source power but requires the device 102 to source power. In such a mode, the battery bank 126 may be discharged to supply power to the system." Knight at [0030]. "The device 102 may operate as a hub, switch, or router for data, and the data lines 122 may be routed to a hub, switch, or router circuit 132. Data hubs, switches, and routers are known in the art and enable multiple devices to be connected to each other in various network configura-tions. In some embodiments, the device 102 may merely be a dedicated network connection device, while in other embodiments, the device 102 may be a portion of a com-puter, robot, network appliance, or other device having other substantial functionality and purposes. By having a hub, switch, or router functionality, the device 102 may connect to multiple devices and enable communication between those remote devices. Such an embodiment may be where the connector interfaces 104, 106, 108, and 110 use Ether-net-based communication protocols, such as PoE." Knight at [0031]. "Some embodiments may be adapted such that each device 138, 140, 142, and 144 are in communication with the processor 134 and no direct communication between the remote devices are possible. Such an embodiment may be where the device 102 is a personal computer and the connector interfaces 104, 106, 108, and 110 are USB ports or other similar architecture. In such an embodiment, the USB devices communicate directly with the processor 134 and not with each other." Knight at [0032]. To the extent that Plaintiff contends that Knight does not explicitly or inherently disclose this element, or render obvious this element, this element is obvious in combination with one or more references and/or with the knowledge of a person of ordinary skill in the art, as set forth in Defendant's Invalidity Contentions.
Claim 8		
8[p]	An audio/video (AV) device comprising:	To the extent the preamble is limiting, Knight discloses this element and/or renders it obvious either alone or in combination with other references and/or the knowledge of one of ordinary skill in the art. *See, e.g.*:

		"All electronic devices that are able to communicate with other devices have the need for both power and data communication on some level. It is often desirable to integrate both power and data into a single connector and sometimes even route both power and data over the same conductors." Knight at [0001]. "A typical scenario is one where a device, such as a remote video camera, is powered through the same interface through which it sends data. Such cameras are commercially available and may operate using USB, Firewire, or PoE. One device, the host, sources power while the other device, the camera, sinks power." Knight at [0002]. "Embodiment 100 is a device that is capable of communicating power and data through a single connector to another device....Such interfaces are useful for a wide variety of applications, including devices such as a remote camera that has data and power connections through a single USB or PoE cable." Knight at [0024]. "The embodiment 100 may be, for example, a portion of a laptop computer that has several connector interfaces 104, 106, 108, and 110 for powering and com-municating with various external devices, such as pointing devices, cameras, speakers, or any other device that uses a combination of data and power provided through one of the connector interfaces. The battery bank 126 in this example may be integral to the laptop computer, but may be charged through power from the external power source 136 or through power supplied on one of the connector interfaces 104, 106, 108, or 110." Knight at [0027].

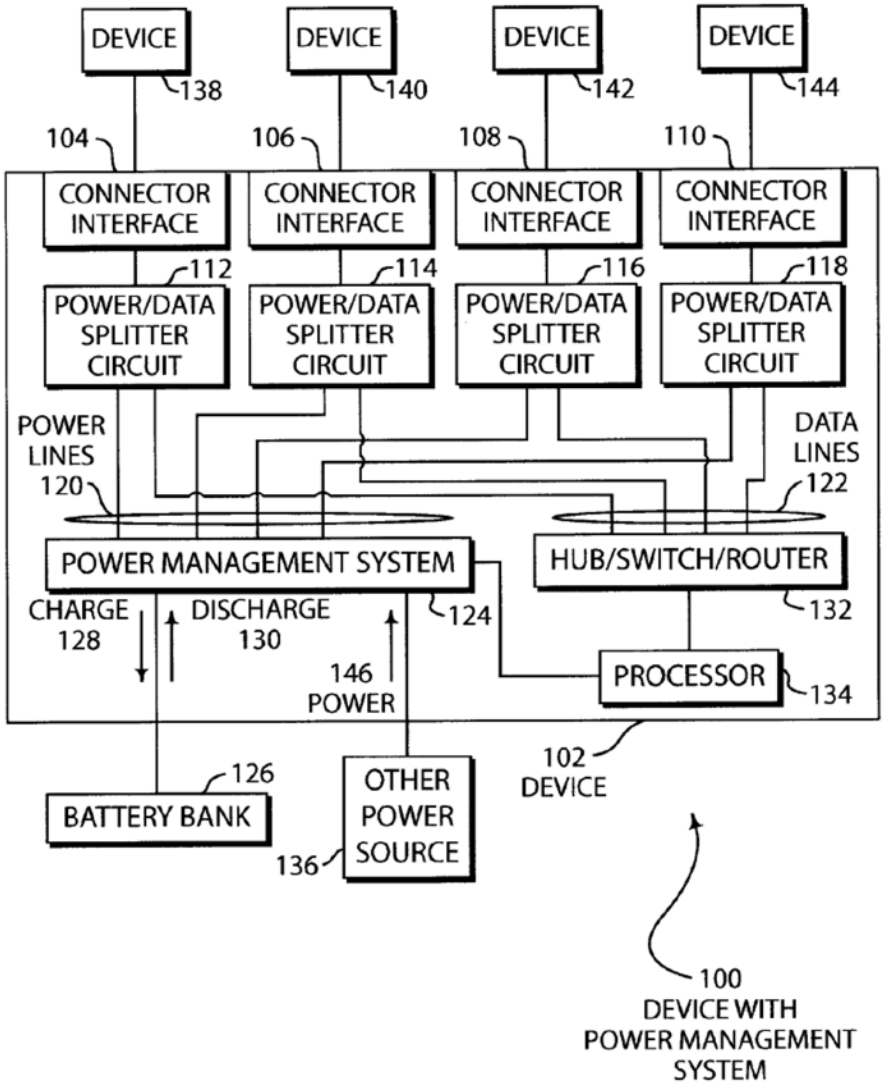


FIG. 1

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Ex. 2006 - Page 107

		Knight at Fig. 1. To the extent that Plaintiff contends that Knight does not explicitly or inherently disclose this element, or render obvious this element, this element is obvious in combination with one or more references and/or with the knowledge of a person of ordinary skill in the art, as set forth in Defendant's Invalidity Contentions.
8(a)	communication logic to couple to a connector, the communication logic including circuitry configured to implement:	Knight discloses and/or renders obvious this limitation. *See* exemplary disclosures and corresponding discussion for claim element 1(c) and 1(d).
8(a)(1)(ii)	an AV sink operation mode for the communication logic to receive AV data provided to the AV device at the connector and to receive power from a first supply voltage provided to the AV device via a channel of the connector,	Knight discloses and/or renders obvious this limitation. *See* exemplary disclosures and corresponding discussion for claim element 1(e).
8(a)(1)(ii)	the AV sink operation mode being a default mode of operation for the AV device, and	Knight discloses and/or renders obvious this limitation. *See* exemplary disclosures and corresponding discussion for claim element 1(a).

8(a)(2)	an AV source operation mode for the communication logic to send AV data from the AV device via the connector and to provide a second supply voltage at the channel of the connector; and	Knight discloses and/or renders obvious this limitation. *See* exemplary disclosures and corresponding discussion for claim element 1(g).
8(b)(1)	control logic including circuitry to configure the communication logic to initialize the AV device to operate in the default AV sink operation mode in response to a power-on-reset or powering up of the AV device,	Knight discloses and/or renders obvious this limitation. *See* exemplary disclosures and corresponding discussion for claim element 1(a).
8(b)(2)	to continue operating the AV device in the AV sink operation mode in response to determining that the first supply voltage is provided at the channel of the connector, and to configure the	Knight discloses and/or renders obvious this limitation. *See* exemplary disclosures and corresponding discussion for claim element 1(d), 1(f), and 1(c).

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	communication logic to transition the AV device from the AV sink operation mode to the AV source operation mode in response to determining that the first supply voltage is not provided at the channel of the connector.	
Claim 11		
11(a)	The device of claim 8, further comprising: detector logic to detect, while the communication logic is in the default operation mode, a coupling of the AV device to another AV device via the connector; and	Knight discloses, expressly or inherently, the device of claim 8 under any proposed construction, and further discloses and/or renders obvious limitation 11(a). See exemplary disclosures and corresponding discussion for claim 8 and claim element 1(b).
11(b)	wherein the communication logic is further configured to perform an AV data exchange with the other device in	Knight discloses and/or renders obvious this limitation. *See* exemplary disclosures and corresponding discussion for claim element 1(e) and 1(g).

	response to the detection.	
Claim 14		
14[p]	A system comprising:	To the extent the preamble is limiting, Knight discloses this element and/or renders it obvious either alone or in combination with other references and/or the knowledge of one of ordinary skill in the art. *See, e.g.*: "All electronic devices that are able to communicate with other devices have the need for both power and data communication on some level. It is often desirable to integrate both power and data into a single connector and sometimes even route both power and data over the same conductors." Knight at [0001]. "A typical scenario is one where a device, such as a remote video camera, is powered through the same interface through which it sends data. Such cameras are commercially available and may operate using USB, Firewire, or PoE. One device, the host, sources power while the other device, the camera, sinks power." Knight at [0002]. "Embodiment 100 is a device that is capable of communicating power and data through a single connector to another device....Such interfaces are useful for a wide variety of applications, including devices such as a remote camera that has data and power connections through a single USB or PoE cable." Knight at [0024]. "The embodiment 100 may be, for example, a portion of a laptop computer that has several connector interfaces 104, 106, 108, and 110 for powering and com-municating with various external devices, such as pointing devices, cameras, speakers, or any other device that uses a combination of data and power provided through one of the connector interfaces. The battery bank 126 in this example may be integral to the laptop computer, but may be charged through power from the external power source 136 or through power supplied on one of the connector interfaces 104, 106, 108, or 110." Knight at [0027].

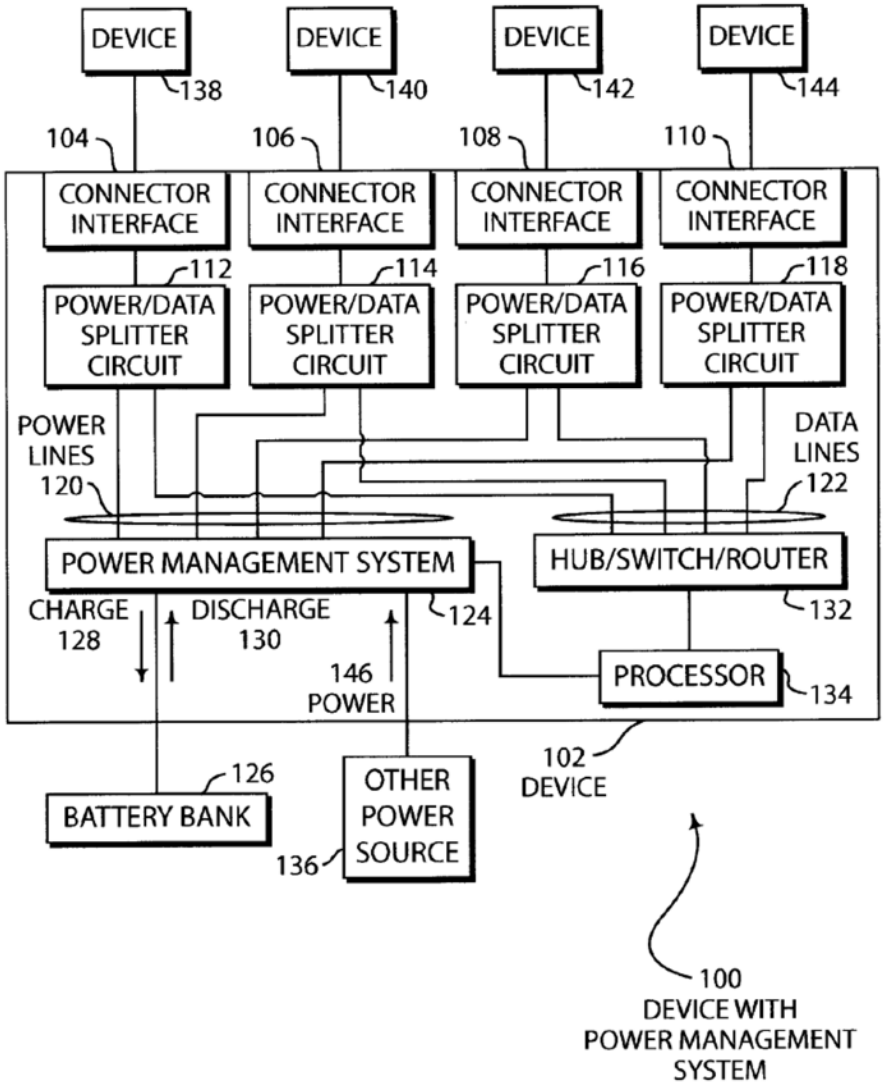

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CONNECTOR INTERFACE
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POWER/DATA SPLITTER CIRCUIT
POWER/DATA SPLITTER CIRCUIT
POWER/DATA SPLITTER CIRCUIT
POWER/DATA SPLITTER CIRCUIT
POWER LINES
120
DATA LINES
122
POWER MANAGEMENT SYSTEM
HUB/SWITCH/ROUTER
CHARGE
128
DISCHARGE
130
124
132
146
POWER
PROCESSOR
134
102
DEVICE
126
BATTERY BANK
OTHER POWER SOURCE
136
100
DEVICE WITH POWER MANAGEMENT SYSTEM

FIG. 1

		Knight at Fig. 1. To the extent that Plaintiff contends that Knight does not explicitly or inherently disclose this element, or render obvious this element, this element is obvious in combination with one or more references and/or with the knowledge of a person of ordinary skill in the art, as set forth in Defendant's Invalidity Contentions.
14(a)	a connector;	Knight discloses and/or renders obvious this limitation. *See* exemplary disclosures and corresponding discussion for claim element 1(c).
14(b)	communication logic of an audio/video (AV) device coupled to the connector, the communication logic including circuitry configured to implement:	Knight discloses and/or renders obvious this limitation. *See* exemplary disclosures and corresponding discussion for claim element 1(c) and 1(d).
14(b)(1)	an AV sink operation mode for the communication logic to receive AV data provided to the system at the connector and to receive power from a first supply voltage provided to the system at a channel of the connector, the AV sink operation mode being a default mode	Knight discloses and/or renders obvious this limitation. *See* exemplary disclosures and corresponding discussion for claim element 1(a) and 1(e).

	of operation for the system, and	
14(b)(2)	an AV source operation mode for the communication logic to send AV data from the system via the connector and to provide a second supply voltage at the channel of the connector; and	Knight discloses and/or renders obvious this limitation. *See* exemplary disclosures and corresponding discussion for claim element 1(g).
14(c)	control logic including circuitry to configure the communication logic to initialize the AV device to operate in the default AV sink operation mode in response to a power-on-reset or powering up of the AV device, to continue operating the AV device in the AV sink operation mode in response to determining that the first supply voltage is provided at the channel of the	Knight discloses and/or renders obvious this limitation. *See* exemplary disclosures and corresponding discussion for claim element 1(a), 1(c), 1(d), and 1(f).

	connector, and to configure the communication logic to transition the AV device from the AV sink operation mode to the AV source operation mode in response to determining that the first supply voltage is not provided at the channel of the connector.	

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Exhibit D-4

Invalidity of the '265 Patent in View of High-Definition Multimedia Interface v1.4 (HDMI 1.4)

This chart provides examples of where the prior art reference discloses, either expressly or inherently, the claim elements of asserted U.S. Patent No. 9,232,265 ("the '265 patent"). The citations herein are exemplary and are not exhaustive; Defendant has cited the most relevant portions of the identified prior art. For each citation, Defendant hereby incorporates by reference the entire cited prior art reference, and reserves the right to rely on uncited portions of each identified prior art reference. To provide context or identify the state of the art at the time of the alleged invention, Defendant reserves the right to rely on: (1) uncited portions of the identified prior art; (2) other prior art not identified herein; (3) references that show the state of the art (irrespective of whether such references themselves qualify as prior art); (4) factual testimony from the inventors or authors of the prior art references, or purveyors of prior art devices; and (5) expert testimony.

Where Defendant cites a figure, the citation includes any text associated with the figure. Where Defendant cites passages relating to a figure, the citation includes the associated figure any other text associated with that figure. Where Defendant cites particular prior art as disclosing a claim element, that citation equally applies to all identical or similar claim elements in this chart. Defendant reserves the right to further assert that a claim element is inherent, the element would have been obvious to a person of ordinary skill in the art, or the element is disclosed in other prior art that may be combined with the cited prior art. To establish the inherency of certain features of the prior art to invalidate the asserted claims, Defendant may rely on cited or uncited portions of the prior art, other documents, factual testimony, and expert testimony.

This invalidity chart is based on information presently available to Defendant, and the information herein is provided as a non-limiting example.

HDMI 1.4 was published on June 5, 2009; therefore, HDMI 1.4 is prior art under at least 35 U.S.C. § 102(b). HDMI 1.4 was incorporated into many devices. For example, Samsung's HW-D7000 entertainment system featured a combined Blue-ray player and A/V receiver. Samsung's HW-D7000 entertainment system was sold or offered for sale in the United States by at least September 20, 2011. Aspects of Samsung's HW-D7000 entertainment system are described at least in the following publications and documents:

- HDTV Solutions, "Samsung HW-D7000 Review" (2011), available at https://www.hdtvsolutions.com/Samsung_HW-D7000_AV_Receiver_Blu-ray_Player.htm ("Samsung HW-D7000 Review").

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Exhibit D-4

Claim Limitation		HDMI 1.4
Claim 1		
1[p]	A method comprising:	To the extent the preamble is limiting, HDMI 1.4 discloses this element and/or renders it obvious either alone or in combination with other references and/or the knowledge of one of ordinary skill in the art. *See, e.g.*: "This document constitutes the specification for the High-Definition Multimedia Interface (HDMI), version 1.4. The High-Definition Multimedia Interface is provided for transmitting digital television audiovisual signals from DVD players, set-top boxes and other audiovisual sources to television sets, projectors and other video displays. HDMI can carry high quality multi-channel audio data and can carry all standard and high-definition consumer electronics video formats. Content protection technology is available. HDMI can also carry control, status and data information in both directions. This specification completely describes the interface such that one could implement a complete transmission and interconnect solution or any portion of the interface. The underlying Transition Minimized Differential Signaling (TMDS)-based protocol and associated electrical signaling is described in detail. The mechanical specification of the connector and the signal placement within the connector are described. A device that is compliant with this specification is interoperable with other compliant devices through the configuration and implementation provided for in this specification. Mechanical, electrical, behavioral and protocol requirements necessary for compliance are described for sources, sinks and cables." HDMI 1.4 at 1. "(HDMI) Source A device with an HDMI output. (HDMI) Sink A device with an HDMI input." HDMI 1.4 at 6. "HDMI system architecture is defined to consist of Sources and Sinks. A given device may have one or more HDMI inputs and one or more HDMI outputs. Each HDMI input on these devices shall

		follow all of the rules for an HDMI Sink and each HDMI output shall follow all of the rules for an HDMI Source. As shown in Figure 3-1, the HDMI cable and connectors carry four differential pairs that make up the TMDS data and clock channels. These channels are used to carry video, audio and auxiliary data. In addition, HDMI carries a VESA DDC channel. The DDC is used for configuration and status exchange between a single Source and a single Sink. The optional CEC protocol provides high-level control functions between all of the various audiovisual products in a user's environment. The optional HDMI Ethernet and Audio Return Channel (HEAC) provides Ethernet compatible data networking between connected devices and an Audio Return Channel in the opposite direction from TMDS. Audio, video and auxiliary data is transmitted across the three TMDS data channels. A TMDS clock, typically running at the video pixel rate, is transmitted on the TMDS clock channel and is used by the receiver as a frequency reference for data recovery on the three TMDS data channels. At the source, TMDS encoding converts the 8 bits per TMDS data channel into the 10 bit DC-balanced, transition minimized sequence which is then transmitted serially across the pair at a rate of 10 bits per TMDS clock period. Video data can have a pixel size of 24, 30, 36 or 48 bits. Video at the default 24-bit color depth is carried at a TMDS clock rate equal to the pixel clock rate. Higher color depths are carried using a correspondingly higher TMDS clock rate. Video formats with TMDS rates below 25MHz (e.g. 13.5MHz for 480i/NTSC) can be transmitted using a pixel-repetition scheme. The video pixels can be encoded in either RGB, YCBCR 4:4:4 or YCBCR 4:2:2 formats." HDMI 1.4 at 9. "The conceptual schematic of one TMDS differential pair is shown in Figure 4-22. TMDS technology uses current drive to develop the low voltage differential signal at the Sink side of the DC-coupled transmission line. The link reference voltage AVcc sets the high voltage level of the differential signal, while the low voltage level is determined by the current source of the HDMI Source and the termination resistance at the Sink. The termination resistance (RT) and the characteristic impedance of the cable (Z0) must be matched." HDMI 1.4 at 53.

		"The HDMI connector provides a pin allowing the Source to supply +5.0 Volts to the cable and Sink. All HDMI Sources shall assert the +5V Power signal whenever the Source is using the DDC or TMDS signals. The voltage driven by the Source shall be within the limits specified for TP1 voltage in Table 4-34. An HDMI Source shall have +5V Power signal over-current protection of no more than 0.5A. All HDMI Sources shall be able to supply a minimum of 55 mA to the +5V Power pin. A Sink shall not draw more than 50 mA of current from the +5V Power pin. When the Sink is powered on, it can draw no more than 10mA of current from the +5V Power signal. A Sink shall assume that any voltage within the range specified for TP2 voltage in Table 4-34 indicates that a Source is connected and applying power to the +5V Power signal. A Cable Assembly shall be able to supply a minimum of 50mA to the +5V Power pin to a Sink, even when connected to a Source supplying no more than 55mA. The return for the +5V Power signal is DDC/CEC Ground signal." HDMI 1.4 at 71. "The Display Data Channel (DDC) I/Os and wires (SDA, SCL, DDC/CEC Ground), shall meet the requirements specified in the I2C-bus Specification, version 2.1, Section 15 for "Standard-Mode" devices. Note that the discussions of high capacitance environments in the I2C-bus Specification, section 17.2, "Switched pull-up circuit for Fast-mode I2C-bus", may be applied to the HDMI environment as well. HDMI devices shall have DDC electrical characteristics complying with the values shown in Table 4-35, Table 4-36 and Table 4-37. The exact method and measurement procedure is written in HDMI Compliance Test Specification. In some cases, buffers or I2C "accelerators" may be inserted in the cable as long as all I2C timing requirements are met." HDMI 1.4 at 72.

		"An HDMI Sink shall not assert high voltage level on its Hot Plug Detect pin when the E-EDID is not available for reading. This requirement shall be fulfilled at all times, even if the Sink is powered-off or in standby. The Hot Plug Detect pin may be asserted only when the +5V Power line from the Source is detected. This will ensure that the Hot Plug Detect pin is not asserted before the Third Make of the connector (see Section 4.1.5). A Source may use a high voltage level Hot Plug Detect signal to initiate the reading of E-EDID data. A Source shall assume that any voltage within the range specified for High voltage level in Table 4-39 indicates that a Sink is connected and that E-EDID is readable. It does not indicate whether or not the Sink is powered or whether or not the HDMI input on the Sink is selected or active. An HDMI Sink shall indicate any change to the contents of the E-EDID by driving a low voltage level pulse on the Hot Plug Detect pin. This pulse shall be at least 100 msec." HDMI 1.4 at 153. "All HDMI Sources shall be compatible with DVI 1.0 compliant sink devices (i.e. "monitors" or "displays") through the use of a passive cable converter. Likewise, all HDMI Sinks shall be compatible with DVI 1.0 compliant sources (i.e. "systems" or "hosts") through the use of a similar cable converter….An HDMI Source, upon power-up, reset or detection of a new sink device, shall assume that the sink device operates under DVI 1.0 limitations. An HDMI Source shall determine if the sink device is an HDMI Sink by following the rule(s) described in Section 8.3.5. Upon detection of an HDMI Sink, the HDMI Source shall follow all of the HDMI Source-related requirements specified in this document." HDMI 1.4 at 166. "An HDMI Sink, upon power-up, reset or detection of a new source device, shall assume that the source device is limited to the above behavior. Upon the detection of an indication that the source is HDMI-capable, the HDMI Sink shall follow all of the HDMI Sink-related requirements specified in this document." HDMI 1.4 at 167.

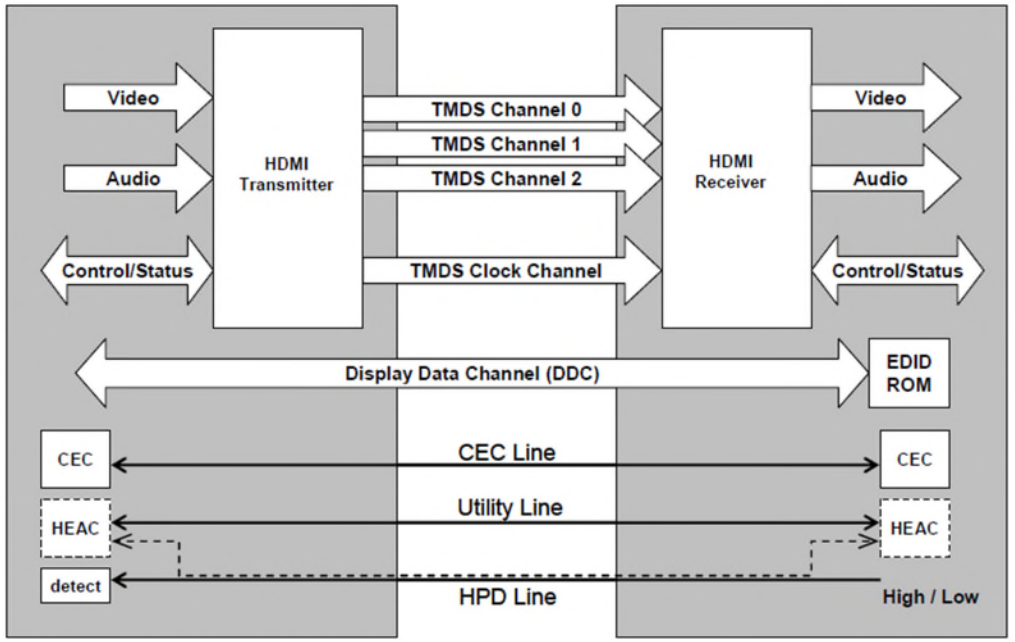


Figure 3-1 HDMI Block Diagram

HDMI 1.4 at Fig. 3-1.

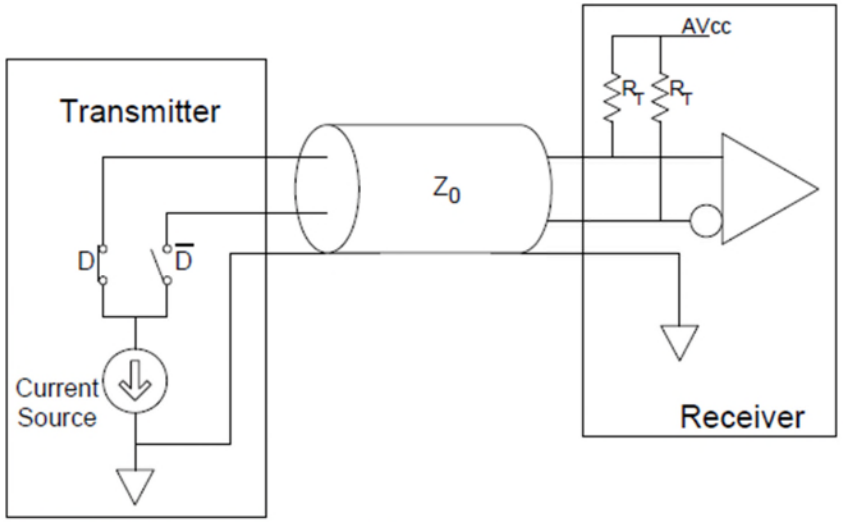


Figure 4-22 Conceptual Schematic for one TMDS differential pair

HDMI 1.4 at Fig. 4-22.

Table 4-35 Maximum Capacitance of DDC line

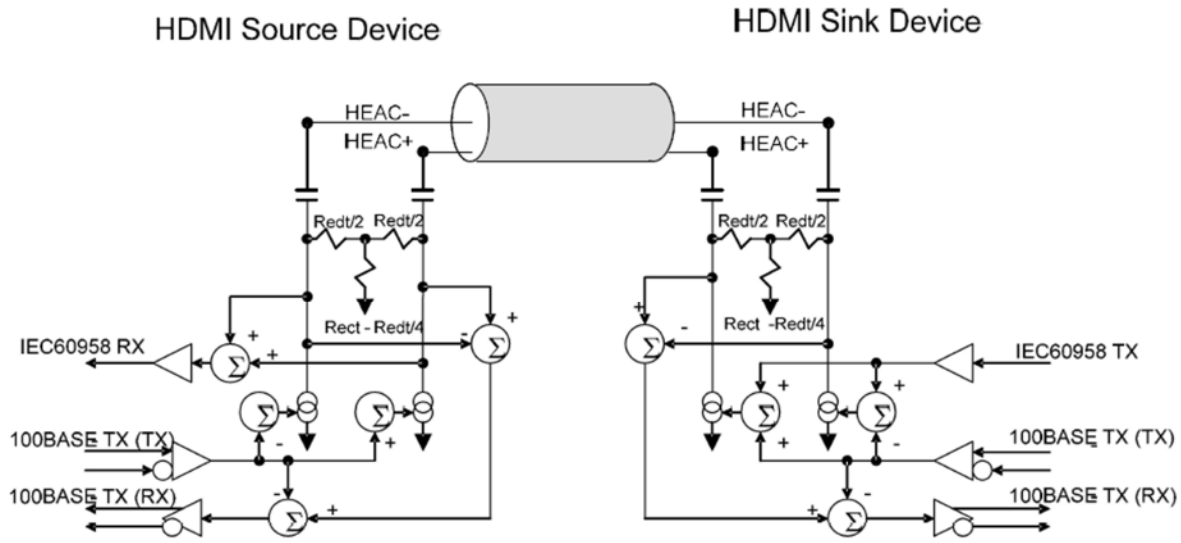
Item	HDMI Source	Cable Assembly	HDMI Sink
SDA – DDC/CEC Ground	50pF	700pF	50pF
SCL – DDC/CEC Ground	50pF	700pF	50pF

HDMI 1.4 at Table 4-35.

Table 4-37 Pull-up Resistance on DDC Lines

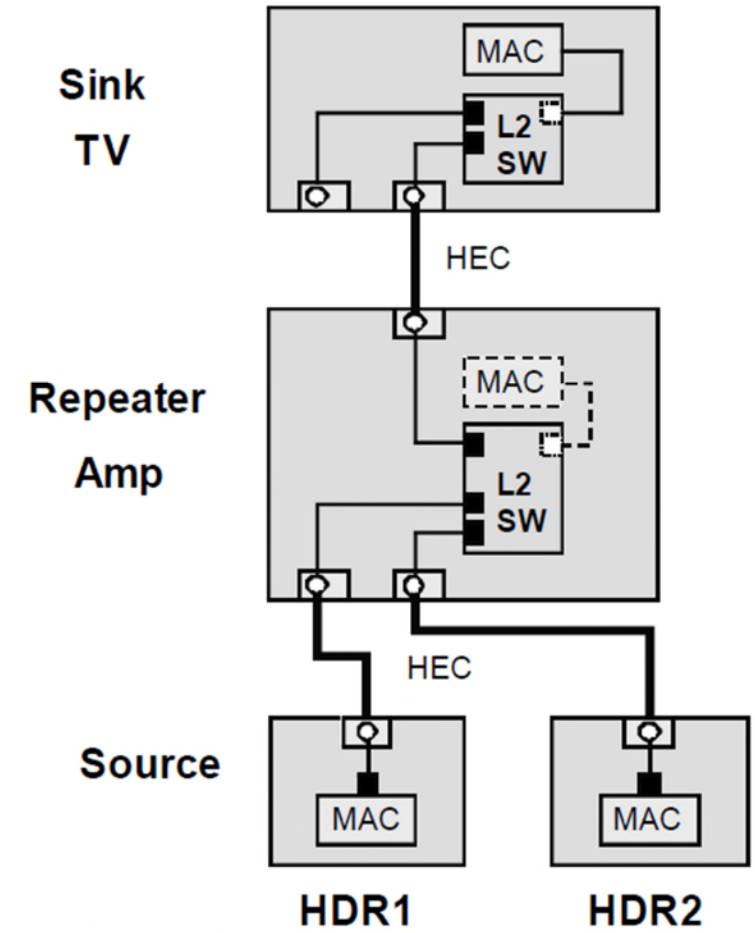
Item	Value
Source Pull-up resistors for SCL and SDA signals	minimum 1.5k ohms, maximum 2.0k ohms
Sink Pull-up resistors for SCL signal	47k ohms, ±10%

HDMI 1.4 at 4-37.



HEAC Figure 2-2 Illustration of Fundamental Structure (differential mode and common mode)

HDMI 1.4 at HEAC Fig. 2-2.



HEAC Figure 5-2 Example of an HEC Network

		HDMI 1.4 at HEAC Fig. 5-2. To the extent that Plaintiff contends that HDMI 1.4 does not explicitly or inherently disclose this element, or render obvious this element, this element is obvious in combination with one or more references and/or with the knowledge of a person of ordinary skill in the art, as set forth in Defendant's Invalidity Contentions.
1(a)	initializing a first audio/video (AV) device to operate in a default AV sink operation mode in response to a power-on-reset or powering up of the first AV device;	HDMI 1.4 discloses and/or renders obvious this limitation. *See, e.g.*: "All HDMI Sources shall be compatible with DVI 1.0 compliant sink devices (i.e. "monitors" or "displays") through the use of a passive cable converter. Likewise, all HDMI Sinks shall be compatible with DVI 1.0 compliant sources (i.e. "systems" or "hosts") through the use of a similar cable converter….An HDMI Source, upon power-up, reset or detection of a new sink device, shall assume that the sink device operates under DVI 1.0 limitations. An HDMI Source shall determine if the sink device is an HDMI Sink by following the rule(s) described in Section 8.3.5. Upon detection of an HDMI Sink, the HDMI Source shall follow all of the HDMI Source-related requirements specified in this document." HDMI 1.4 at 166. "An HDMI Sink, upon power-up, reset or detection of a new source device, shall assume that the source device is limited to the above behavior. Upon the detection of an indication that the source is HDMI-capable, the HDMI Sink shall follow all of the HDMI Sink-related requirements specified in this document." HDMI 1.4 at 167. To the extent that Plaintiff contends that HDMI 1.4 does not explicitly or inherently disclose this element, or render obvious this element, this element is obvious in combination with one or more references and/or with the knowledge of a person of ordinary skill in the art, as set forth in Defendant's Invalidity Contentions.
1(b)	detecting with control circuitry of the first AV device, a coupling between the first AV	HDMI 1.4 discloses and/or renders obvious this limitation. *See, e.g.*: "An HDMI Sink shall not assert high voltage level on its Hot Plug Detect pin when the E-EDID is not available for reading. This requirement shall be fulfilled at all times, even if the Sink is powered-off or in standby. The Hot Plug Detect pin may be asserted only when the +5V Power line from the Source is detected. This will ensure that the Hot Plug Detect pin is not asserted before the Third

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	device and a second AV device;	Make of the connector (see Section 4.1.5). A Source may use a high voltage level Hot Plug Detect signal to initiate the reading of E-EDID data. A Source shall assume that any voltage within the range specified for High voltage level in Table 4-39 indicates that a Sink is connected and that E-EDID is readable. It does not indicate whether or not the Sink is powered or whether or not the HDMI input on the Sink is selected or active. An HDMI Sink shall indicate any change to the contents of the E-EDID by driving a low voltage level pulse on the Hot Plug Detect pin. This pulse shall be at least 100 msec." HDMI 1.4 at 153. "All HDMI Sources shall be compatible with DVI 1.0 compliant sink devices (i.e. "monitors" or "displays") through the use of a passive cable converter. Likewise, all HDMI Sinks shall be compatible with DVI 1.0 compliant sources (i.e. "systems" or "hosts") through the use of a similar cable converter….An HDMI Source, upon power-up, reset or detection of a new sink device, shall assume that the sink device operates under DVI 1.0 limitations. An HDMI Source shall determine if the sink device is an HDMI Sink by following the rule(s) described in Section 8.3.5. Upon detection of an HDMI Sink, the HDMI Source shall follow all of the HDMI Source-related requirements specified in this document." HDMI 1.4 at 166. "An HDMI Sink, upon power-up, reset or detection of a new source device, shall assume that the source device is limited to the above behavior. Upon the detection of an indication that the source is HDMI-capable, the HDMI Sink shall follow all of the HDMI Sink-related requirements specified in this document." HDMI 1.4 at 167.

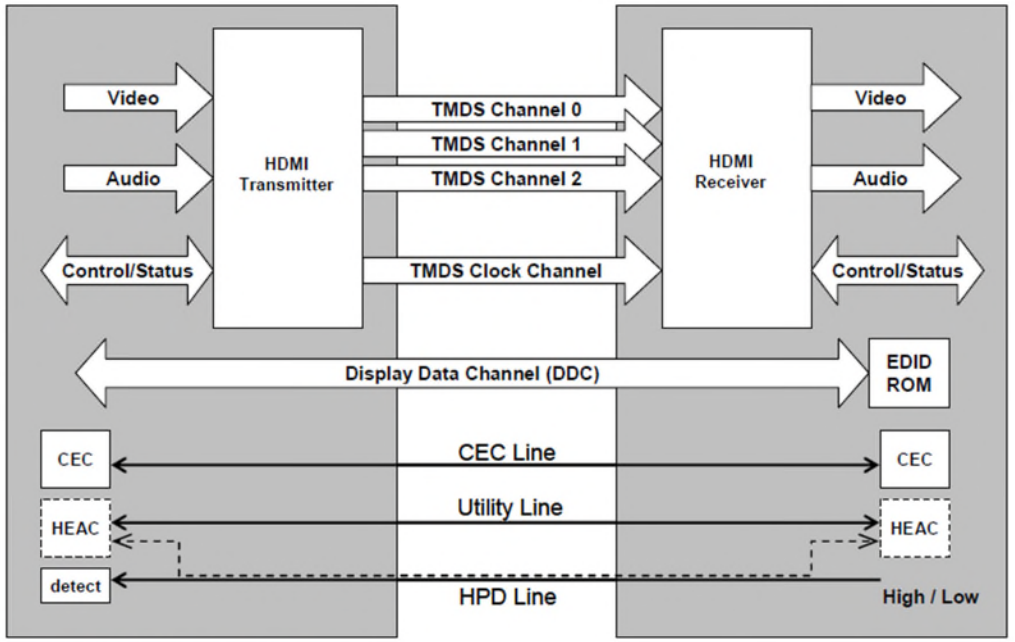


Figure 3-1 HDMI Block Diagram

HDMI 1.4 at Fig. 3-1.

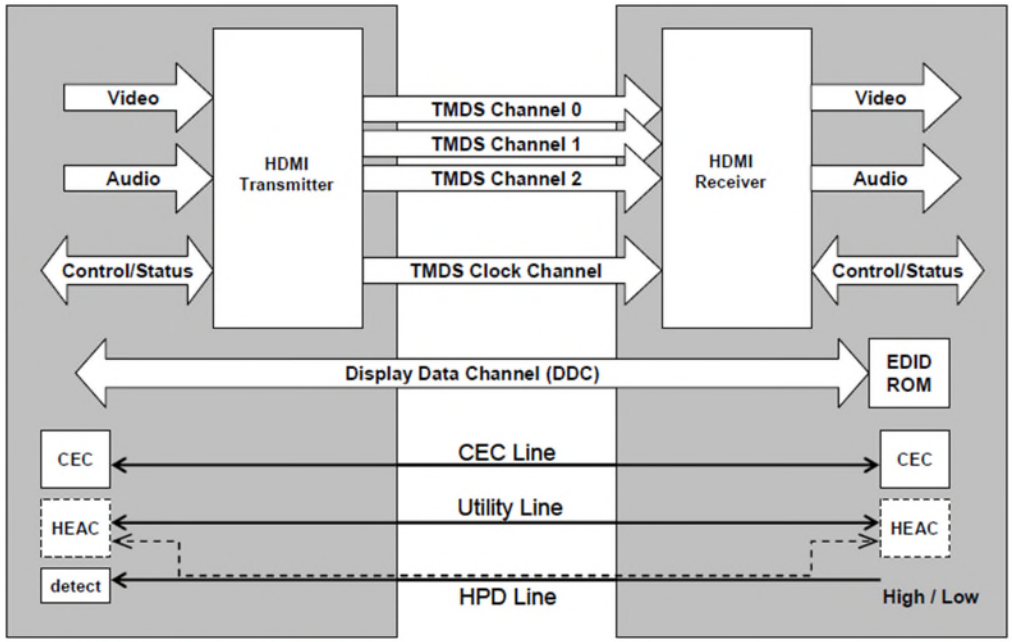
Table 4-38 Required Output Characteristics of Hot Plug Detect Signal

Item	Value
High voltage level (Sink)	Minimum 2.4 Volts, Maximum 5.3 Volts
Low voltage level (Sink)	Minimum 0 Volts, Maximum 0.4 Volts
Output resistance	1000 ohms ±20%

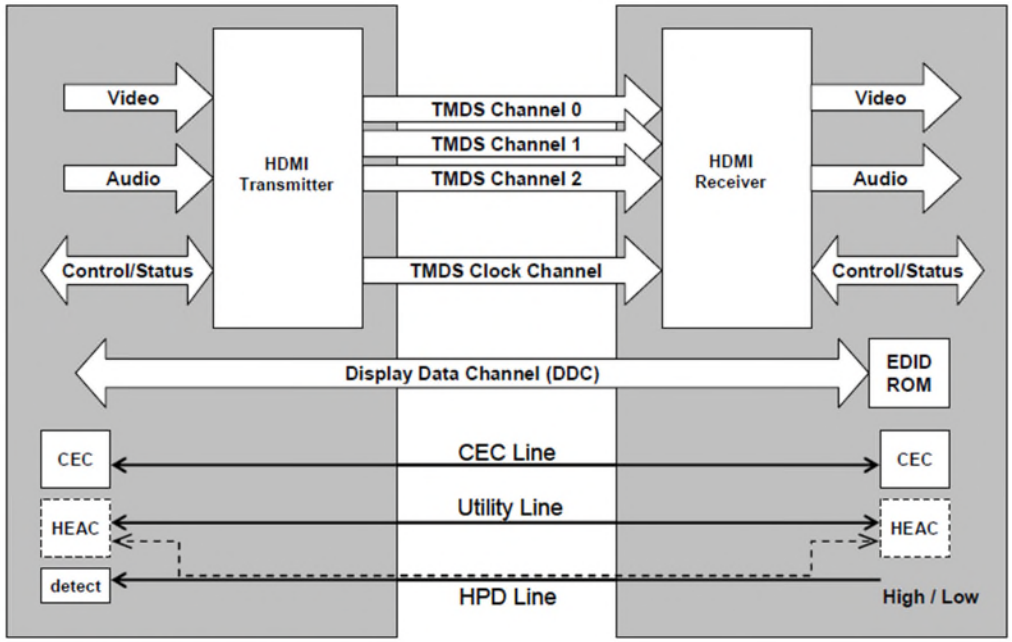
HDMI 1.4 at Table 4-38.

		Table 4-39 Required Detection Levels for Hot Plug Detect Signal | Item | Value | | --- | --- | | High voltage level (Source) | Minimum 2.0 Volts, Maximum 5.3 Volts | | Low voltage level (Source) | Minimum 0 Volts, Maximum 0.8 Volts | HDMI 1.4 at Table 4-39. To the extent that Plaintiff contends that HDMI 1.4 does not explicitly or inherently disclose this element, or render obvious this element, this element is obvious in combination with one or more references and/or with the knowledge of a person of ordinary skill in the art, as set forth in Defendant's Invalidity Contentions.
1(c)	determining whether a first supply voltage is provided at a channel of a connector, the connector coupling the first AV device and the second AV device;	HDMI 1.4 discloses and/or renders obvious this limitation. To the extent that Plaintiff contends that HDMI 1.4 does not explicitly or inherently disclose this element, or render obvious this element, this element is obvious in combination with one or more references and/or with the knowledge of a person of ordinary skill in the art, as set forth in Defendant's Invalidity Contentions.
1(d)	in response to determining that the first supply voltage is provided at the channel of the connector, configuring communication logic of the first AV device	HDMI 1.4 discloses and/or renders obvious this limitation. To the extent that Plaintiff contends that HDMI 1.4 does not explicitly or inherently disclose this element, or render obvious this element, this element is obvious in combination with one or more references and/or with the knowledge of a person of ordinary skill in the art, as set forth in Defendant's Invalidity Contentions.

	to continue operating the first AV device in the AV sink operation mode;	
1(e)	when operating the first AV device in the AV sink operation mode, receiving AV data provided to the first AV device via the connector and receiving power from the first supply voltage provided to the first AV device at the channel of the connector;	HDMI 1.4 discloses and/or renders obvious this limitation. *See, e.g.*: "Audio, video and auxiliary data is transmitted across the three TMDS data channels. A TMDS clock, typically running at the video pixel rate, is transmitted on the TMDS clock channel and is used by the receiver as a frequency reference for data recovery on the three TMDS data channels. At the source, TMDS encoding converts the 8 bits per TMDS data channel into the 10 bit DC-balanced, transition minimized sequence which is then transmitted serially across the pair at a rate of 10 bits per TMDS clock period." HDMI 1.4 at 9. "The HDMI connector provides a pin allowing the Source to supply +5.0 Volts to the cable and Sink. All HDMI Sources shall assert the +5V Power signal whenever the Source is using the DDC or TMDS signals. The voltage driven by the Source shall be within the limits specified for TP1 voltage in Table 4-34. An HDMI Source shall have +5V Power signal over-current protection of no more than 0.5A. All HDMI Sources shall be able to supply a minimum of 55 mA to the +5V Power pin. A Sink shall not draw more than 50 mA of current from the +5V Power pin. When the Sink is powered on, it can draw no more than 10mA of current from the +5V Power signal. A Sink shall assume that any voltage within the range specified for TP2 voltage in Table 4-34 indicates that a Source is connected and applying power to the +5V Power signal. A Cable Assembly shall be able to supply a minimum of 50mA to the +5V Power pin to a Sink, even when connected to a Source supplying no more than 55mA. The return for the +5V Power signal is DDC/CEC Ground signal." HDMI 1.4 at 71.

		 *Figure 3-1 HDMI Block Diagram* HDMI 1.4 at Fig. 3-1. To the extent that Plaintiff contends that HDMI 1.4 does not explicitly or inherently disclose this element, or render obvious this element, this element is obvious in combination with one or more references and/or with the knowledge of a person of ordinary skill in the art, as set forth in Defendant's Invalidity Contentions.
1(f)	in response to determining that the first supply voltage is not provided at the channel of the connector, configuring the communication logic of the first AV	HDMI 1.4 discloses and/or renders obvious this limitation. To the extent that Plaintiff contends that HDMI 1.4 does not explicitly or inherently disclose this element, or render obvious this element, this element is obvious in combination with one or more references and/or with the knowledge of a person of ordinary skill in the art, as set forth in Defendant's Invalidity Contentions.

	device to transition the first AV device from the AV sink operation mode to an AV source operation mode; and	
1(g)	when operating the first AV device in the AV source operation mode, sending AV data via the connector and providing a second supply voltage at the channel of the connector.	HDMI 1.4 discloses and/or renders obvious this limitation. *See, e.g.*: "Audio, video and auxiliary data is transmitted across the three TMDS data channels. A TMDS clock, typically running at the video pixel rate, is transmitted on the TMDS clock channel and is used by the receiver as a frequency reference for data recovery on the three TMDS data channels. At the source, TMDS encoding converts the 8 bits per TMDS data channel into the 10 bit DC-balanced, transition minimized sequence which is then transmitted serially across the pair at a rate of 10 bits per TMDS clock period." HDMI 1.4 at 9. "The HDMI connector provides a pin allowing the Source to supply +5.0 Volts to the cable and Sink. All HDMI Sources shall assert the +5V Power signal whenever the Source is using the DDC or TMDS signals. The voltage driven by the Source shall be within the limits specified for TP1 voltage in Table 4-34. An HDMI Source shall have +5V Power signal over-current protection of no more than 0.5A. All HDMI Sources shall be able to supply a minimum of 55 mA to the +5V Power pin. A Sink shall not draw more than 50 mA of current from the +5V Power pin. When the Sink is powered on, it can draw no more than 10mA of current from the +5V Power signal. A Sink shall assume that any voltage within the range specified for TP2 voltage in Table 4-34 indicates that a Source is connected and applying power to the +5V Power signal. A Cable Assembly shall be able to supply a minimum of 50mA to the +5V Power pin to a Sink, even when connected to a Source supplying no more than 55mA. The return for the +5V Power signal is DDC/CEC Ground signal." HDMI 1.4 at 71.

		 *Figure 3-1 HDMI Block Diagram* HDMI 1.4 at Fig. 3-1. To the extent that Plaintiff contends that HDMI 1.4 does not explicitly or inherently disclose this element, or render obvious this element, this element is obvious in combination with one or more references and/or with the knowledge of a person of ordinary skill in the art, as set forth in Defendant's Invalidity Contentions.
Claim 8		
8[p]	An audio/video (AV) device comprising:	To the extent the preamble is limiting, HDMI 1.4 discloses this element and/or renders it obvious either alone or in combination with other references and/or the knowledge of one of ordinary skill in the art. *See, e.g.*: "This document constitutes the specification for the High-Definition Multimedia Interface (HDMI), version 1.4.

		The High-Definition Multimedia Interface is provided for transmitting digital television audiovisual signals from DVD players, set-top boxes and other audiovisual sources to television sets, projectors and other video displays. HDMI can carry high quality multi-channel audio data and can carry all standard and high-definition consumer electronics video formats. Content protection technology is available. HDMI can also carry control, status and data information in both directions. This specification completely describes the interface such that one could implement a complete transmission and interconnect solution or any portion of the interface. The underlying Transition Minimized Differential Signaling (TMDS)-based protocol and associated electrical signaling is described in detail. The mechanical specification of the connector and the signal placement within the connector are described. A device that is compliant with this specification is interoperable with other compliant devices through the configuration and implementation provided for in this specification. Mechanical, electrical, behavioral and protocol requirements necessary for compliance are described for sources, sinks and cables." HDMI 1.4 at 1. "(HDMI) Source A device with an HDMI output. (HDMI) Sink A device with an HDMI input." HDMI 1.4 at 6. "HDMI system architecture is defined to consist of Sources and Sinks. A given device may have one or more HDMI inputs and one or more HDMI outputs. Each HDMI input on these devices shall follow all of the rules for an HDMI Sink and each HDMI output shall follow all of the rules for an HDMI Source. As shown in Figure 3-1, the HDMI cable and connectors carry four differential pairs that make up the TMDS data and clock channels. These channels are used to carry video, audio and auxiliary data. In addition, HDMI carries a VESA DDC channel. The DDC is used for configuration and status exchange between a single Source and a single Sink. The optional CEC protocol provides high-level control functions between all of the various audiovisual products in a user's environment. The optional HDMI Ethernet and Audio Return Channel (HEAC) provides Ethernet compatible

		data networking between connected devices and an Audio Return Channel in the opposite direction from TMDS. Audio, video and auxiliary data is transmitted across the three TMDS data channels. A TMDS clock, typically running at the video pixel rate, is transmitted on the TMDS clock channel and is used by the receiver as a frequency reference for data recovery on the three TMDS data channels. At the source, TMDS encoding converts the 8 bits per TMDS data channel into the 10 bit DC-balanced, transition minimized sequence which is then transmitted serially across the pair at a rate of 10 bits per TMDS clock period. Video data can have a pixel size of 24, 30, 36 or 48 bits. Video at the default 24-bit color depth is carried at a TMDS clock rate equal to the pixel clock rate. Higher color depths are carried using a correspondingly higher TMDS clock rate. Video formats with TMDS rates below 25MHz (e.g. 13.5MHz for 480i/NTSC) can be transmitted using a pixel-repetition scheme. The video pixels can be encoded in either RGB, YCBCR 4:4:4 or YCBCR 4:2:2 formats." HDMI 1.4 at 9. "The conceptual schematic of one TMDS differential pair is shown in Figure 4-22. TMDS technology uses current drive to develop the low voltage differential signal at the Sink side of the DC-coupled transmission line. The link reference voltage AVcc sets the high voltage level of the differential signal, while the low voltage level is determined by the current source of the HDMI Source and the termination resistance at the Sink. The termination resistance (RT) and the characteristic impedance of the cable (Z0) must be matched." HDMI 1.4 at 53. "The HDMI connector provides a pin allowing the Source to supply +5.0 Volts to the cable and Sink. All HDMI Sources shall assert the +5V Power signal whenever the Source is using the DDC or TMDS signals. The voltage driven by the Source shall be within the limits specified for TP1 voltage in Table 4-34. An HDMI Source shall have +5V Power signal over-current protection of no more than 0.5A. All HDMI Sources shall be able to supply a minimum of 55 mA to the +5V Power pin.

		A Sink shall not draw more than 50 mA of current from the +5V Power pin. When the Sink is powered on, it can draw no more than 10mA of current from the +5V Power signal. A Sink shall assume that any voltage within the range specified for TP2 voltage in Table 4-34 indicates that a Source is connected and applying power to the +5V Power signal. A Cable Assembly shall be able to supply a minimum of 50mA to the +5V Power pin to a Sink, even when connected to a Source supplying no more than 55mA. The return for the +5V Power signal is DDC/CEC Ground signal." HDMI 1.4 at 71. "The Display Data Channel (DDC) I/Os and wires (SDA, SCL, DDC/CEC Ground), shall meet the requirements specified in the I2C-bus Specification, version 2.1, Section 15 for "Standard-Mode" devices. Note that the discussions of high capacitance environments in the I2C-bus Specification, section 17.2, "Switched pull-up circuit for Fast-mode I2C-bus", may be applied to the HDMI environment as well. HDMI devices shall have DDC electrical characteristics complying with the values shown in Table 4-35, Table 4-36 and Table 4-37. The exact method and measurement procedure is written in HDMI Compliance Test Specification. In some cases, buffers or I2C "accelerators" may be inserted in the cable as long as all I2C timing requirements are met." HDMI 1.4 at 72. "An HDMI Sink shall not assert high voltage level on its Hot Plug Detect pin when the E-EDID is not available for reading. This requirement shall be fulfilled at all times, even if the Sink is powered-off or in standby. The Hot Plug Detect pin may be asserted only when the +5V Power line from the Source is detected. This will ensure that the Hot Plug Detect pin is not asserted before the Third Make of the connector (see Section 4.1.5). A Source may use a high voltage level Hot Plug Detect signal to initiate the reading of E-EDID data.

		A Source shall assume that any voltage within the range specified for High voltage level in Table 4-39 indicates that a Sink is connected and that E-EDID is readable. It does not indicate whether or not the Sink is powered or whether or not the HDMI input on the Sink is selected or active. An HDMI Sink shall indicate any change to the contents of the E-EDID by driving a low voltage level pulse on the Hot Plug Detect pin. This pulse shall be at least 100 msec." HDMI 1.4 at 153. "All HDMI Sources shall be compatible with DVI 1.0 compliant sink devices (i.e. "monitors" or "displays") through the use of a passive cable converter. Likewise, all HDMI Sinks shall be compatible with DVI 1.0 compliant sources (i.e. "systems" or "hosts") through the use of a similar cable converter….An HDMI Source, upon power-up, reset or detection of a new sink device, shall assume that the sink device operates under DVI 1.0 limitations. An HDMI Source shall determine if the sink device is an HDMI Sink by following the rule(s) described in Section 8.3.5. Upon detection of an HDMI Sink, the HDMI Source shall follow all of the HDMI Source-related requirements specified in this document." HDMI 1.4 at 166. "An HDMI Sink, upon power-up, reset or detection of a new source device, shall assume that the source device is limited to the above behavior. Upon the detection of an indication that the source is HDMI-capable, the HDMI Sink shall follow all of the HDMI Sink-related requirements specified in this document." HDMI 1.4 at 167.

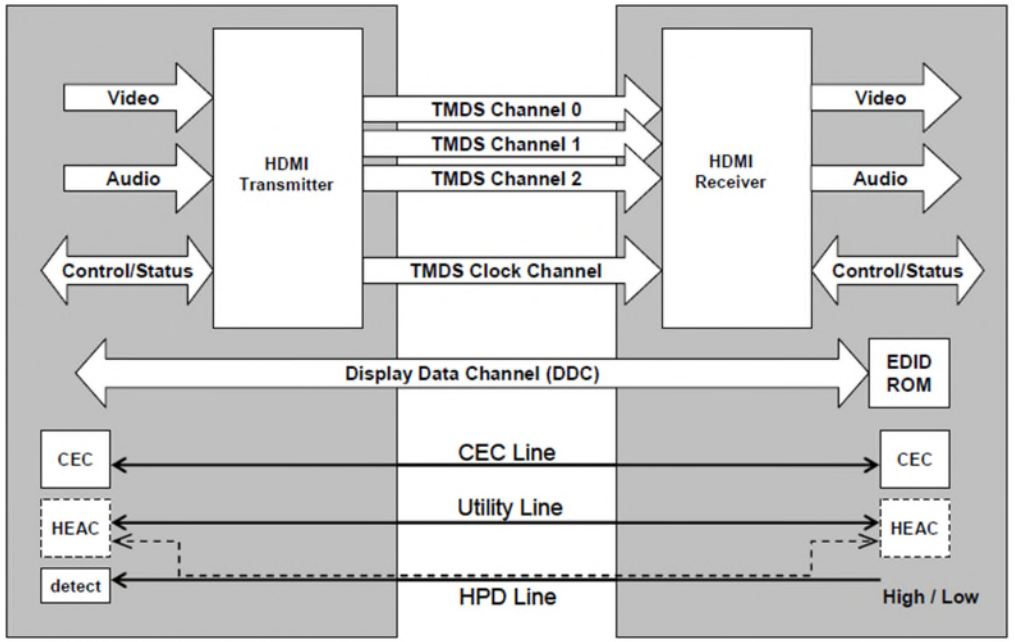


Figure 3-1 HDMI Block Diagram

HDMI 1.4 at Fig. 3-1.

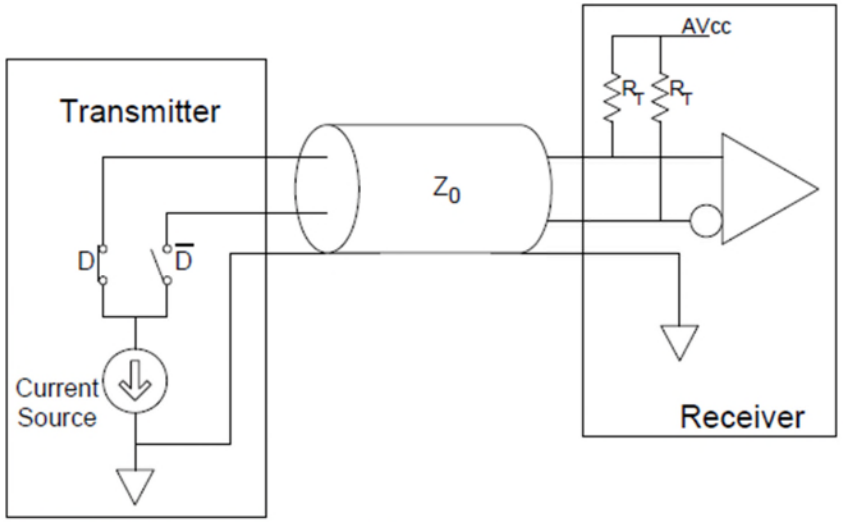


Figure 4-22 Conceptual Schematic for one TMDS differential pair

HDMI 1.4 at Fig. 4-22.

Table 4-35 Maximum Capacitance of DDC line

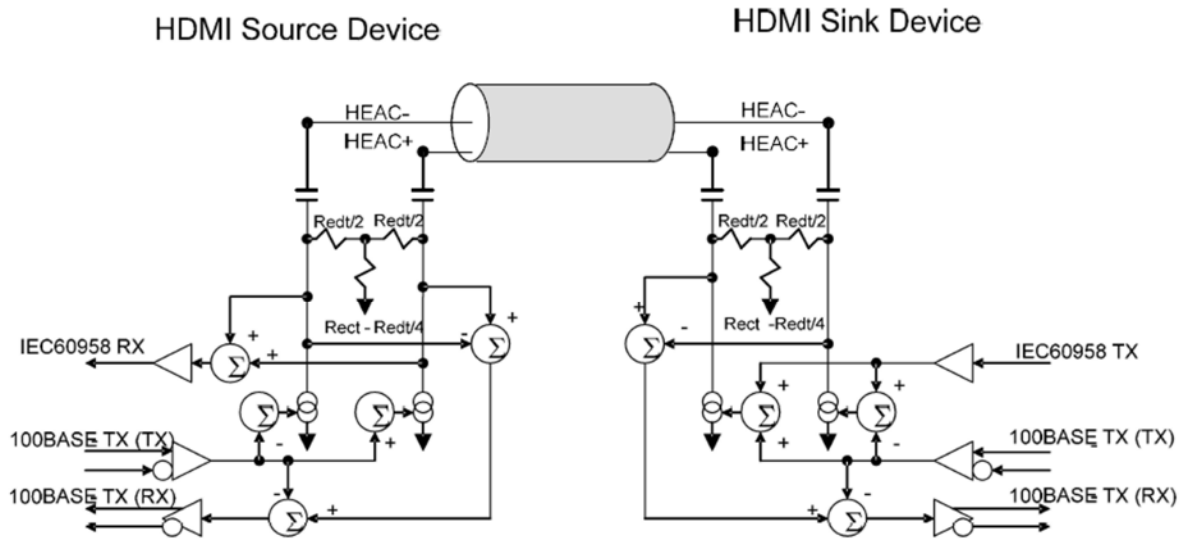
Item	HDMI Source	Cable Assembly	HDMI Sink
SDA – DDC/CEC Ground	50pF	700pF	50pF
SCL – DDC/CEC Ground	50pF	700pF	50pF

HDMI 1.4 at Table 4-35.

Table 4-37 Pull-up Resistance on DDC Lines

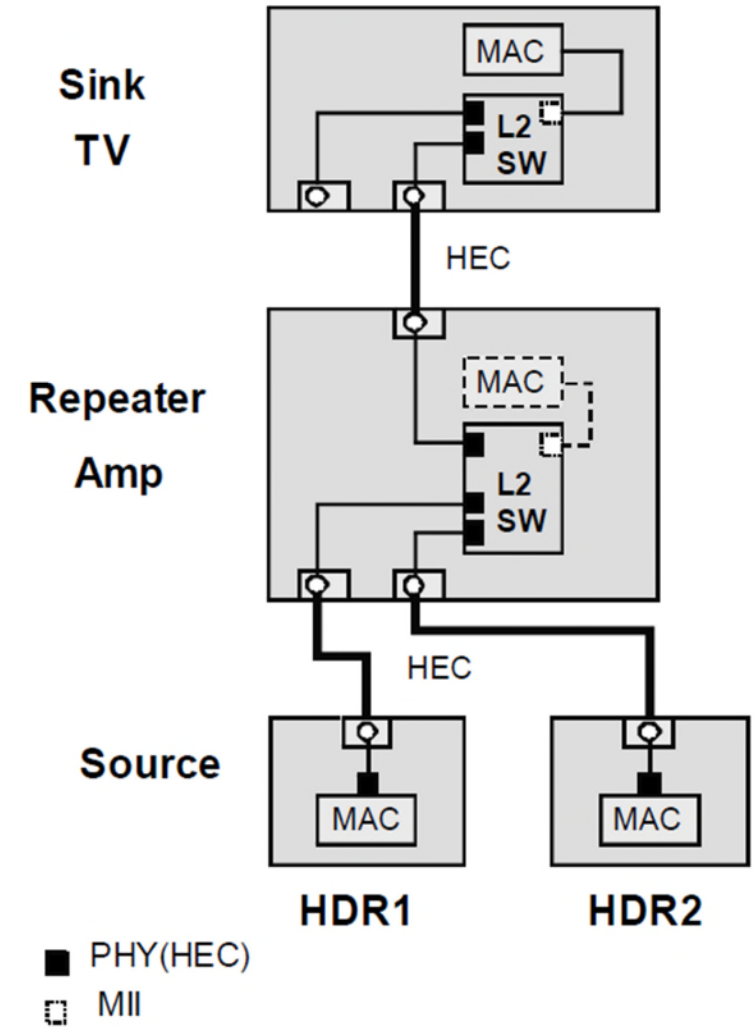
Item	Value
Source Pull-up resistors for SCL and SDA signals	minimum 1.5k ohms, maximum 2.0k ohms
Sink Pull-up resistors for SCL signal	47k ohms, ±10%

HDMI 1.4 at 4-37.



HEAC Figure 2-2 Illustration of Fundamental Structure (differential mode and common mode)

HDMI 1.4 at HEAC Fig. 2-2.



HEAC Figure 5-2 Example of an HEC Network

		HDMI 1.4 at HEAC Fig. 5-2. To the extent that Plaintiff contends that HDMI 1.4 does not explicitly or inherently disclose this element, or render obvious this element, this element is obvious in combination with one or more references and/or with the knowledge of a person of ordinary skill in the art, as set forth in Defendant's Invalidity Contentions.
8(a)	communication logic to couple to a connector, the communication logic including circuitry configured to implement:	HDMI 1.4 discloses and/or renders obvious this limitation. *See* exemplary disclosures and corresponding discussion for claim element 1(c) and 1(d).
8(a)(1)(ii)	an AV sink operation mode for the communication logic to receive AV data provided to the AV device at the connector and to receive power from a first supply voltage provided to the AV device via a channel of the connector,	HDMI 1.4 discloses and/or renders obvious this limitation. *See* exemplary disclosures and corresponding discussion for claim element 1(e).
8(a)(1)(ii)	the AV sink operation mode being a default mode of operation for the AV device, and	HDMI 1.4 discloses and/or renders obvious this limitation. *See* exemplary disclosures and corresponding discussion for claim element 1(a)

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8(a)(2)	an AV source operation mode for the communication logic to send AV data from the AV device via the connector and to provide a second supply voltage at the channel of the connector; and	HDMI 1.4 discloses and/or renders obvious this limitation. *See* exemplary disclosures and corresponding discussion for claim element 1(g).
8(b)(1)	control logic including circuitry to configure the communication logic to initialize the AV device to operate in the default AV sink operation mode in response to a power-on-reset or powering up of the AV device,	HDMI 1.4 discloses and/or renders obvious this limitation. *See* exemplary disclosures and corresponding discussion for claim element 1(a).
8(b)(2)	to continue operating the AV device in the AV sink operation mode in response to determining that the first supply voltage is provided at the channel of the connector, and to configure the	HDMI 1.4 discloses and/or renders obvious this limitation. *See* exemplary disclosures and corresponding discussion for claim element 1(d), 1(f), and 1(c).

	communication logic to transition the AV device from the AV sink operation mode to the AV source operation mode in response to determining that the first supply voltage is not provided at the channel of the connector.	
Claim 11		
11(a)	The device of claim 8, further comprising: detector logic to detect, while the communication logic is in the default operation mode, a coupling of the AV device to another AV device via the connector; and	HDMI 1.4 discloses, expressly or inherently, the device of claim 8 under any proposed construction, and further discloses and/or renders obvious limitation 11(a). *See* exemplary disclosures and corresponding discussion for claim 8 and claim element 1(b).
11(b)	wherein the communication logic is further configured to perform an AV data exchange with the other device in	HDMI 1.4 discloses and/or renders obvious this limitation. *See, e.g.*: "Audio, video and auxiliary data is transmitted across the three TMDS data channels. A TMDS clock, typically running at the video pixel rate, is transmitted on the TMDS clock channel and is used by the receiver as a frequency reference for data recovery on the three TMDS data channels. At the source, TMDS encoding converts the 8 bits per TMDS data channel into the 10 bit

	response to the detection.	DC-balanced, transition minimized sequence which is then transmitted serially across the pair at a rate of 10 bits per TMDS clock period." HDMI 1.4 at 9. "The HDMI connector provides a pin allowing the Source to supply +5.0 Volts to the cable and Sink. All HDMI Sources shall assert the +5V Power signal whenever the Source is using the DDC or TMDS signals. The voltage driven by the Source shall be within the limits specified for TP1 voltage in Table 4-34. An HDMI Source shall have +5V Power signal over-current protection of no more than 0.5A. All HDMI Sources shall be able to supply a minimum of 55 mA to the +5V Power pin. A Sink shall not draw more than 50 mA of current from the +5V Power pin. When the Sink is powered on, it can draw no more than 10mA of current from the +5V Power signal. A Sink shall assume that any voltage within the range specified for TP2 voltage in Table 4-34 indicates that a Source is connected and applying power to the +5V Power signal. A Cable Assembly shall be able to supply a minimum of 50mA to the +5V Power pin to a Sink, even when connected to a Source supplying no more than 55mA. The return for the +5V Power signal is DDC/CEC Ground signal." HDMI 1.4 at 71. "An HDMI Sink shall not assert high voltage level on its Hot Plug Detect pin when the E-EDID is not available for reading. This requirement shall be fulfilled at all times, even if the Sink is powered-off or in standby. The Hot Plug Detect pin may be asserted only when the +5V Power line from the Source is detected. This will ensure that the Hot Plug Detect pin is not asserted before the Third Make of the connector (see Section 4.1.5). A Source may use a high voltage level Hot Plug Detect signal to initiate the reading of E-EDID data. A Source shall assume that any voltage within the range specified for High voltage level in Table 4-39 indicates that a Sink is connected and that E-EDID is readable. It does not indicate whether or not the Sink is powered or whether or not the HDMI input on the Sink is selected or active.

An HDMI Sink shall indicate any change to the contents of the E-EDID by driving a low voltage level pulse on the Hot Plug Detect pin. This pulse shall be at least 100 msec." HDMI 1.4 at 153.

"All HDMI Sources shall be compatible with DVI 1.0 compliant sink devices (i.e. "monitors" or "displays") through the use of a passive cable converter. Likewise, all HDMI Sinks shall be compatible with DVI 1.0 compliant sources (i.e. "systems" or "hosts") through the use of a similar cable converter….An HDMI Source, upon power-up, reset or detection of a new sink device, shall assume that the sink device operates under DVI 1.0 limitations. An HDMI Source shall determine if the sink device is an HDMI Sink by following the rule(s) described in Section 8.3.5. Upon detection of an HDMI Sink, the HDMI Source shall follow all of the HDMI Source-related requirements specified in this document." HDMI 1.4 at 166.

"An HDMI Sink, upon power-up, reset or detection of a new source device, shall assume that the source device is limited to the above behavior. Upon the detection of an indication that the source is HDMI-capable, the HDMI Sink shall follow all of the HDMI Sink-related requirements specified in this document." HDMI 1.4 at 167.

Table 4-38 Required Output Characteristics of Hot Plug Detect Signal

Item	Value
High voltage level (Sink)	Minimum 2.4 Volts, Maximum 5.3 Volts
Low voltage level (Sink)	Minimum 0 Volts, Maximum 0.4 Volts
Output resistance	1000 ohms ±20%

HDMI 1.4 at Table 4-38.

Table 4-39 Required Detection Levels for Hot Plug Detect Signal

Item	Value
High voltage level (Source)	Minimum 2.0 Volts, Maximum 5.3 Volts
Low voltage level (Source)	Minimum 0 Volts, Maximum 0.8 Volts

HDMI 1.4 at Table 4-39.

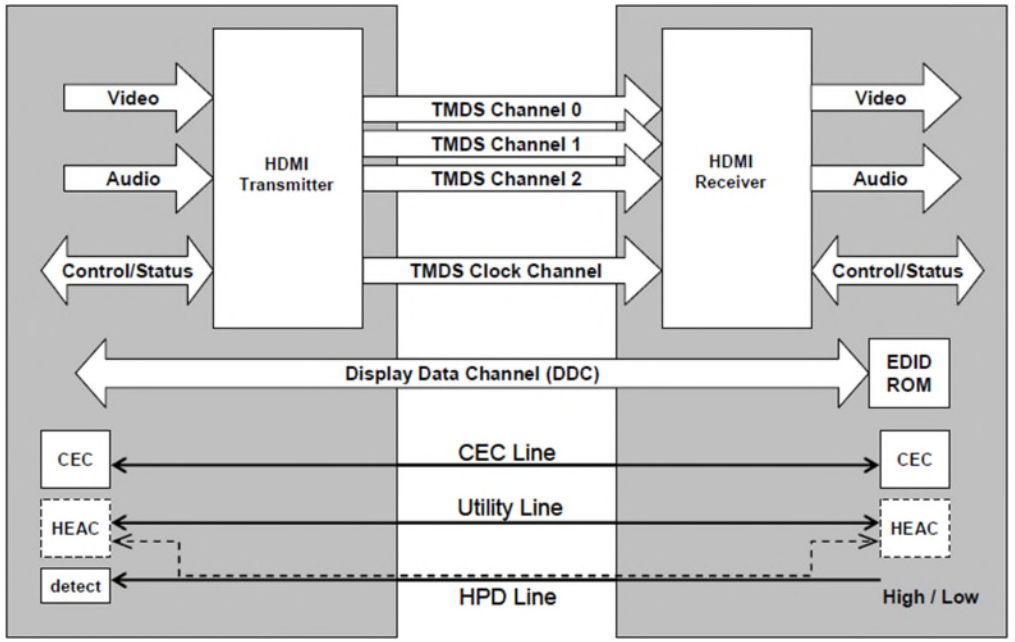


Figure 3-1 HDMI Block Diagram

HDMI 1.4 at Fig. 3-1.

		To the extent that Plaintiff contends that HDMI 1.4 does not explicitly or inherently disclose this element, or render obvious this element, this element is obvious in combination with one or more references and/or with the knowledge of a person of ordinary skill in the art, as set forth in Defendant's Invalidity Contentions.
Claim 14		
14[p]	A system comprising:	To the extent the preamble is limiting, HDMI 1.4 discloses this element and/or renders it obvious either alone or in combination with other references and/or the knowledge of one of ordinary skill in the art. *See, e.g.*: "This document constitutes the specification for the High-Definition Multimedia Interface (HDMI), version 1.4. The High-Definition Multimedia Interface is provided for transmitting digital television audiovisual signals from DVD players, set-top boxes and other audiovisual sources to television sets, projectors and other video displays. HDMI can carry high quality multi-channel audio data and can carry all standard and high-definition consumer electronics video formats. Content protection technology is available. HDMI can also carry control, status and data information in both directions. This specification completely describes the interface such that one could implement a complete transmission and interconnect solution or any portion of the interface. The underlying Transition Minimized Differential Signaling (TMDS)-based protocol and associated electrical signaling is described in detail. The mechanical specification of the connector and the signal placement within the connector are described. A device that is compliant with this specification is interoperable with other compliant devices through the configuration and implementation provided for in this specification. Mechanical, electrical, behavioral and protocol requirements necessary for compliance are described for sources, sinks and cables." HDMI 1.4 at 1. "(HDMI) Source A device with an HDMI output. (HDMI) Sink A device with an HDMI input." HDMI 1.4 at 6.

		"HDMI system architecture is defined to consist of Sources and Sinks. A given device may have one or more HDMI inputs and one or more HDMI outputs. Each HDMI input on these devices shall follow all of the rules for an HDMI Sink and each HDMI output shall follow all of the rules for an HDMI Source. As shown in Figure 3-1, the HDMI cable and connectors carry four differential pairs that make up the TMDS data and clock channels. These channels are used to carry video, audio and auxiliary data. In addition, HDMI carries a VESA DDC channel. The DDC is used for configuration and status exchange between a single Source and a single Sink. The optional CEC protocol provides high-level control functions between all of the various audiovisual products in a user's environment. The optional HDMI Ethernet and Audio Return Channel (HEAC) provides Ethernet compatible data networking between connected devices and an Audio Return Channel in the opposite direction from TMDS. Audio, video and auxiliary data is transmitted across the three TMDS data channels. A TMDS clock, typically running at the video pixel rate, is transmitted on the TMDS clock channel and is used by the receiver as a frequency reference for data recovery on the three TMDS data channels. At the source, TMDS encoding converts the 8 bits per TMDS data channel into the 10 bit DC-balanced, transition minimized sequence which is then transmitted serially across the pair at a rate of 10 bits per TMDS clock period. Video data can have a pixel size of 24, 30, 36 or 48 bits. Video at the default 24-bit color depth is carried at a TMDS clock rate equal to the pixel clock rate. Higher color depths are carried using a correspondingly higher TMDS clock rate. Video formats with TMDS rates below 25MHz (e.g. 13.5MHz for 480i/NTSC) can be transmitted using a pixel-repetition scheme. The video pixels can be encoded in either RGB, YCBCR 4:4:4 or YCBCR 4:2:2 formats." HDMI 1.4 at 9. "The conceptual schematic of one TMDS differential pair is shown in Figure 4-22. TMDS technology uses current drive to develop the low voltage differential signal at the Sink side of the DC-coupled transmission line. The link reference voltage AVcc sets the high voltage level of the differential signal, while the low voltage level is determined by the current source of the HDMI

		Source and the termination resistance at the Sink. The termination resistance (RT) and the characteristic impedance of the cable (Z0) must be matched." HDMI 1.4 at 53. "The HDMI connector provides a pin allowing the Source to supply +5.0 Volts to the cable and Sink. All HDMI Sources shall assert the +5V Power signal whenever the Source is using the DDC or TMDS signals. The voltage driven by the Source shall be within the limits specified for TP1 voltage in Table 4-34. An HDMI Source shall have +5V Power signal over-current protection of no more than 0.5A. All HDMI Sources shall be able to supply a minimum of 55 mA to the +5V Power pin. A Sink shall not draw more than 50 mA of current from the +5V Power pin. When the Sink is powered on, it can draw no more than 10mA of current from the +5V Power signal. A Sink shall assume that any voltage within the range specified for TP2 voltage in Table 4-34 indicates that a Source is connected and applying power to the +5V Power signal. A Cable Assembly shall be able to supply a minimum of 50mA to the +5V Power pin to a Sink, even when connected to a Source supplying no more than 55mA. The return for the +5V Power signal is DDC/CEC Ground signal." HDMI 1.4 at 71. "The Display Data Channel (DDC) I/Os and wires (SDA, SCL, DDC/CEC Ground), shall meet the requirements specified in the I2C-bus Specification, version 2.1, Section 15 for "Standard-Mode" devices. Note that the discussions of high capacitance environments in the I2C-bus Specification, section 17.2, "Switched pull-up circuit for Fast-mode I2C-bus", may be applied to the HDMI environment as well. HDMI devices shall have DDC electrical characteristics complying with the values shown in Table 4-35, Table 4-36 and Table 4-37.

		The exact method and measurement procedure is written in HDMI Compliance Test Specification. In some cases, buffers or I2C "accelerators" may be inserted in the cable as long as all I2C timing requirements are met." HDMI 1.4 at 72. "An HDMI Sink shall not assert high voltage level on its Hot Plug Detect pin when the E-EDID is not available for reading. This requirement shall be fulfilled at all times, even if the Sink is powered-off or in standby. The Hot Plug Detect pin may be asserted only when the +5V Power line from the Source is detected. This will ensure that the Hot Plug Detect pin is not asserted before the Third Make of the connector (see Section 4.1.5). A Source may use a high voltage level Hot Plug Detect signal to initiate the reading of E-EDID data. A Source shall assume that any voltage within the range specified for High voltage level in Table 4-39 indicates that a Sink is connected and that E-EDID is readable. It does not indicate whether or not the Sink is powered or whether or not the HDMI input on the Sink is selected or active. An HDMI Sink shall indicate any change to the contents of the E-EDID by driving a low voltage level pulse on the Hot Plug Detect pin. This pulse shall be at least 100 msec." HDMI 1.4 at 153. "All HDMI Sources shall be compatible with DVI 1.0 compliant sink devices (i.e. "monitors" or "displays") through the use of a passive cable converter. Likewise, all HDMI Sinks shall be compatible with DVI 1.0 compliant sources (i.e. "systems" or "hosts") through the use of a similar cable converter….An HDMI Source, upon power-up, reset or detection of a new sink device, shall assume that the sink device operates under DVI 1.0 limitations. An HDMI Source shall determine if the sink device is an HDMI Sink by following the rule(s) described in Section 8.3.5. Upon detection of an HDMI Sink, the HDMI Source shall follow all of the HDMI Source-related requirements specified in this document." HDMI 1.4 at 166. "An HDMI Sink, upon power-up, reset or detection of a new source device, shall assume that the source device is limited to the above behavior. Upon the detection of an indication that the source is HDMI-capable, the HDMI Sink shall follow all of the HDMI Sink-related requirements specified in this document." HDMI 1.4 at 167.

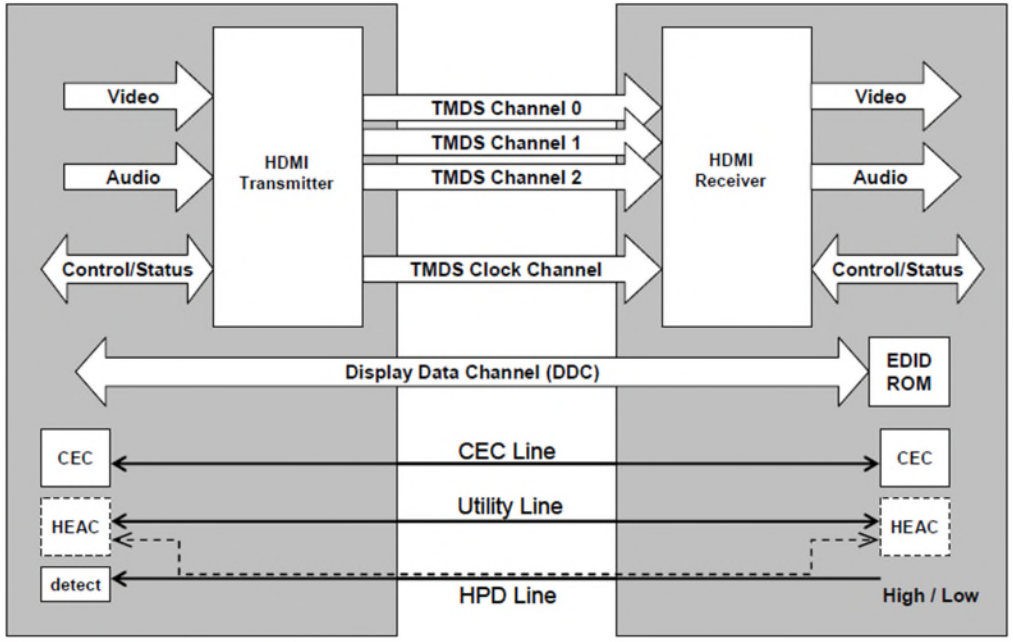


Figure 3-1 HDMI Block Diagram

HDMI 1.4 at Fig. 3-1.

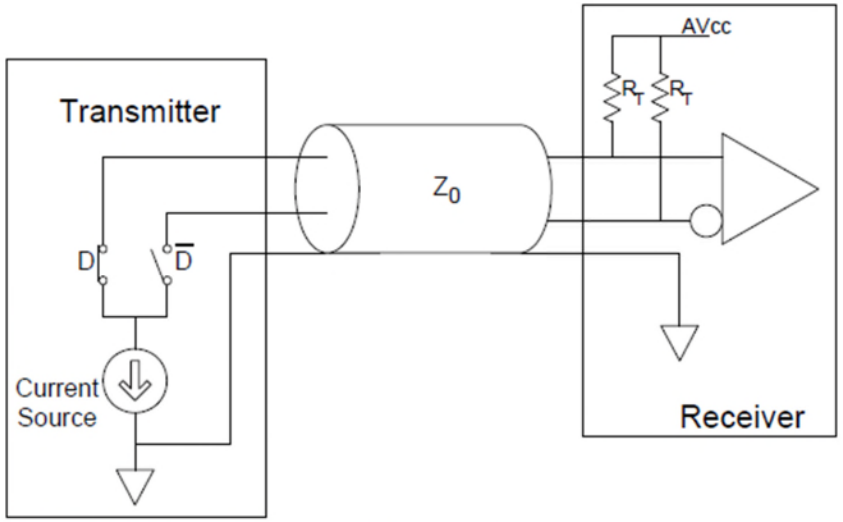


Figure 4-22 Conceptual Schematic for one TMDS differential pair

HDMI 1.4 at Fig. 4-22.

Table 4-35 Maximum Capacitance of DDC line

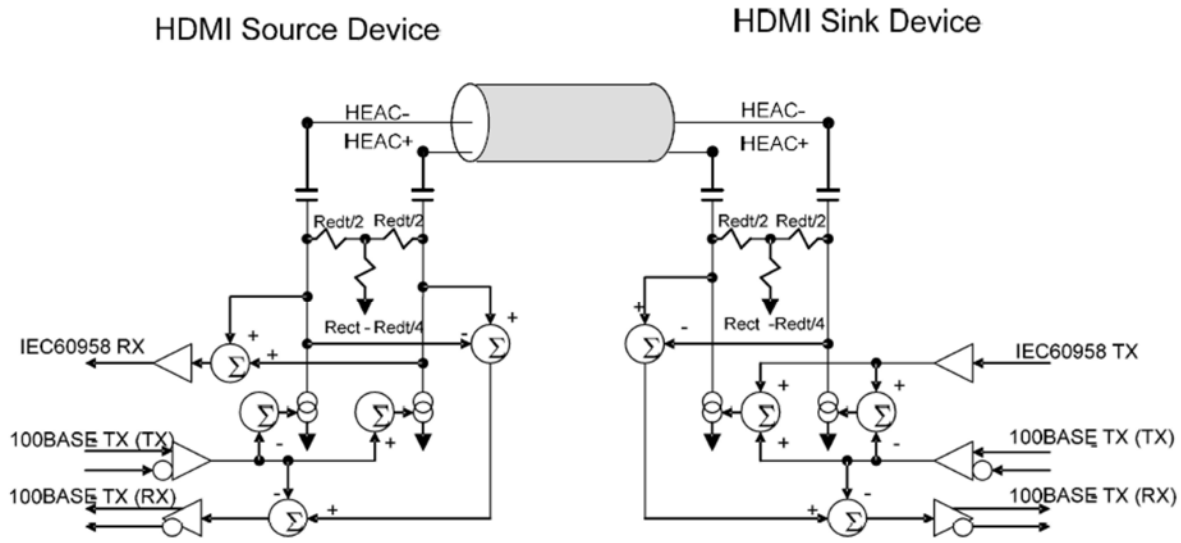
Item	HDMI Source	Cable Assembly	HDMI Sink
SDA – DDC/CEC Ground	50pF	700pF	50pF
SCL – DDC/CEC Ground	50pF	700pF	50pF

HDMI 1.4 at Table 4-35.

Table 4-37 Pull-up Resistance on DDC Lines

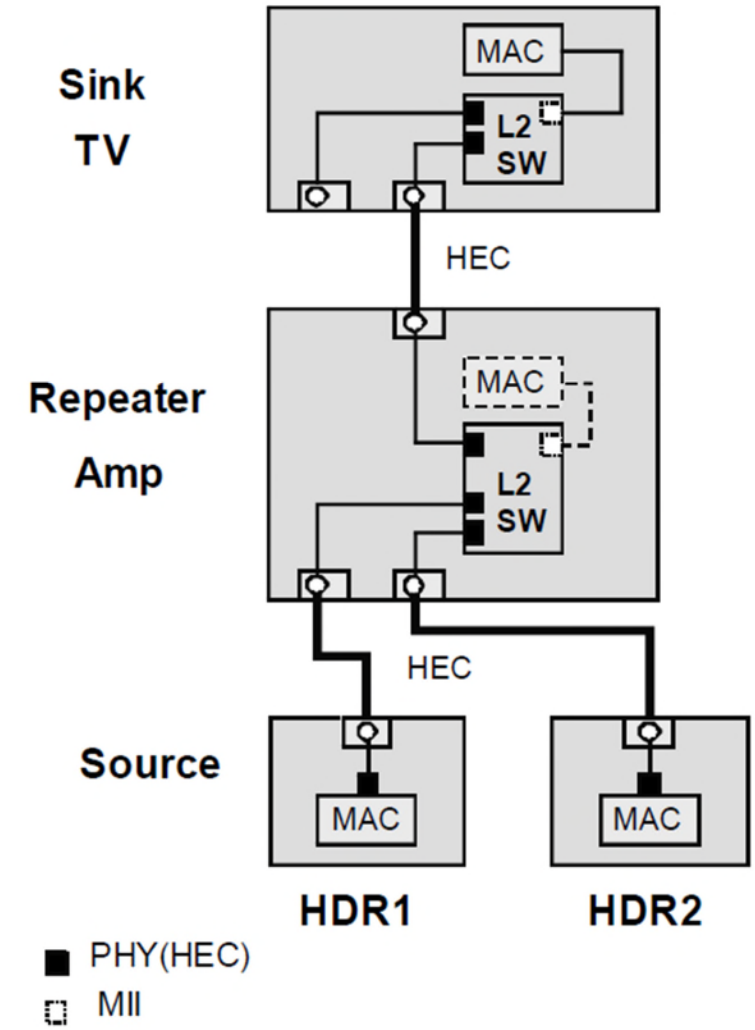
Item	Value
Source Pull-up resistors for SCL and SDA signals	minimum 1.5k ohms, maximum 2.0k ohms
Sink Pull-up resistors for SCL signal	47k ohms, ±10%

HDMI 1.4 at 4-37.



HEAC Figure 2-2 Illustration of Fundamental Structure (differential mode and common mode)

HDMI 1.4 at HEAC Fig. 2-2.



HEAC Figure 5-2 Example of an HEC Network

		HDMI 1.4 at HEAC Fig. 5-2. To the extent that Plaintiff contends that HDMI 1.4 does not explicitly or inherently disclose this element, or render obvious this element, this element is obvious in combination with one or more references and/or with the knowledge of a person of ordinary skill in the art, as set forth in Defendant's Invalidity Contentions.
14(a)	a connector;	HDMI 1.4 discloses and/or renders obvious this limitation. *See* exemplary disclosures and corresponding discussion for claim element 1(c).
14(b)	communication logic of an audio/video (AV) device coupled to the connector, the communication logic including circuitry configured to implement:	HDMI 1.4 discloses and/or renders obvious this limitation. *See* exemplary disclosures and corresponding discussion for claim element 1(c) and 1(d).
14(b)(1)	an AV sink operation mode for the communication logic to receive AV data provided to the system at the connector and to receive power from a first supply voltage provided to the system at a channel of the connector, the AV sink operation mode being a default mode	HDMI 1.4 discloses and/or renders obvious this limitation. *See* exemplary disclosures and corresponding discussion for claim element 1(a) and 1(e).

	of operation for the system, and	
14(b)(2)	an AV source operation mode for the communication logic to send AV data from the system via the connector and to provide a second supply voltage at the channel of the connector; and	HDMI 1.4 discloses and/or renders obvious this limitation. *See* exemplary disclosures and corresponding discussion for claim element 1(g).
14(c)	control logic including circuitry to configure the communication logic to initialize the AV device to operate in the default AV sink operation mode in response to a power-on-reset or powering up of the AV device, to continue operating the AV device in the AV sink operation mode in response to determining that the first supply voltage is provided at the channel of the	HDMI 1.4 discloses and/or renders obvious this limitation. *See* exemplary disclosures and corresponding discussion for claim element 1(a), 1(c), 1(d), and 1(f).

	connector, and to configure the communication logic to transition the AV device from the AV sink operation mode to the AV source operation mode in response to determining that the first supply voltage is not provided at the channel of the connector.	

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Exhibit D-5

Invalidity of the '265 Patent in View of JP 2009-60204 A to Iwamoto (Iwamoto) and U.S. Pat. App. Pub. No. 2009/0046690 A1 to Hsieh (Hsieh)

This chart provides examples of where the prior art reference discloses, either expressly or inherently, the claim elements of asserted U.S. Patent No. 9,232,265 ("the '265 patent"). The citations herein are exemplary and are not exhaustive; Defendant has cited the most relevant portions of the identified prior art. For each citation, Defendant hereby incorporates by reference the entire cited prior art reference, and reserves the right to rely on uncited portions of each identified prior art reference. To provide context or identify the state of the art at the time of the alleged invention, Defendant reserves the right to rely on: (1) uncited portions of the identified prior art; (2) other prior art not identified herein; (3) references that show the state of the art (irrespective of whether such references themselves qualify as prior art); (4) factual testimony from the inventors or authors of the prior art references, or purveyors of prior art devices; and (5) expert testimony.

Where Defendant cites a figure, the citation includes any text associated with the figure. Where Defendant cites passages relating to a figure, the citation includes the associated figure any other text associated with that figure. Where Defendant cites particular prior art as disclosing a claim element, that citation equally applies to all identical or similar claim elements in this chart. Defendant reserves the right to further assert that a claim element is inherent, the element would have been obvious to a person of ordinary skill in the art, or the element is disclosed in other prior art that may be combined with the cited prior art. To establish the inherency of certain features of the prior art to invalidate the asserted claims, Defendant may rely on cited or uncited portions of the prior art, other documents, factual testimony, and expert testimony.

This invalidity chart is based on information presently available to Defendant, and the information herein is provided as a non-limiting example.

Iwamoto was filed on August 30, 2007, and published on March 19, 2009; therefore, Iwamoto is prior art under at least 35 U.S.C. § 102(b).

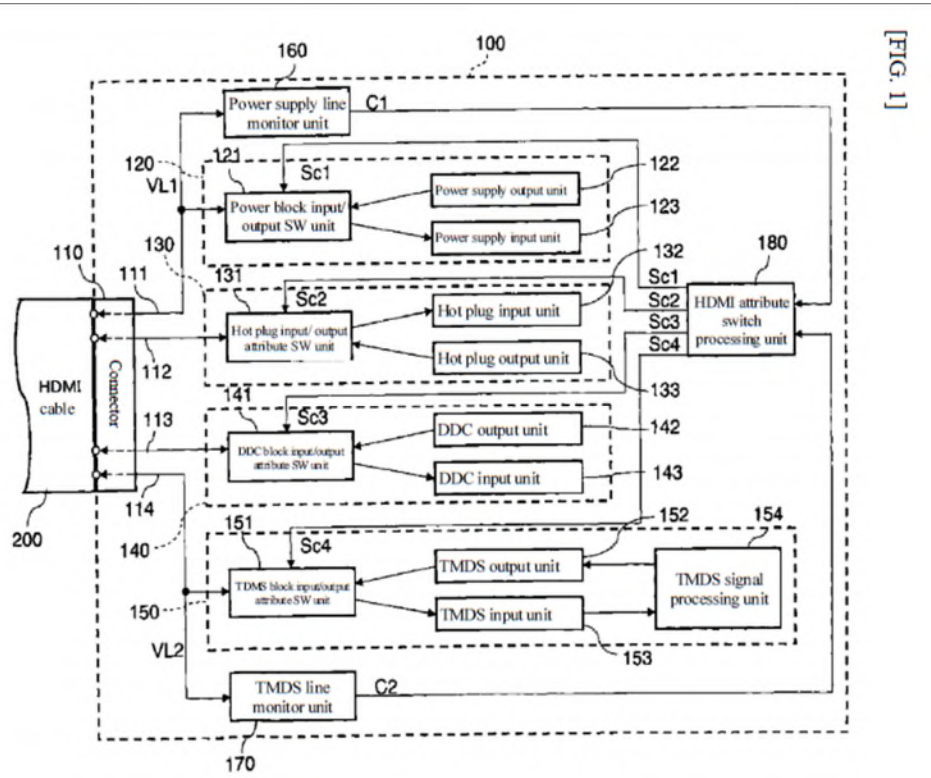
Hsieh was filed on August 16, 2007, and published on February 19, 2009; therefore, Hsieh is prior art under at least 35 U.S.C. § 102(b).

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Exhibit D-5

Claim Limitation		Iwamoto and/or Hsieh
Claim 1		
1[p]	A method comprising:	To the extent the preamble is limiting, Iwamoto discloses this element and/or renders it obvious either alone or in combination with other references and/or the knowledge of one of ordinary skill in the art. *See, e.g.*: "The present invention has been configured in view of such conventional problems, and an object thereof is to provide a source/sink dual-purpose device that can detect a functional attribute of an HDMI device connected to a single connector. To provide a source/sink dual-purpose device capable of automatically switching its own functions according to the detected function attribute of the device." Iwamoto at [0016]. "In order to achieve the foregoing object, the source/sink dual-purpose device of the present invention is a source/sink dual-purpose device conforming to the HDMI standard, provided with first function means for realizing a function as a source device and second function means for realizing a function as a sink device, a source/sink dual-purpose device conforming to the HDMI standard, provided with a second function means for realizing, being provided with a connector for connecting one of the first function means and the second function means to an external device conforming to the HDMI standard, first voltage level monitor means for detecting the voltage level of the power line of the connector, second voltage level monitor means for detecting the voltage level of a TMDS_CLK line of the connector, and function determination means for determining a function of the external device on the basis of the detected two voltage levels." Iwamoto at [0017]. "Before describing embodiments of the present invention in detail, first, main characteristics of the present invention will be described. The source/sink dual-purpose device according to the present invention is configured to conform to the HDMI standard and is provided with two monitor units for detecting a state of signals flowing through an HDMI cable. When an external device is connected via an HDMI cable to a connector shared by both a source and a sink of the source/sink

		dual-purpose device, a function attribute of whether the connected external device conforming to the HDMI standard is the source or the sink is determined on the basis of detection results of two monitor units." Iwamoto at [0026]. "The source/sink dual-purpose device switches its own function to the source or the sink according to the determined function attribute of the external device. At this time, the source/sink dual-purpose device 1 adjusts its own impedance so as not to cause an impedance mismatch with the external device. As a result, the source/sink dual-purpose device can function as the source device or the sink device according to the attribute of the device connected to the shared connector, that is, whether it is the sink device or the source device, without a switching operation of the user." Iwamoto at [0027].

		 Iwamoto at Fig. 1. To the extent that Plaintiff contends that Iwamoto does not explicitly or inherently disclose this element, or render obvious this element, this element is obvious in combination with one or more references and/or with the knowledge of a person of ordinary skill in the art, as set forth in Defendant's Invalidity Contentions.
1(a)	initializing a first audio/video (AV) device to operate in a default AV sink operation mode in	Iwamoto in view of Hsieh discloses and/or renders obvious this limitation. *See, e.g.*: "An AV system conforming to the HDMI standard is normally configured by connecting a source device that supplies AV signals and a sink device that receives the AV signals via a cable conforming to the HDMI standard (hereinafter referred to as an "HDMI cable"). A device for

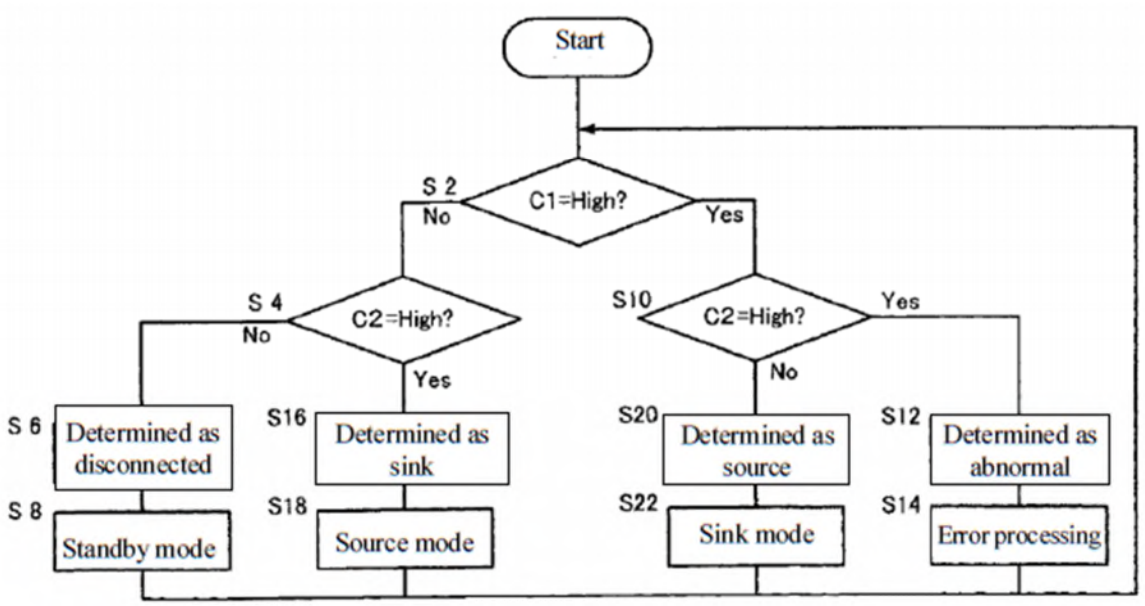
	response to a power-on-reset or powering up of the first AV device;	supplying a video signal or an audio signal such as an STB, a DVD player, or a digital video camera is used as the source device. A device such as a television receiver (hereinafter referred to as "television") or a projector that outputs video or audio is used as the sink device. It is conceivable that these constitute a source/sink dual-purpose device having both a function of the source device and a function of the sink device, such as a television with a built-in DVD player." [0003]. "In order to achieve the foregoing object, the source/sink dual-purpose device of the present invention is a source/sink dual-purpose device conforming to the HDMI standard, provided with first function means for realizing a function as a source device and second function means for realizing a function as a sink device, a source/sink dual-purpose device conforming to the HDMI standard, provided with a second function means for realizing, being provided with a connector for connecting one of the first function means and the second function means to an external device conforming to the HDMI standard, first voltage level monitor means for detecting the voltage level of the power line of the connector, second voltage level monitor means for detecting the voltage level of a TMDS_CLK line of the connector, and function determination means for determining a function of the external device on the basis of the detected two voltage levels." Iwamoto at [0017]. "The HDMI attribute switching processing unit 180 further determines an operation mode M of the source/sink dual-purpose device 100 based on the determination result of the external device function attribute. Note that "operation mode" refers to which function of "standby," "error processing," "source," or "sink" the source/sink dual-purpose device 100 operates." Iwamoto at [0051]. "'Standby' refers to a process for energizing the source/sink dual-purpose device 100 and waiting for connection of the external device. When the function attribute of the external device is determined to be "disconnected", a "standby" mode is determined." Iwamoto at [0052].

		" Specifically, when determined to be in "standby" mode, the control signals Sc1 to Sc4 control the power supply block input/output SW unit 121, the DDC block input/output attribute SW unit 131, the hot plug input/output attribute SW unit 131, and the TDMS block input/output attribute SW unit 151, respectively, so that the power supply block 120, the hot plug block 130, the DCC block 140, and the TMDS block 150 become high impedance." Iwamoto at [0057]. "In step S6, both the power source line level C1 and the TDMS line level C2 are Low, and thus, as described with reference to FIG. 2, it is determined that the external device 20 is "disconnected." Then, in step S8, the control signals Sc1 to Sc4 are output, and the source/sink dual-purpose device 100 is set to the standby mode. Then, control returns to step S2 described above." Iwamoto at [0065]. "State 1: The external device 20 is not connected to the source/sink dual-purpose device 100, or no current is applied despite being connected…. In state 1 (non-connection), the source/sink dual-purpose device 100 is set to a standby mode by processing in step S2 (No), step S4 (No), step S6, and step S8. Then, the source/sink dual-purpose device 100 waits for the external device 20 to be connected while repeating the process of the flowchart of FIG. 3." Iwamoto at [0072]-[0073].

[FIG. 2]

C1	C2	J	M	Sc	
Power line level	TMDS CLK line level	External device function determination	Operation mode determination	Control Signal	
Low	Low	Disconnected	Standby	Sc1	High Impedance
				Sc2	High Impedance
				Sc3	High Impedance
				Sc4	High Impedance
High	High	Error	Shunt	Sc1	High Impedance
				Sc2	High Impedance
				Sc3	High Impedance
				Sc4	High Impedance
Low	High	Sink	Source	Sc1	Power supply output unit
				Sc2	Hot plug input unit
				Sc3	DCC output unit
				Sc4	TMDS output unit
High	Low	Source	Sink	Sc1	Power supply input unit
				Sc2	Hot plug output unit
				Sc3	DDC input unit
				Sc4	TMDS input unit

Iwamoto at Fig. 2.

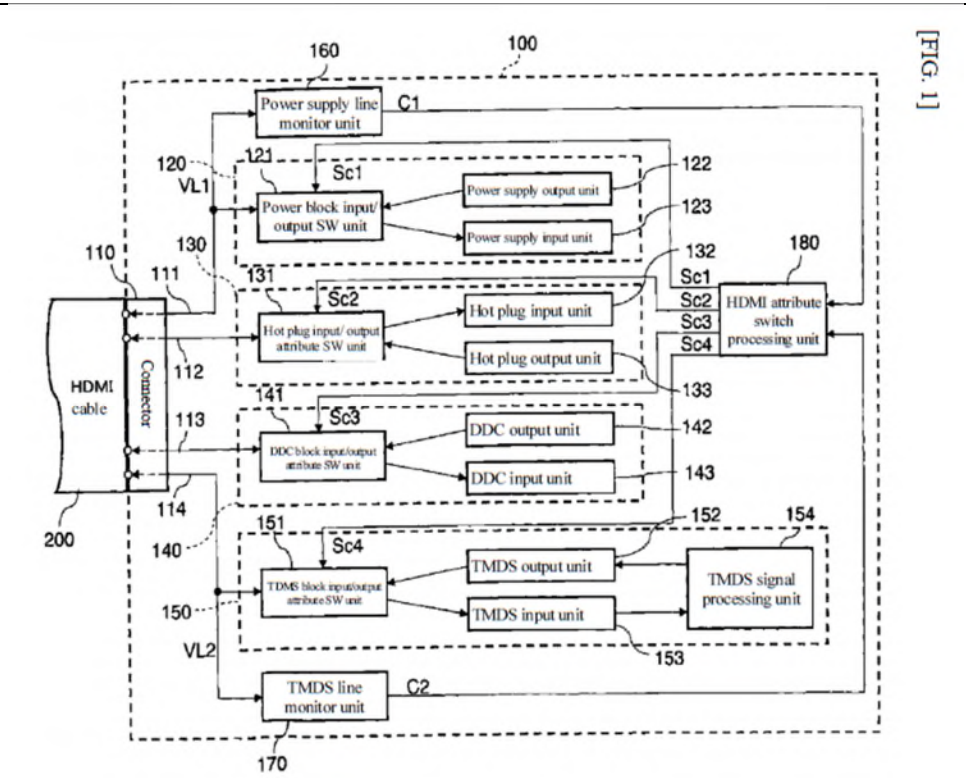
		 [FIG. 3] Iwamoto at Fig. 3. To the extent that Plaintiff contends that Iwamoto does not explicitly or inherently disclose this element, or render obvious this element, this element is obvious in combination with one or more references and/or with the knowledge of a person of ordinary skill in the art, as set forth in Defendant's Invalidity Contentions. For example, Hsieh teaches a similar bi-directional HDMI system with devices that can switch between source and sink modes. Hsieh teaches that the device can default to source or sink mode when the devices are connected: "[T]he first HSDI transceiver is pre-set to be either the source device or the sink device prior receiving or generating a first control Switching command." Hsieh at [0006].

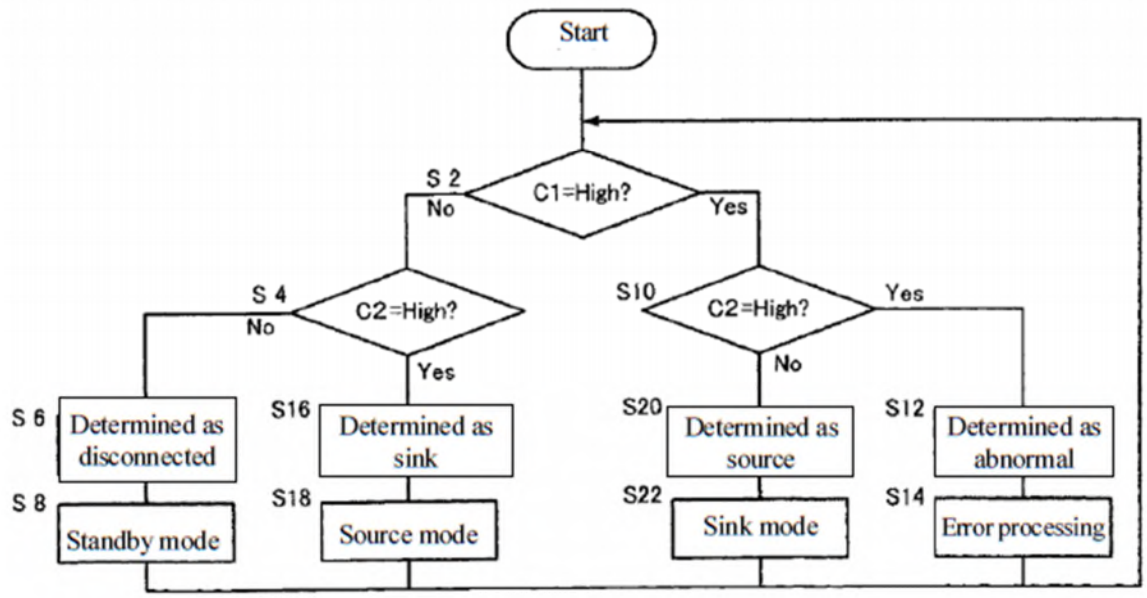
		"Being bi-directional, the HSDI transceiver 100 can be chosen to act as a source device or a sink device depending on the user's requirement. Please note, prior generating a switching command, each HSDI transceiver 100 is pre-set as the source device or the sink device by having some default setting. For example, the settings of the power pin 114 and the hot plug detect pin 118, and the connection relationships of the first multiplexer 106 and the second multiplexer 112 of the HSDI transceiver 100 are pre-set to let the HSDI transceiver 100 conform to the standard for HSDI device, such as HDMI specification. When the HSDI transceiver 100 is a DVD recorder, the default setting of the first multiplexer 106 is to couple to the transmitter 102, the default setting of the second multiplexer 112 is to couple to the controller 108, the controller 108 controls the third multiplexer 116 to set the power pin 114 to supply power, and controls the fourth multiplexer 120 to set the hot plug detect pin 118 to become an input node." Hsieh at [0016]. "The HSDI structure, such as High-Definition Mul-timedia Interface (HDMI), is a digital audio/video interface capable of transmitting uncompressed data streams. HSDI is compatible with Digital Rights Management technology and provides an interface between any compatible digital audio/ video source device (e.g. a set-top box, a DVD recorder, or a PC) and a compatible digital audio/video sink device, such as a digital television. Therefore, it has become a modern replacement for conventional analog standards such as SCART or RCA connectors." Hsieh at [0002]. "Initially, each device is set to be the default working function, Source or sink function." Hsieh at [0020]. It would have been obvious to a POSA that, once connected, the device of Iwamoto could default to either sink or source depending on the nature of the device and whether it is more likely to be connected as a sink or source. For example, Hsieh teaches that the default setting for a DVD recorder is source mode.
1(b)	detecting with control circuitry of the first AV device, a coupling between the first AV device and a second AV device;	Iwamoto discloses and/or renders obvious this limitation. *See, e.g.*: "FIG. 1 illustrates a configuration of the source/sink dual-purpose device according to an embodiment of the present invention. The source/sink dual-purpose device 100 includes a connector 110, a power supply block 120, a hot plug block 130, a DCC block 140, a TDMS block 150, a voltage line monitor 160, a TDMS line monitor 170, and an HDMI attribute switching processing unit 180." Iwamoto at [0028].

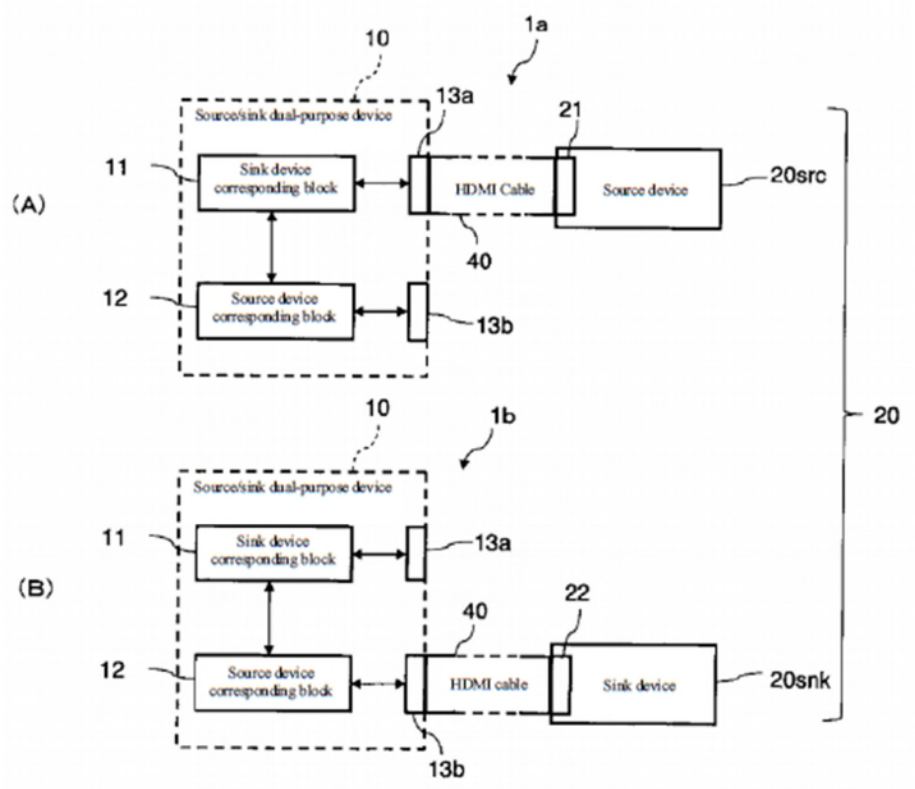
		"The connector 110 conforms to the HDMI standard and is exclusively connected to either one of another source device 20src (FIG. 5) and a sink device 20snk (FIG. 5) conforming to the HDMI standard via the HDMI cable 200. That is, the connector 110 is shared by the source device 20src and the sink device 20snk. The HDMI cable 200 includes a plurality of lines for transmitting signals and data. Typical lines include a CEC line, a hot plug line, a DDC line, and an HDMC line." Iwamoto at [0029]. "The source/sink dual-purpose device 100 can function as a source device conforming to the HDMI standard, via a power source output unit 122, a hot plug input unit 132, a DDC output unit 142, a TDMS output unit 152, and a TMDS signal processing unit 154. Conversely, the source/sink dual-purpose device 100 can function as a sink device conforming to the HDMI standard, via a power input unit 123, a hot plug output unit 133, a DDC input unit 143, a TDMS input unit 153, and a TMDS signal processing unit 154." [Iwamoto at [0033]. "Next, two monitoring units 160 and 170 that monitor the connection state between the HDMI cable 200 and the external device 20 will be described. The power supply line monitor unit 160 repeatedly detects a voltage level VL1 of a power supply line 111 among a plurality of lines connected to the connector 110 at predetermined time intervals to generate a binary level signal (hereinafter, 'power supply line level') C1." Iwamoto at [0042]. "When the external device 40 to which the connector 110 is connected via the HDMI cable 200 is the source device 20src, the voltage level VL1 of the power source line 111 indicates a High level (5 V). In contrast, when the connected external device 40 is the sink device 20snk, is not connected, or is not operating due to not being energized despite being connected, the voltage level VL1 indicates a low level (0 V). The power supply line level C1 has a value of either High or Low corresponding to the level of the voltage level VL1." Iwamoto at [0043]. "The TDMS line monitor unit 170 repeatedly detects a voltage level VL2 of the TDMS line (specifically, a TDMS_CLK line) 114 included in the connector 110 at predetermined time intervals to generate a binary level signal (hereinafter, "TDMS line level") C2. When the connector 110 is connected to a sink device via the HDMI cable 200, the voltage level VL2 of the TDMS line 114 indicates a High level (3.3 V)." Iwamoto at [0044].

		"In contrast, when the connector 110 is connected to a source device via the HDMI cable 200 or is not connected to another device, the voltage level VL2 indicates a low level (0 V). The TDMS line level C2 has a value of either High or Low corresponding to the level of the voltage level VL2." Iwamoto at [0045]. "Operation of the HDMI attribute switching processing unit 180 will be described below with reference to FIG. 2. The HDMI attribute switching processing unit 180 determines a function J of the external device connected to the connector 110 also used for connection between the source device and the sink device based on the power source line level C1 and the TDMS line level C2. Note that "function," in relation to the external device, refers to one of four states of 'disconnected,' 'abnormal,' 'sink,' and 'source.'" Iwamoto at [0046]. "State 1: The external device 20 is not connected to the source/sink dual-purpose device 100, or no current is applied despite being connected…. In state 1 (non-connection), the source/sink dual-purpose device 100 is set to a standby mode by processing in step S2 (No), step S4 (No), step S6, and step S8. Then, the source/sink dual-purpose device 100 waits for the external device 20 to be connected while repeating the process of the flowchart of FIG. 3." Iwamoto at [0072]-[0073].

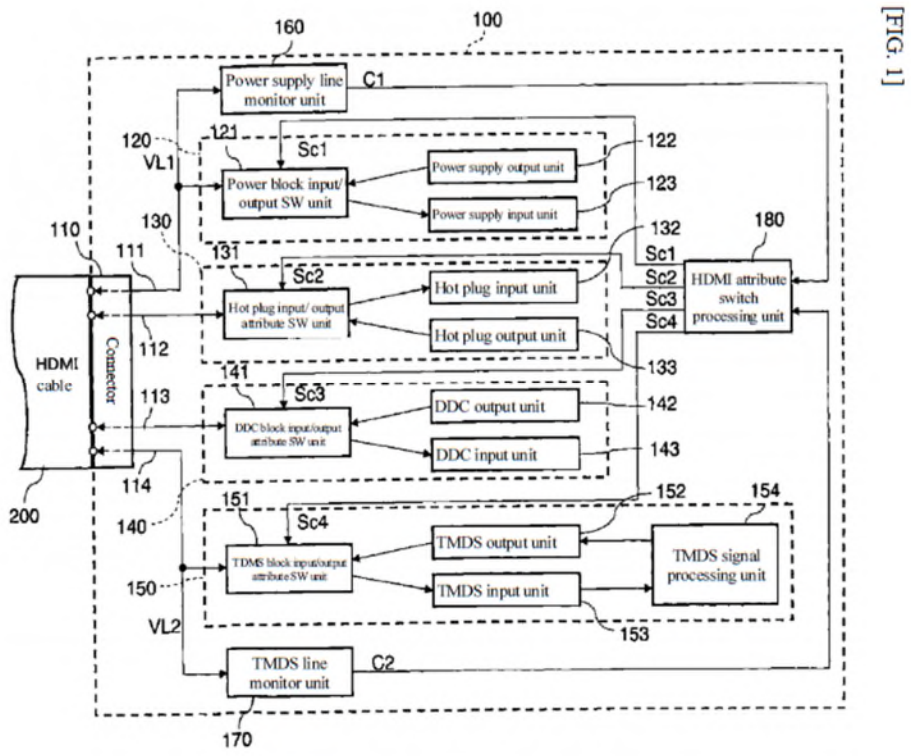
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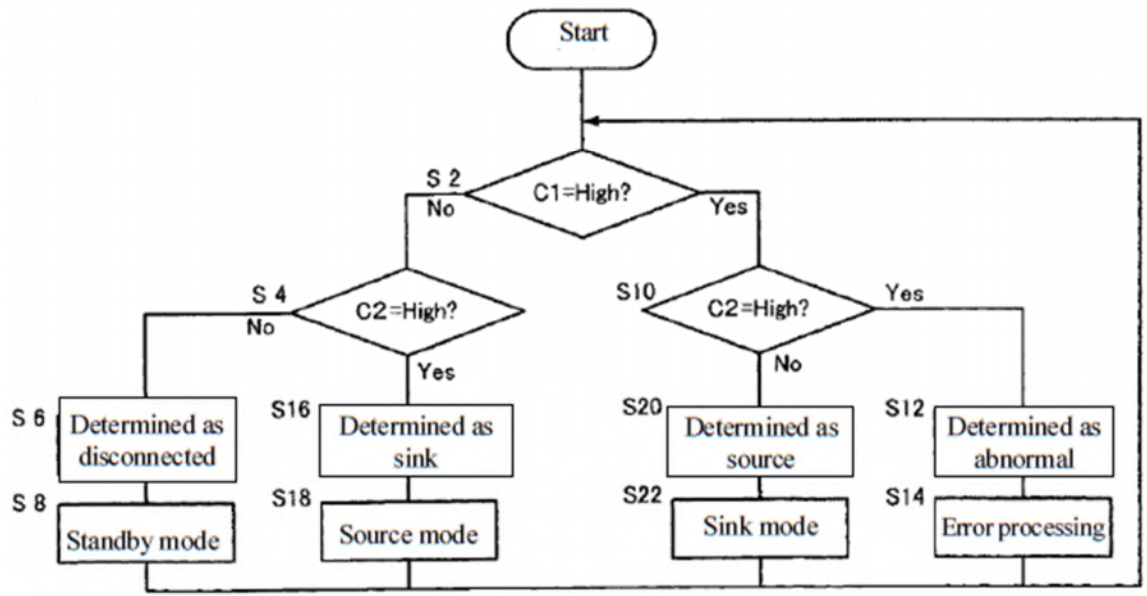
		 Iwamoto at Fig. 1.

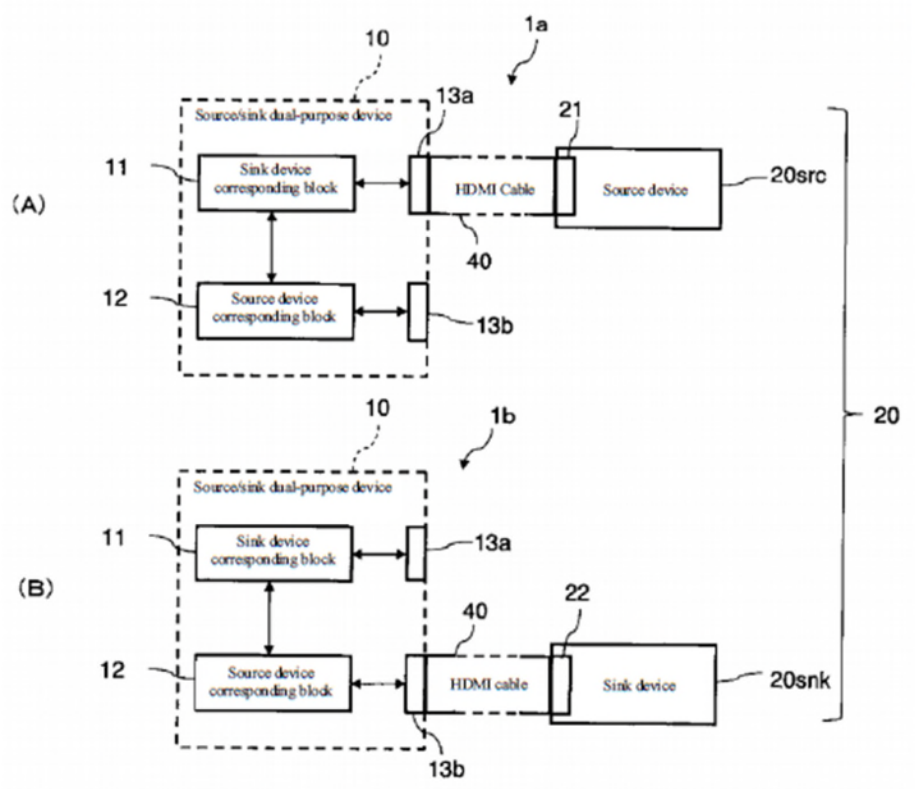
		 Iwamoto at Fig. 3.

		 Iwamoto at Fig. 5. To the extent that Plaintiff contends that Iwamoto does not explicitly or inherently disclose this element, or render obvious this element, this element is obvious in combination with one or more references and/or with the knowledge of a person of ordinary skill in the art, as set forth in Defendant's Invalidity Contentions.
1(c)	determining whether a first supply voltage is provided at a channel of a connector, the	Iwamoto discloses and/or renders obvious this limitation. *See, e.g.*: "Next, two monitoring units 160 and 170 that monitor the connection state between the HDMI cable 200 and the external device 20 will be described. The power supply line monitor unit 160 repeatedly

	connector coupling the first AV device and the second AV device;	detects a voltage level VL1 of a power supply line 111 among a plurality of lines connected to the connector 110 at predetermined time intervals to generate a binary level signal (hereinafter, 'power supply line level') C1." Iwamoto at [0042]. "When the external device 40 to which the connector 110 is connected via the HDMI cable 200 is the source device 20src, the voltage level VL1 of the power source line 111 indicates a High level (5 V). In contrast, when the connected external device 40 is the sink device 20snk, is not connected, or is not operating due to not being energized despite being connected, the voltage level VL1 indicates a low level (0 V). The power supply line level C1 has a value of either High or Low corresponding to the level of the voltage level VL1." Iwamoto at [0043]. "The TDMS line monitor unit 170 repeatedly detects a voltage level VL2 of the TDMS line (specifically, a TDMS_CLK line) 114 included in the connector 110 at predetermined time intervals to generate a binary level signal (hereinafter, "TDMS line level") C2. When the connector 110 is connected to a sink device via the HDMI cable 200, the voltage level VL2 of the TDMS line 114 indicates a High level (3.3 V)." Iwamoto at [0044]. "In contrast, when the connector 110 is connected to a source device via the HDMI cable 200 or is not connected to another device, the voltage level VL2 indicates a low level (0 V). The TDMS line level C2 has a value of either High or Low corresponding to the level of the voltage level VL2." Iwamoto at [0045]. "Operation of the HDMI attribute switching processing unit 180 will be described below with reference to FIG. 2. The HDMI attribute switching processing unit 180 determines a function J of the external device connected to the connector 110 also used for connection between the source device and the sink device based on the power source line level C1 and the TDMS line level C2. Note that "function," in relation to the external device, refers to one of four states of 'disconnected,' 'abnormal,' 'sink,' and 'source.'" Iwamoto at [0046]. "State 1: The external device 20 is not connected to the source/sink dual-purpose device 100, or no current is applied despite being connected…. In state 1 (non-connection), the source/sink dual-purpose device 100 is set to a standby mode by processing in step S2 (No), step S4 (No), step S6,

		and step S8. Then, the source/sink dual-purpose device 100 waits for the external device 20 to be connected while repeating the process of the flowchart of FIG. 3." Iwamoto at [0072]-[0073].  [FIG. 1] Iwamoto at Fig. 1.

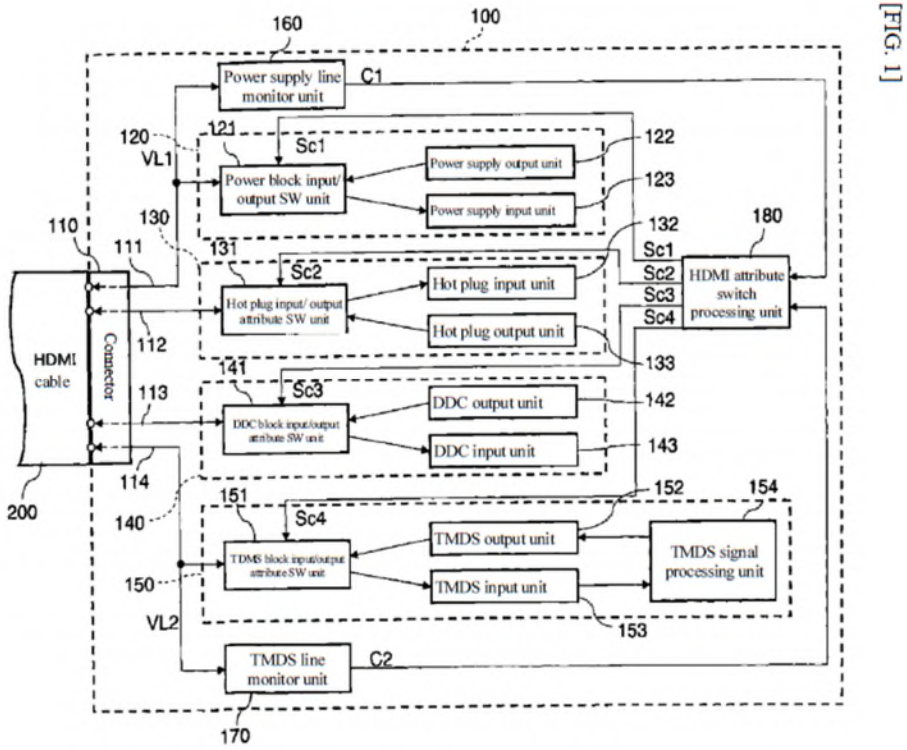
		 [FIG. 3] Iwamoto at Fig. 3.

		 Iwamoto at Fig. 5. To the extent that Plaintiff contends that Iwamoto does not explicitly or inherently disclose this element, or render obvious this element, this element is obvious in combination with one or more references and/or with the knowledge of a person of ordinary skill in the art, as set forth in Defendant's Invalidity Contentions.
1(d)	in response to determining that the first supply voltage is	Iwamoto discloses and/or renders obvious this limitation. *See, e.g.*: "Next, two monitoring units 160 and 170 that monitor the connection state between the HDMI cable

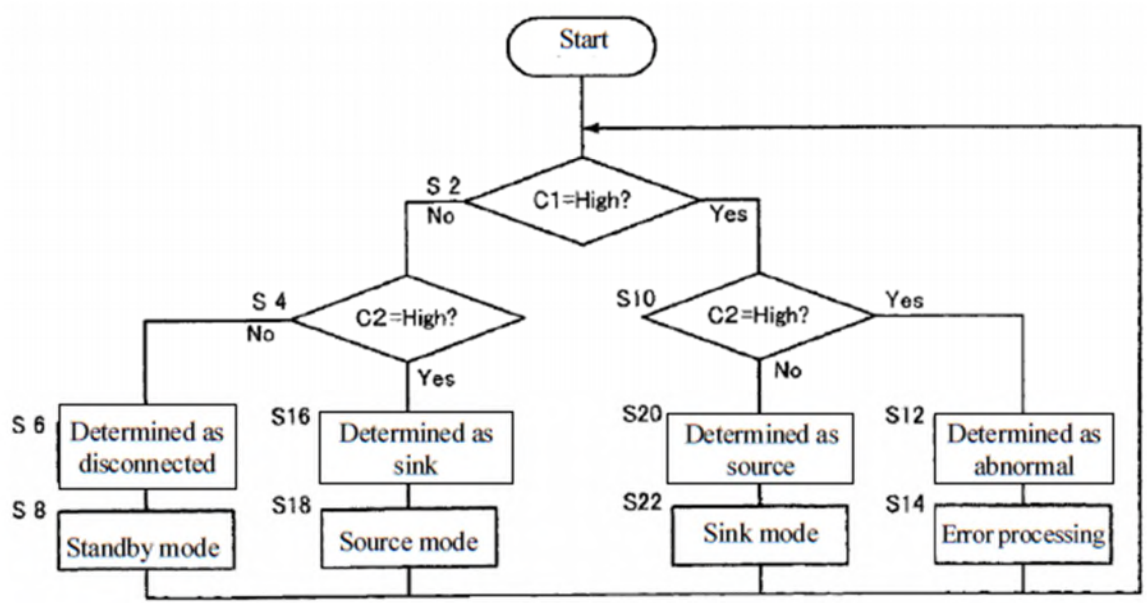
	provided at the channel of the connector, configuring communication logic of the first AV device to continue operating the first AV device in the AV sink operation mode;	200 and the external device 20 will be described. The power supply line monitor unit 160 repeatedly detects a voltage level VL1 of a power supply line 111 among a plurality of lines connected to the connector 110 at predetermined time intervals to generate a binary level signal (hereinafter, 'power supply line level') C1." Iwamoto at [0042]. "When the external device 40 to which the connector 110 is connected via the HDMI cable 200 is the source device 20src, the voltage level VL1 of the power source line 111 indicates a High level (5 V). In contrast, when the connected external device 40 is the sink device 20snk, is not connected, or is not operating due to not being energized despite being connected, the voltage level VL1 indicates a low level (0 V). The power supply line level C1 has a value of either High or Low corresponding to the level of the voltage level VL1." Iwamoto at [0043]. "The TDMS line monitor unit 170 repeatedly detects a voltage level VL2 of the TDMS line (specifically, a TDMS_CLK line) 114 included in the connector 110 at predetermined time intervals to generate a binary level signal (hereinafter, "TDMS line level") C2. When the connector 110 is connected to a sink device via the HDMI cable 200, the voltage level VL2 of the TDMS line 114 indicates a High level (3.3 V)." Iwamoto at [0044]. "In contrast, when the connector 110 is connected to a source device via the HDMI cable 200 or is not connected to another device, the voltage level VL2 indicates a low level (0 V). The TDMS line level C2 has a value of either High or Low corresponding to the level of the voltage level VL2." Iwamoto at [0045]. "Operation of the HDMI attribute switching processing unit 180 will be described below with reference to FIG. 2. The HDMI attribute switching processing unit 180 determines a function J of the external device connected to the connector 110 also used for connection between the source device and the sink device based on the power source line level C1 and the TDMS line level C2. Note that "function," in relation to the external device, refers to one of four states of 'disconnected,' 'abnormal,' 'sink,' and 'source.'" Iwamoto at [0046]. "State 1: The external device 20 is not connected to the source/sink dual-purpose device 100, or no current is applied despite being connected. State 2: The connected external device 20 is abnormal.

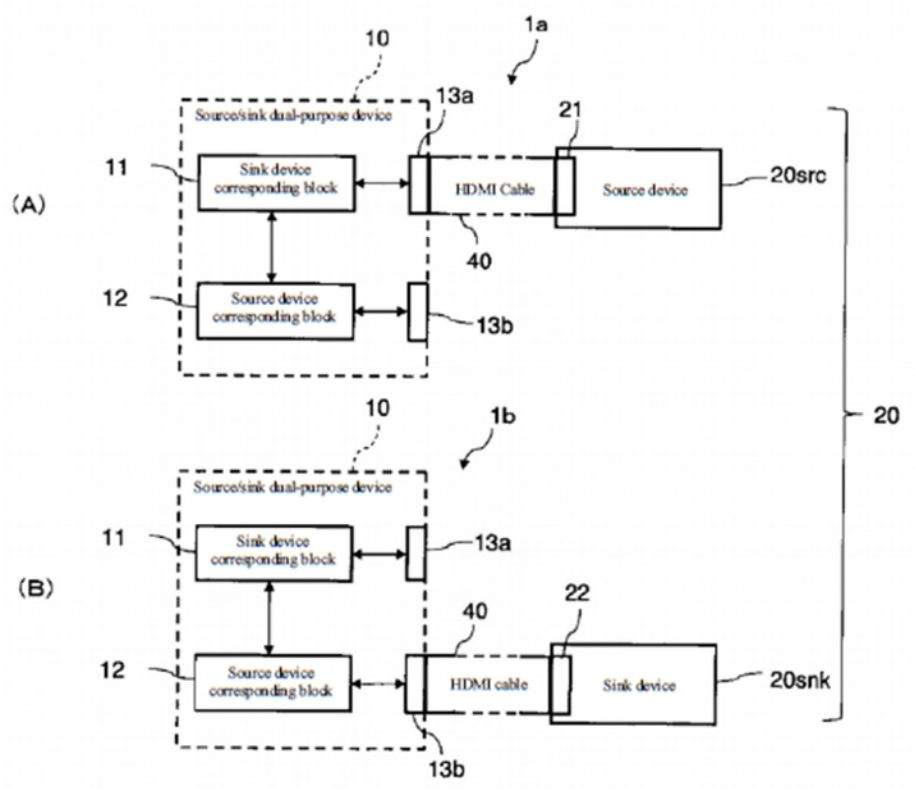
		State 3: A normal sink device 20snk is connected. State 4: A normal source device 20src is connected. State 5: The connection with the external device 20 of state 2 is cut off. State 6: The connection with the external device 20 of state 3 is cut off. State 7: The connection with the external device 20 of state 4 is cut off. State 8: The connection with the external equipment of state 5, state 6, and state 7 is restored." Iwamoto at [0072]. "In state 1 (non-connection), the source/sink dual-purpose device 100 is set to a standby mode by processing in step S2 (No), step S4 (No), step S6, and step S8. Then, the source/sink dual-purpose device 100 waits for the external device 20 to be connected while repeating the process of the flowchart of FIG. 3." Iwamoto at [0073]. "In state 2 (abnormal), the source/sink dual-purpose device 100 is set to the error processing mode by processing in step S2 (Yes), step S10 (Yes), step S12, and step S14. Then, the source/sink dual-purpose device 100 waits for the abnormality of the external device 20 to recover while repeating the process of the flowchart of FIG. 3." Iwamoto at [0074]. "In state 3 (sink), the source/sink dual-purpose device 100 is set to the source mode by the processing in step S2 (No), step S4 (Yes), step S16, and step S18. Then, the source/sink dual-purpose device 100 monitors the state of the external device 20 while repeating the process of the flowchart of FIG. 3. Then, when the state of the external device 20 changes, the operating mode of the device itself is reset in accordance with the change." Iwamoto at [0075]. "In state 4 (source), the source/sink dual-purpose device 100 is set to the sink mode by the processing in step S2 (Yes), step S10 (No), step S20, and step S22. Then, the source/sink dual-purpose device 100 monitors the state of the external device 20 while repeating the process of the flowchart of FIG. 3. Then, when the state of the external device 20 changes, the operating mode of the device itself is reset in accordance with the change." Iwamoto at [0076]. "In state 5, state 6, and state 7, the processing of state 1 described above is executed when the connection with the external device 20 in each state is cut off." Iwamoto at [0077].

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		"In state 8, when the connection with the external device 20 in each state is restored, processing of any of state 2, state 3, or state 4 is executed according to the state of the external device 20." Iwamoto at [0078]. "As described above, it is possible to use a single HDMI connector and automatically switch the attributes of the source device and the sink device without user operation. As a result, it is possible to reduce the cost and size of the device by reducing the number of required components, and to reduce the time and effort of the user to change the HDMI attribute (sink device/source device)." Iwamoto at [0079].  Iwamoto at Fig. 1.

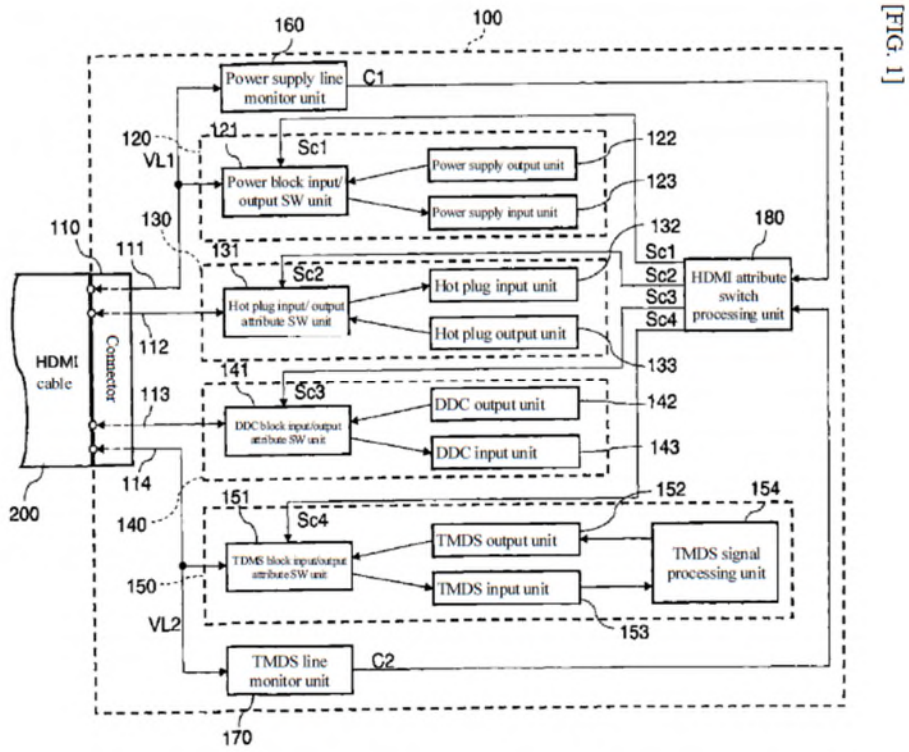
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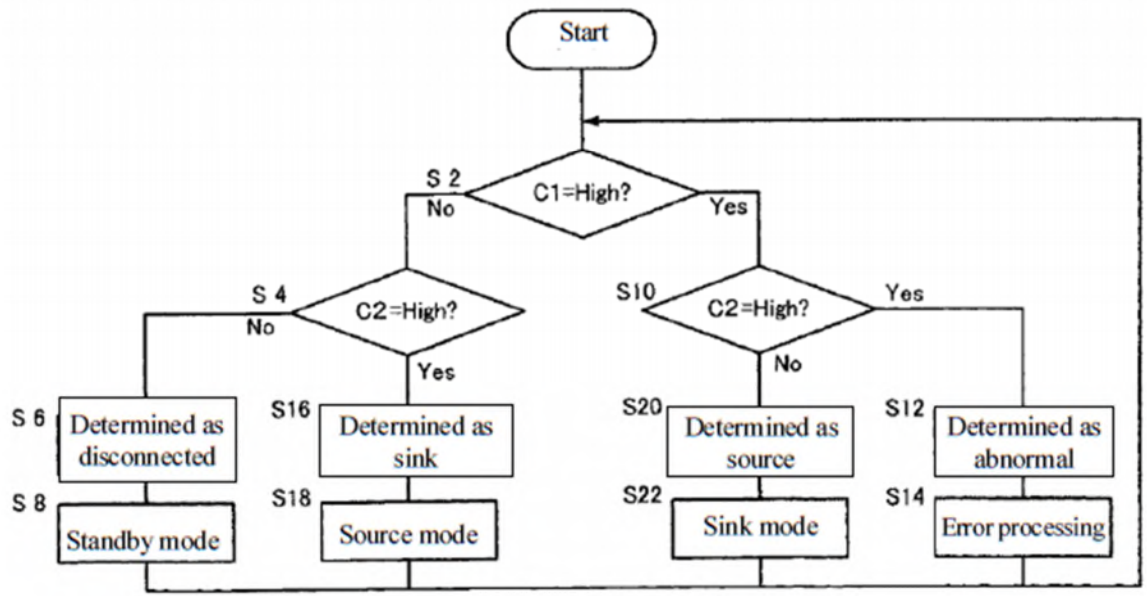
		 [FIG. 3] Iwamoto at Fig. 3.

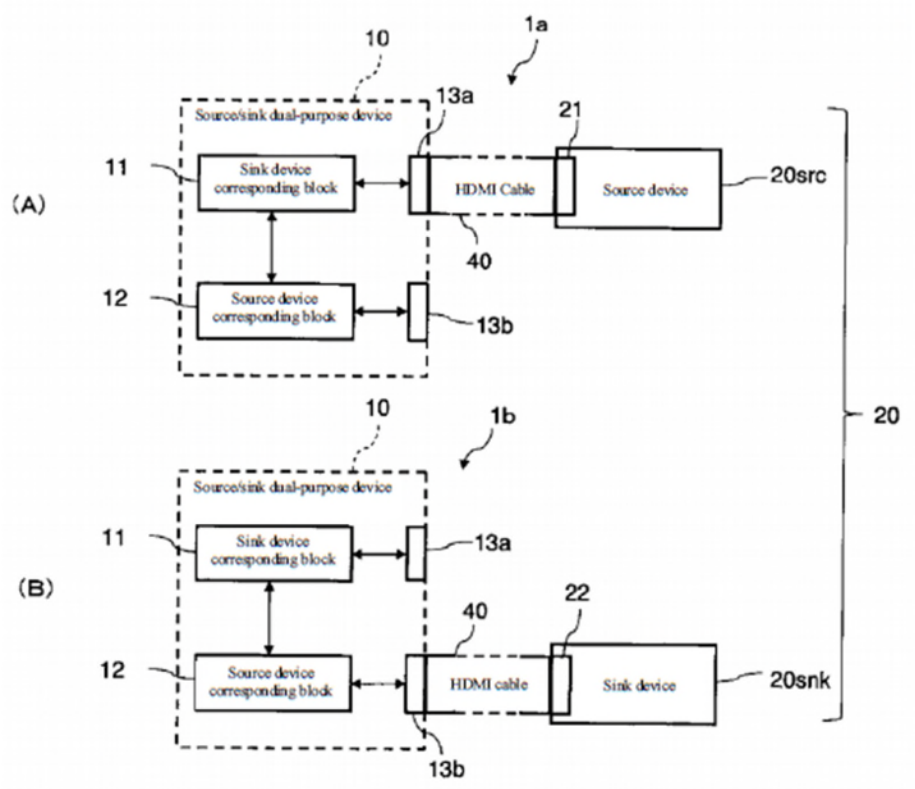
		 Iwamoto at Fig. 5. To the extent that Plaintiff contends that Iwamoto does not explicitly or inherently disclose this element, or render obvious this element, this element is obvious in combination with one or more references and/or with the knowledge of a person of ordinary skill in the art, as set forth in Defendant's Invalidity Contentions.
1(e)	when operating the first AV device in the AV sink operation mode, receiving AV	Iwamoto discloses and/or renders obvious this limitation. *See, e.g.*: "In contrast, when the source/sink dual-purpose device 100 realizes a sink device function, the power input unit 123 supplies power to the hot plug output unit 133, the DDC input unit 143, and

	data provided to the first AV device via the connector and receiving power from the first supply voltage provided to the first AV device at the channel of the connector;	the TDMS input unit 152. By providing the power output unit 122 and the power input unit 123 separately, backflow of current from the sink side to the source side can be prevented." Iwamoto at [0036]. "Thus, in the source/sink dual-purpose device 10 configured as the television with built-in DVD player, a video signal played back by the DVD player is normally displayed as a video by a television display, and an audio signal is output as audio from a speaker of the television. However, there are times when a user would like to view the video on a projector without viewing the video on the television display. Furthermore, it may be desired that the video and audio captured by the digital video camera be played back by a display and a speaker of the source/sink dual-purpose device 10." Iwamoto at [0005]. "In order to respond to such desires, it is required to receive a signal from an external source device to the sink device corresponding block 11 provided in the source/sink dual-purpose device 10 and to supply a signal from the source device corresponding block 12 to the external sink device." Iwamoto at [0006]. "The present invention has been configured in view of such conventional problems, and an object thereof is to provide a source/sink dual-purpose device that can detect a functional attribute of an HDMI device connected to a single connector. To provide a source/sink dual-purpose device capable of automatically switching its own functions according to the detected function attribute of the device." Iwamoto at [0016]. "In a memory (not illustrated) of the DDC input unit 143, when the source/sink dual-purpose device 100 functions as a sink, a displayable video format is stored as the EDID. The EDID stored in the memory is read out by access from the source device 20src when the source/sink dual-purpose device 100 is connected to the source device 20src." Iwamoto at [0039]. "The TDMS input unit 153 receives the video data and the TDMS system audio data transmitted from the source device 20src connected to the HDMI cable 200 when the source/sink dual-purpose device 100 functions as the sink. The video data and the audio data are transferred from the TDMS input unit 153 to the TMDS signal processing unit 154 and converted into video data and audio data before TMDS processing is performed by the TDMS signal processing unit 154. The problem of

		impedance mismatch of the TDMS line 114 can be eliminated by providing the TDMS output unit 152 and the TDMS input unit 153 separately." Iwamoto at [0041]. "Next, two monitoring units 160 and 170 that monitor the connection state between the HDMI cable 200 and the external device 20 will be described. The power supply line monitor unit 160 repeatedly detects a voltage level VL1 of a power supply line 111 among a plurality of lines connected to the connector 110 at predetermined time intervals to generate a binary level signal (hereinafter, 'power supply line level') C1." Iwamoto at [0042]. "When the external device 40 to which the connector 110 is connected via the HDMI cable 200 is the source device 20src, the voltage level VL1 of the power source line 111 indicates a High level (5 V). In contrast, when the connected external device 40 is the sink device 20snk, is not connected, or is not operating due to not being energized despite being connected, the voltage level VL1 indicates a low level (0 V). The power supply line level C1 has a value of either High or Low corresponding to the level of the voltage level VL1." Iwamoto at [0043]. "The TDMS line monitor unit 170 repeatedly detects a voltage level VL2 of the TDMS line (specifically, a TDMS_CLK line) 114 included in the connector 110 at predetermined time intervals to generate a binary level signal (hereinafter, "TDMS line level") C2. When the connector 110 is connected to a sink device via the HDMI cable 200, the voltage level VL2 of the TDMS line 114 indicates a High level (3.3 V)." Iwamoto at [0044]. "In contrast, when the connector 110 is connected to a source device via the HDMI cable 200 or is not connected to another device, the voltage level VL2 indicates a low level (0 V). The TDMS line level C2 has a value of either High or Low corresponding to the level of the voltage level VL2." Iwamoto at [0045]. "Operation of the HDMI attribute switching processing unit 180 will be described below with reference to FIG. 2. The HDMI attribute switching processing unit 180 determines a function J of the external device connected to the connector 110 also used for connection between the source device and the sink device based on the power source line level C1 and the TDMS line level C2. Note that "function," in relation to the external device, refers to one of four states of 'disconnected,' 'abnormal,' 'sink,' and 'source.'" Iwamoto at [0046].

		"In state 4 (source), the source/sink dual-purpose device 100 is set to the sink mode by the processing in step S2 (Yes), step S10 (No), step S20, and step S22. Then, the source/sink dual-purpose device 100 monitors the state of the external device 20 while repeating the process of the flowchart of FIG. 3. Then, when the state of the external device 20 changes, the operating mode of the device itself is reset in accordance with the change." Iwamoto at [0076].  Iwamoto at Fig. 1.

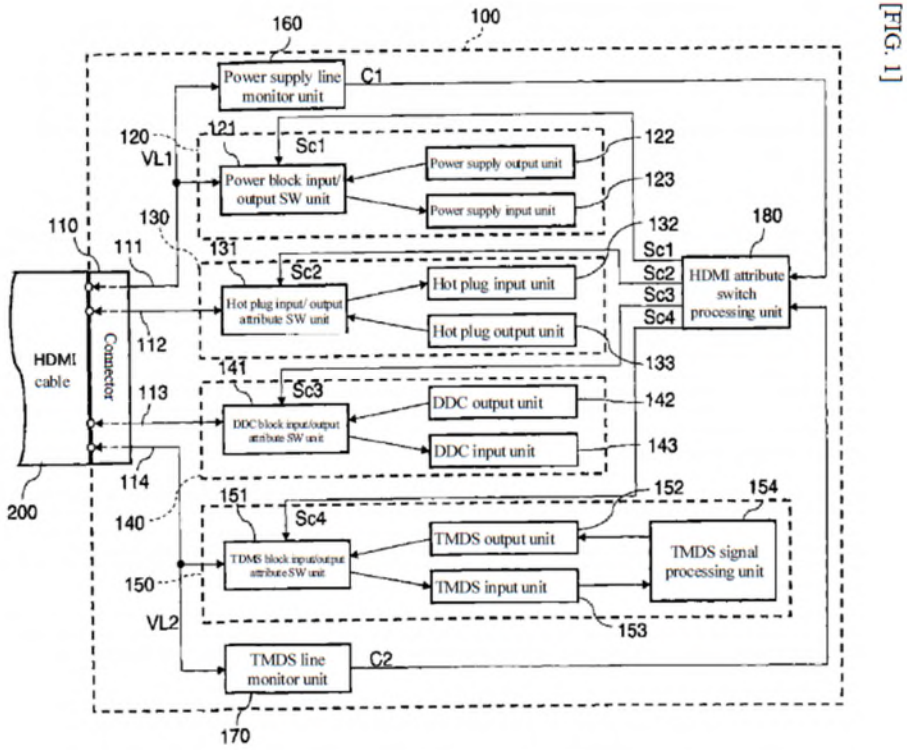
		 [FIG. 3] Iwamoto at Fig. 3.

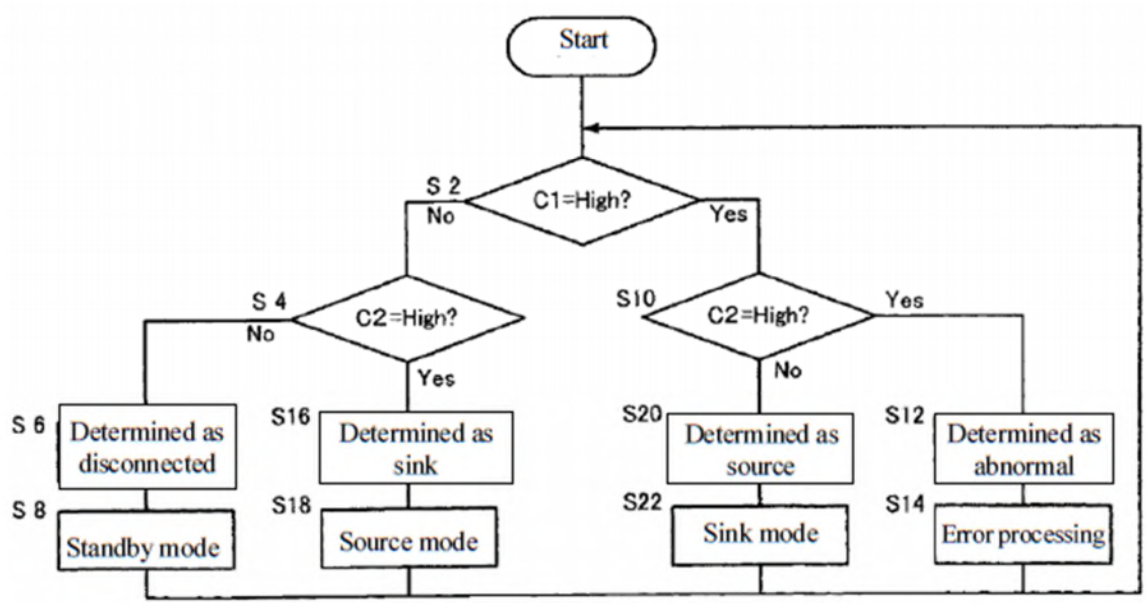
		 Iwamoto at Fig. 5. To the extent that Plaintiff contends that Iwamoto does not explicitly or inherently disclose this element, or render obvious this element, this element is obvious in combination with one or more references and/or with the knowledge of a person of ordinary skill in the art, as set forth in Defendant's Invalidity Contentions.
1(f)	in response to determining that the first supply voltage is not provided at the	Iwamoto discloses and/or renders obvious this limitation. *See, e.g.*: "Next, two monitoring units 160 and 170 that monitor the connection state between the HDMI cable 200 and the external device 20 will be described. The power supply line monitor unit 160 repeatedly

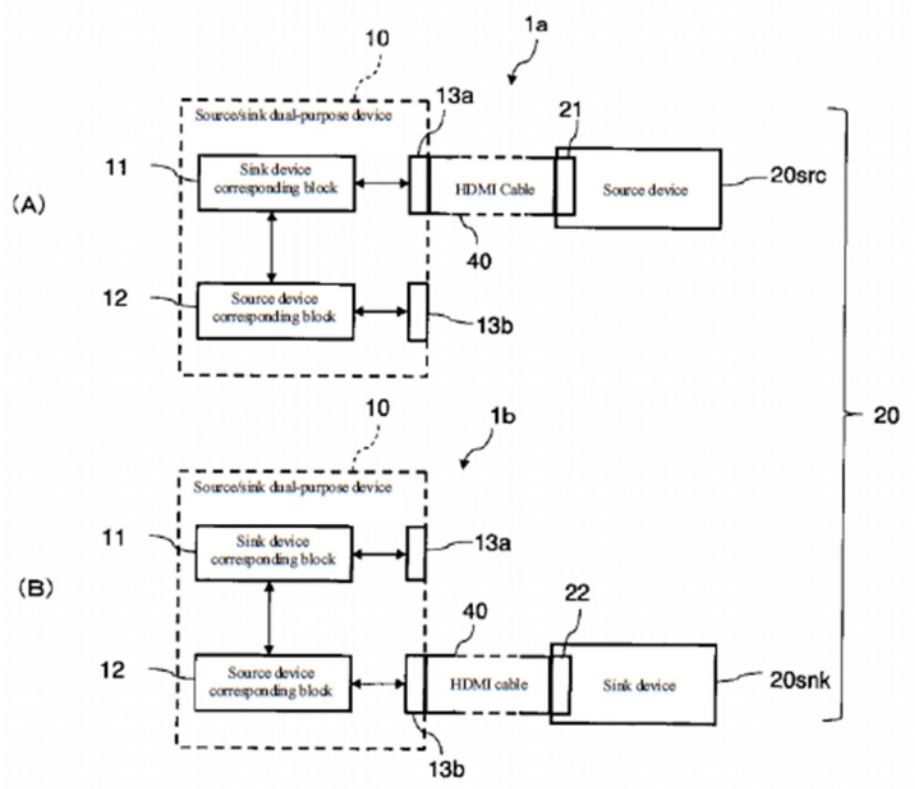
	channel of the connector, configuring the communication logic of the first AV device to transition the first AV device from the AV sink operation mode to an AV source operation mode; and	detects a voltage level VL1 of a power supply line 111 among a plurality of lines connected to the connector 110 at predetermined time intervals to generate a binary level signal (hereinafter, 'power supply line level') C1." Iwamoto at [0042]. "When the external device 40 to which the connector 110 is connected via the HDMI cable 200 is the source device 20src, the voltage level VL1 of the power source line 111 indicates a High level (5 V). In contrast, when the connected external device 40 is the sink device 20snk, is not connected, or is not operating due to not being energized despite being connected, the voltage level VL1 indicates a low level (0 V). The power supply line level C1 has a value of either High or Low corresponding to the level of the voltage level VL1." Iwamoto at [0043]. "The TDMS line monitor unit 170 repeatedly detects a voltage level VL2 of the TDMS line (specifically, a TDMS_CLK line) 114 included in the connector 110 at predetermined time intervals to generate a binary level signal (hereinafter, "TDMS line level") C2. When the connector 110 is connected to a sink device via the HDMI cable 200, the voltage level VL2 of the TDMS line 114 indicates a High level (3.3 V)." Iwamoto at [0044]. "In contrast, when the connector 110 is connected to a source device via the HDMI cable 200 or is not connected to another device, the voltage level VL2 indicates a low level (0 V). The TDMS line level C2 has a value of either High or Low corresponding to the level of the voltage level VL2." Iwamoto at [0045]. "Operation of the HDMI attribute switching processing unit 180 will be described below with reference to FIG. 2. The HDMI attribute switching processing unit 180 determines a function J of the external device connected to the connector 110 also used for connection between the source device and the sink device based on the power source line level C1 and the TDMS line level C2. Note that "function," in relation to the external device, refers to one of four states of 'disconnected,' 'abnormal,' 'sink,' and 'source.'" Iwamoto at [0046]. "State 1: The external device 20 is not connected to the source/sink dual-purpose device 100, or no current is applied despite being connected. State 2: The connected external device 20 is abnormal. State 3: A normal sink device 20snk is connected.

		State 4: A normal source device 20src is connected. State 5: The connection with the external device 20 of state 2 is cut off. State 6: The connection with the external device 20 of state 3 is cut off. State 7: The connection with the external device 20 of state 4 is cut off. State 8: The connection with the external equipment of state 5, state 6, and state 7 is restored." Iwamoto at [0072]. "In state 1 (non-connection), the source/sink dual-purpose device 100 is set to a standby mode by processing in step S2 (No), step S4 (No), step S6, and step S8. Then, the source/sink dual-purpose device 100 waits for the external device 20 to be connected while repeating the process of the flowchart of FIG. 3." Iwamoto at [0073]. "In state 2 (abnormal), the source/sink dual-purpose device 100 is set to the error processing mode by processing in step S2 (Yes), step S10 (Yes), step S12, and step S14. Then, the source/sink dual-purpose device 100 waits for the abnormality of the external device 20 to recover while repeating the process of the flowchart of FIG. 3." Iwamoto at [0074]. "In state 3 (sink), the source/sink dual-purpose device 100 is set to the source mode by the processing in step S2 (No), step S4 (Yes), step S16, and step S18. Then, the source/sink dual-purpose device 100 monitors the state of the external device 20 while repeating the process of the flowchart of FIG. 3. Then, when the state of the external device 20 changes, the operating mode of the device itself is reset in accordance with the change." Iwamoto at [0075]. "In state 4 (source), the source/sink dual-purpose device 100 is set to the sink mode by the processing in step S2 (Yes), step S10 (No), step S20, and step S22. Then, the source/sink dual-purpose device 100 monitors the state of the external device 20 while repeating the process of the flowchart of FIG. 3. Then, when the state of the external device 20 changes, the operating mode of the device itself is reset in accordance with the change." Iwamoto at [0076]. "In state 5, state 6, and state 7, the processing of state 1 described above is executed when the connection with the external device 20 in each state is cut off." Iwamoto at [0077].

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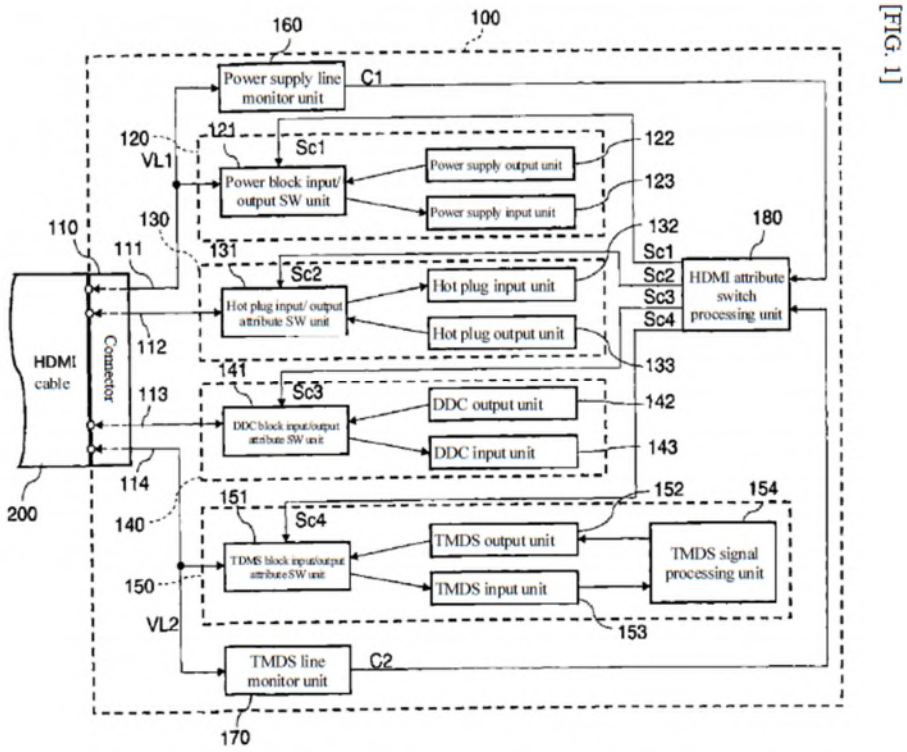
		"In state 8, when the connection with the external device 20 in each state is restored, processing of any of state 2, state 3, or state 4 is executed according to the state of the external device 20." Iwamoto at [0078]. "As described above, it is possible to use a single HDMI connector and automatically switch the attributes of the source device and the sink device without user operation. As a result, it is possible to reduce the cost and size of the device by reducing the number of required components, and to reduce the time and effort of the user to change the HDMI attribute (sink device/source device)." Iwamoto at [0079].  Iwamoto at Fig. 1.

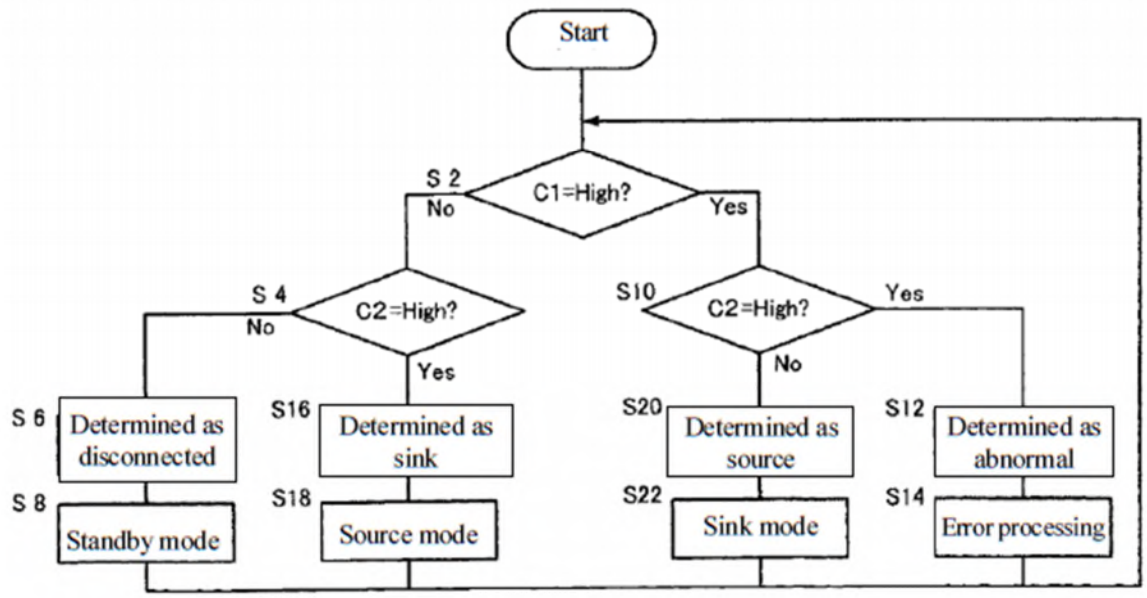
		 [FIG. 3] Iwamoto at Fig. 3.

		 Iwamoto at Fig. 5. To the extent that Plaintiff contends that Iwamoto does not explicitly or inherently disclose this element, or render obvious this element, this element is obvious in combination with one or more references and/or with the knowledge of a person of ordinary skill in the art, as set forth in Defendant's Invalidity Contentions.
1(g)	when operating the first AV device in the AV source operation mode, sending AV	Iwamoto discloses and/or renders obvious this limitation. *See, e.g.*: "In contrast, when the source/sink dual-purpose device 100 realizes a sink device function, the power input unit 123 supplies power to the hot plug output unit 133, the DDC input unit 143, and

	data via the connector and providing a second supply voltage at the channel of the connector.	the TDMS input unit 152. By providing the power output unit 122 and the power input unit 123 separately, backflow of current from the sink side to the source side can be prevented." Iwamoto at [0036]. "Thus, in the source/sink dual-purpose device 10 configured as the television with built-in DVD player, a video signal played back by the DVD player is normally displayed as a video by a television display, and an audio signal is output as audio from a speaker of the television. However, there are times when a user would like to view the video on a projector without viewing the video on the television display. Furthermore, it may be desired that the video and audio captured by the digital video camera be played back by a display and a speaker of the source/sink dual-purpose device 10." Iwamoto at [0005]. "In order to respond to such desires, it is required to receive a signal from an external source device to the sink device corresponding block 11 provided in the source/sink dual-purpose device 10 and to supply a signal from the source device corresponding block 12 to the external sink device." Iwamoto at [0006]. "The present invention has been configured in view of such conventional problems, and an object thereof is to provide a source/sink dual-purpose device that can detect a functional attribute of an HDMI device connected to a single connector. To provide a source/sink dual-purpose device capable of automatically switching its own functions according to the detected function attribute of the device." Iwamoto at [0016]. "In a memory (not illustrated) of the DDC input unit 143, when the source/sink dual-purpose device 100 functions as a sink, a displayable video format is stored as the EDID. The EDID stored in the memory is read out by access from the source device 20src when the source/sink dual-purpose device 100 is connected to the source device 20src." Iwamoto at [0039]. "The TDMS input unit 153 receives the video data and the TDMS system audio data transmitted from the source device 20src connected to the HDMI cable 200 when the source/sink dual-purpose device 100 functions as the sink. The video data and the audio data are transferred from the TDMS input unit 153 to the TMDS signal processing unit 154 and converted into video data and audio data before TMDS processing is performed by the TDMS signal processing unit 154. The problem of

		impedance mismatch of the TDMS line 114 can be eliminated by providing the TDMS output unit 152 and the TDMS input unit 153 separately." Iwamoto at [0041]. "Next, two monitoring units 160 and 170 that monitor the connection state between the HDMI cable 200 and the external device 20 will be described. The power supply line monitor unit 160 repeatedly detects a voltage level VL1 of a power supply line 111 among a plurality of lines connected to the connector 110 at predetermined time intervals to generate a binary level signal (hereinafter, 'power supply line level') C1." Iwamoto at [0042]. "When the external device 40 to which the connector 110 is connected via the HDMI cable 200 is the source device 20src, the voltage level VL1 of the power source line 111 indicates a High level (5 V). In contrast, when the connected external device 40 is the sink device 20snk, is not connected, or is not operating due to not being energized despite being connected, the voltage level VL1 indicates a low level (0 V). The power supply line level C1 has a value of either High or Low corresponding to the level of the voltage level VL1." Iwamoto at [0043]. "The TDMS line monitor unit 170 repeatedly detects a voltage level VL2 of the TDMS line (specifically, a TDMS_CLK line) 114 included in the connector 110 at predetermined time intervals to generate a binary level signal (hereinafter, "TDMS line level") C2. When the connector 110 is connected to a sink device via the HDMI cable 200, the voltage level VL2 of the TDMS line 114 indicates a High level (3.3 V)." Iwamoto at [0044]. "In contrast, when the connector 110 is connected to a source device via the HDMI cable 200 or is not connected to another device, the voltage level VL2 indicates a low level (0 V). The TDMS line level C2 has a value of either High or Low corresponding to the level of the voltage level VL2." Iwamoto at [0045]. "Operation of the HDMI attribute switching processing unit 180 will be described below with reference to FIG. 2. The HDMI attribute switching processing unit 180 determines a function J of the external device connected to the connector 110 also used for connection between the source device and the sink device based on the power source line level C1 and the TDMS line level C2. Note that "function," in relation to the external device, refers to one of four states of 'disconnected,' 'abnormal,' 'sink,' and 'source.'" Iwamoto at [0046].

		"In state 3 (sink), the source/sink dual-purpose device 100 is set to the source mode by the processing in step S2 (No), step S4 (Yes), step S16, and step S18. Then, the source/sink dual-purpose device 100 monitors the state of the external device 20 while repeating the process of the flowchart of FIG. 3. Then, when the state of the external device 20 changes, the operating mode of the device itself is reset in accordance with the change." Iwamoto at [0076].  [FIG. 1] Iwamoto at Fig. 1.

		 Iwamoto at Fig. 3.

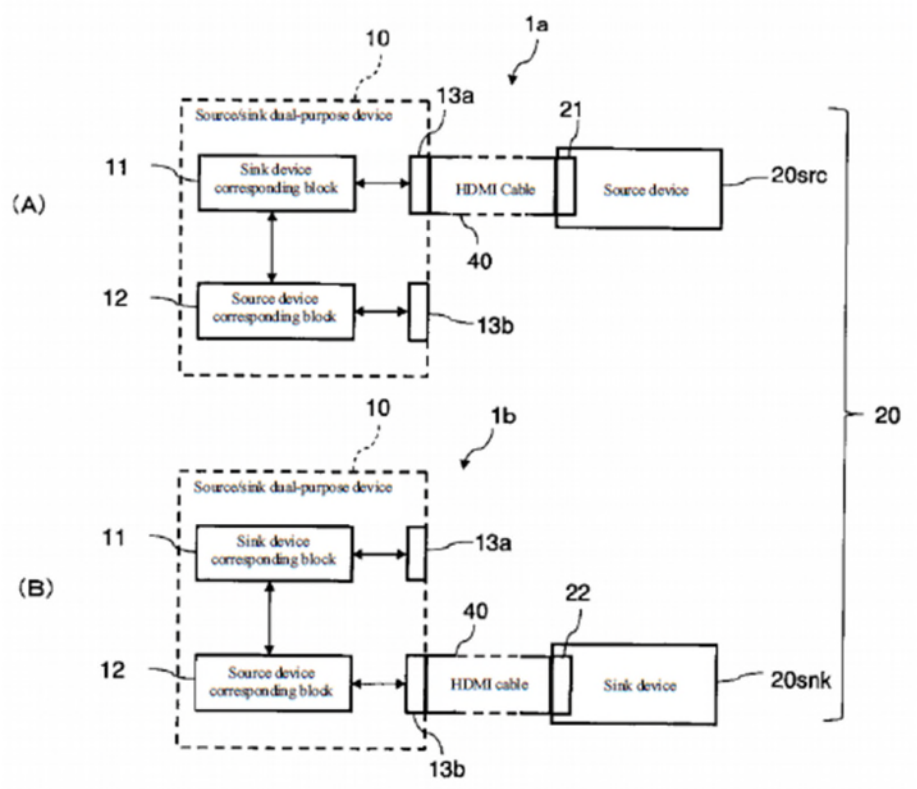
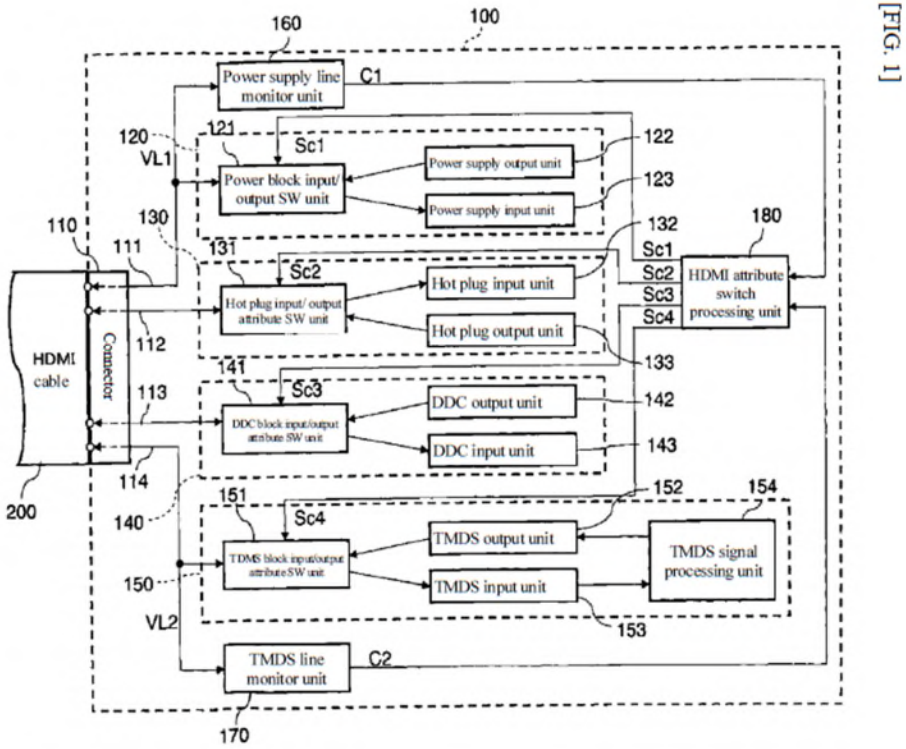
		 Iwamoto at Fig. 5. To the extent that Plaintiff contends that Iwamoto does not explicitly or inherently disclose this element, or render obvious this element, this element is obvious in combination with one or more references and/or with the knowledge of a person of ordinary skill in the art, as set forth in Defendant's Invalidity Contentions.

Exhibit D-5

Claim 8		
8[p]	An audio/video (AV) device comprising:	To the extent the preamble is limiting, Iwamoto discloses this element and/or renders it obvious either alone or in combination with other references and/or the knowledge of one of ordinary skill in the art. *See, e.g.*: "The present invention has been configured in view of such conventional problems, and an object thereof is to provide a source/sink dual-purpose device that can detect a functional attribute of an HDMI device connected to a single connector. To provide a source/sink dual-purpose device capable of automatically switching its own functions according to the detected function attribute of the device." Iwamoto at [0016]. "In order to achieve the foregoing object, the source/sink dual-purpose device of the present invention is a source/sink dual-purpose device conforming to the HDMI standard, provided with first function means for realizing a function as a source device and second function means for realizing a function as a sink device, a source/sink dual-purpose device conforming to the HDMI standard, provided with a second function means for realizing, being provided with a connector for connecting one of the first function means and the second function means to an external device conforming to the HDMI standard, first voltage level monitor means for detecting the voltage level of the power line of the connector, second voltage level monitor means for detecting the voltage level of a TMDS_CLK line of the connector, and function determination means for determining a function of the external device on the basis of the detected two voltage levels." Iwamoto at [0017].

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		 Iwamoto at Fig. 1. To the extent that Plaintiff contends that Iwamoto does not explicitly or inherently disclose this element, or render obvious this element, this element is obvious in combination with one or more references and/or with the knowledge of a person of ordinary skill in the art, as set forth in Defendant's Invalidity Contentions.
8(a)	communication logic to couple to a connector, the	Iwamoto discloses and/or renders obvious this limitation. *See* exemplary disclosures and corresponding discussion for claim element 1(c) and 1(d).

	communication logic including circuitry configured to implement:	
8(a)(1)(i)	an AV sink operation mode for the communication logic to receive AV data provided to the AV device at the connector and to receive power from a first supply voltage provided to the AV device via a channel of the connector,	Iwamoto discloses and/or renders obvious this limitation. *See* exemplary disclosures and corresponding discussion for claim element 1(e).
8(a)(1)(ii)	the AV sink operation mode being a default mode of operation for the AV device, and	Iwamoto in view of Hsieh discloses and/or renders obvious this limitation. *See* exemplary disclosures and corresponding discussion for claim element 1(a).
8(a)(2)	an AV source operation mode for the communication logic to send AV data from the AV device via the connector and to provide a second supply voltage at the	Iwamoto discloses and/or renders obvious this limitation. *See* exemplary disclosures and corresponding discussion for claim element 1(g).

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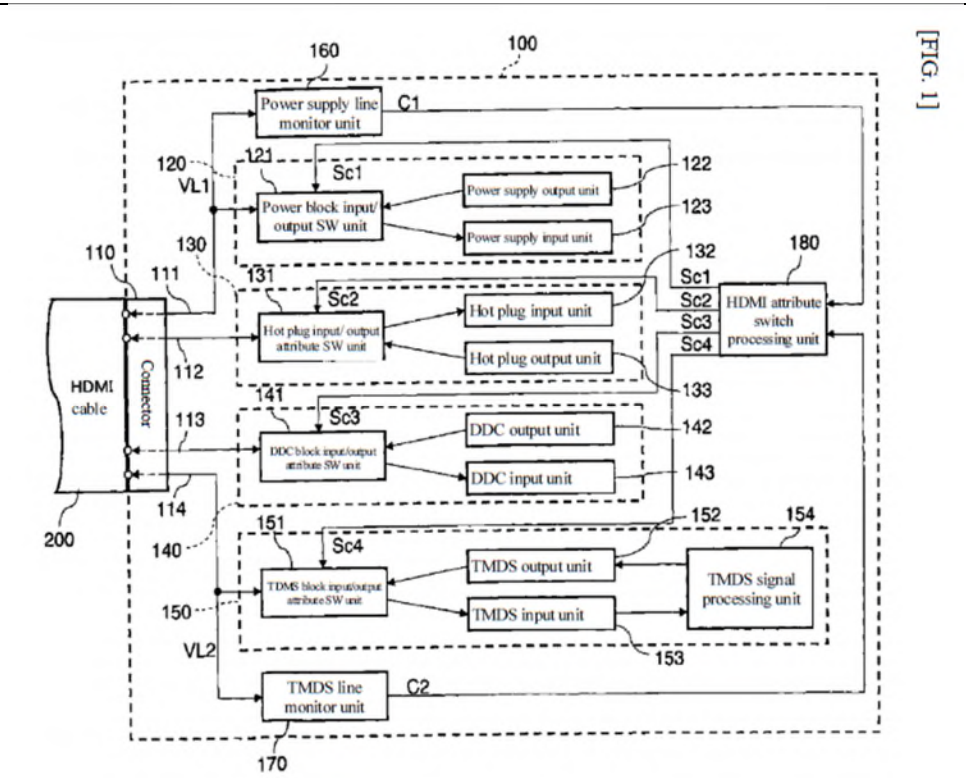
	channel of the connector; and	
8(b)(1)	control logic including circuitry to configure the communication logic to initialize the AV device to operate in the default AV sink operation mode in response to a power-on-reset or powering up of the AV device,	Iwamoto in view of Hsieh discloses and/or renders obvious this limitation. *See* exemplary disclosures and corresponding discussion for claim element 1(a).
8(b)(2)	to continue operating the AV device in the AV sink operation mode in response to determining that the first supply voltage is provided at the channel of the connector, and to configure the communication logic to transition the AV device from the AV sink operation mode to the AV source operation mode in response to determining that the	Iwamoto discloses and/or renders obvious this limitation. *See* exemplary disclosures and corresponding discussion for claim element 1(d), 1(f), and 1(c).

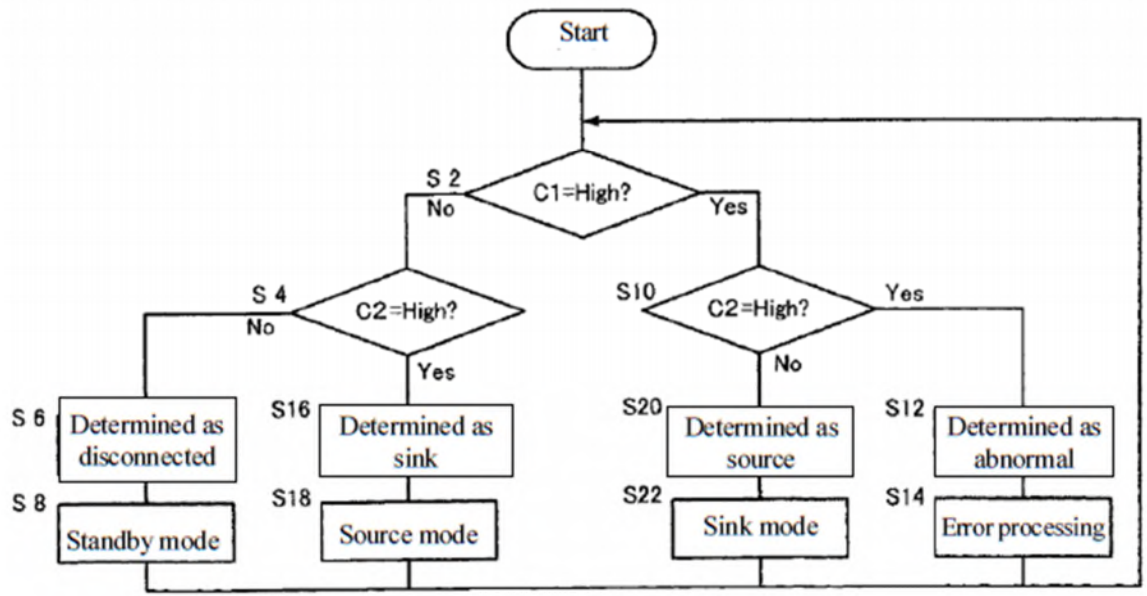
	first supply voltage is not provided at the channel of the connector.	
Claim 11		
11(a)	The device of claim 8, further comprising: detector logic to detect, while the communication logic is in the default operation mode, a coupling of the AV device to another AV device via the connector; and	Iwamoto in view of Hsieh discloses, expressly or inherently, the device of claim 8 under any proposed construction, and further discloses and/or renders obvious limitation 11(a). *See* exemplary disclosures and corresponding discussion for claim 8 and claim element 1(b).
11(b)	wherein the communication logic is further configured to perform an AV data exchange with the other device in response to the detection.	Iwamoto discloses and/or renders obvious this limitation. *See, e.g.*: "In contrast, when the source/sink dual-purpose device 100 realizes a sink device function, the power input unit 123 supplies power to the hot plug output unit 133, the DDC input unit 143, and the TDMS input unit 152. By providing the power output unit 122 and the power input unit 123 separately, backflow of current from the sink side to the source side can be prevented." Iwamoto at [0036]. "Thus, in the source/sink dual-purpose device 10 configured as the television with built-in DVD player, a video signal played back by the DVD player is normally displayed as a video by a television display, and an audio signal is output as audio from a speaker of the television. However, there are times when a user would like to view the video on a projector without viewing the video on the television display. Furthermore, it may be desired that the video and audio captured by the

		digital video camera be played back by a display and a speaker of the source/sink dual-purpose device 10." Iwamoto at [0005]. "In order to respond to such desires, it is required to receive a signal from an external source device to the sink device corresponding block 11 provided in the source/sink dual-purpose device 10 and to supply a signal from the source device corresponding block 12 to the external sink device." Iwamoto at [0006]. "The present invention has been configured in view of such conventional problems, and an object thereof is to provide a source/sink dual-purpose device that can detect a functional attribute of an HDMI device connected to a single connector. To provide a source/sink dual-purpose device capable of automatically switching its own functions according to the detected function attribute of the device." Iwamoto at [0016]. "In the DDC block 140, when the source/sink dual-purpose device 100 functions as a source, EDID data related to a displayable video format from the sink device 20snk connected to the HDMI cable 200 is transferred to a DDC output unit 142 and stored in a memory (not illustrated). The DDC output unit 142 sets a video format on the basis of a user instruction from the EDID stored in a memory." Iwamoto at [0038]. "In a memory (not illustrated) of the DDC input unit 143, when the source/sink dual-purpose device 100 functions as a sink, a displayable video format is stored as the EDID. The EDID stored in the memory is read out by access from the source device 20src when the source/sink dual-purpose device 100 is connected to the source device 20src." Iwamoto at [0039]. "In the TDMS block 150, when the source/sink dual-purpose device 100 functions as a source, a TDMS output unit 152 outputs video data and audio data converted into TDMS system data by the TDMS signal processing unit 154 to the sink device 20snk connected to the HDMI cable 200." Iwamoto at [0040]. "The TDMS input unit 153 receives the video data and the TDMS system audio data transmitted from the source device 20src connected to the HDMI cable 200 when the source/sink dual-purpose device 100 functions as the sink. The video data and the audio data are transferred from the TDMS

		input unit 153 to the TMDS signal processing unit 154 and converted into video data and audio data before TMDS processing is performed by the TDMS signal processing unit 154. The problem of impedance mismatch of the TDMS line 114 can be eliminated by providing the TDMS output unit 152 and the TDMS input unit 153 separately." Iwamoto at [0041]. "Next, two monitoring units 160 and 170 that monitor the connection state between the HDMI cable 200 and the external device 20 will be described. The power supply line monitor unit 160 repeatedly detects a voltage level VL1 of a power supply line 111 among a plurality of lines connected to the connector 110 at predetermined time intervals to generate a binary level signal (hereinafter, 'power supply line level') C1." Iwamoto at [0042]. "When the external device 40 to which the connector 110 is connected via the HDMI cable 200 is the source device 20src, the voltage level VL1 of the power source line 111 indicates a High level (5 V). In contrast, when the connected external device 40 is the sink device 20snk, is not connected, or is not operating due to not being energized despite being connected, the voltage level VL1 indicates a low level (0 V). The power supply line level C1 has a value of either High or Low corresponding to the level of the voltage level VL1." Iwamoto at [0043]. "The TDMS line monitor unit 170 repeatedly detects a voltage level VL2 of the TDMS line (specifically, a TDMS_CLK line) 114 included in the connector 110 at predetermined time intervals to generate a binary level signal (hereinafter, "TDMS line level") C2. When the connector 110 is connected to a sink device via the HDMI cable 200, the voltage level VL2 of the TDMS line 114 indicates a High level (3.3 V)." Iwamoto at [0044]. "In contrast, when the connector 110 is connected to a source device via the HDMI cable 200 or is not connected to another device, the voltage level VL2 indicates a low level (0 V). The TDMS line level C2 has a value of either High or Low corresponding to the level of the voltage level VL2." Iwamoto at [0045]. "Operation of the HDMI attribute switching processing unit 180 will be described below with reference to FIG. 2. The HDMI attribute switching processing unit 180 determines a function J of the external device connected to the connector 110 also used for connection between the source device and the sink device based on the power source line level C1 and the TDMS line level C2.

		Note that "function," in relation to the external device, refers to one of four states of 'disconnected,' 'abnormal,' 'sink,' and 'source.'" Iwamoto at [0046]. "In state 3 (sink), the source/sink dual-purpose device 100 is set to the source mode by the processing in step S2 (No), step S4 (Yes), step S16, and step S18. Then, the source/sink dual-purpose device 100 monitors the state of the external device 20 while repeating the process of the flowchart of FIG. 3. Then, when the state of the external device 20 changes, the operating mode of the device itself is reset in accordance with the change." Iwamoto at [0075]. "In state 4 (source), the source/sink dual-purpose device 100 is set to the sink mode by the processing in step S2 (Yes), step S10 (No), step S20, and step S22. Then, the source/sink dual-purpose device 100 monitors the state of the external device 20 while repeating the process of the flowchart of FIG. 3. Then, when the state of the external device 20 changes, the operating mode of the device itself is reset in accordance with the change." Iwamoto at [0076].

		 Iwamoto at Fig. 1.

		 [FIG. 3] Iwamoto at Fig. 3.

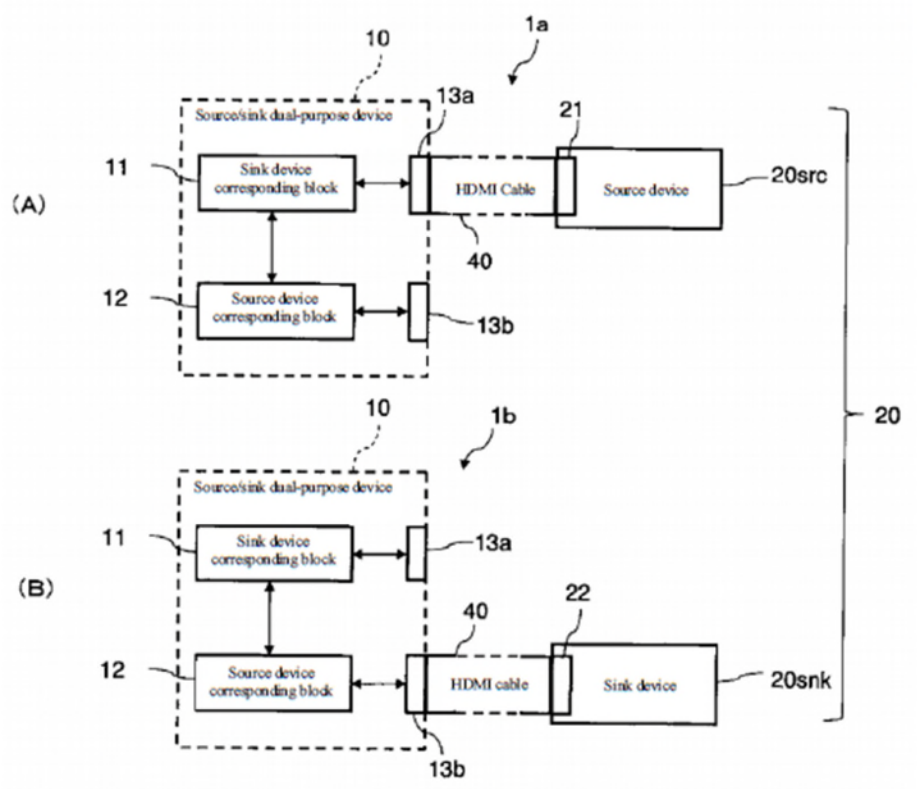
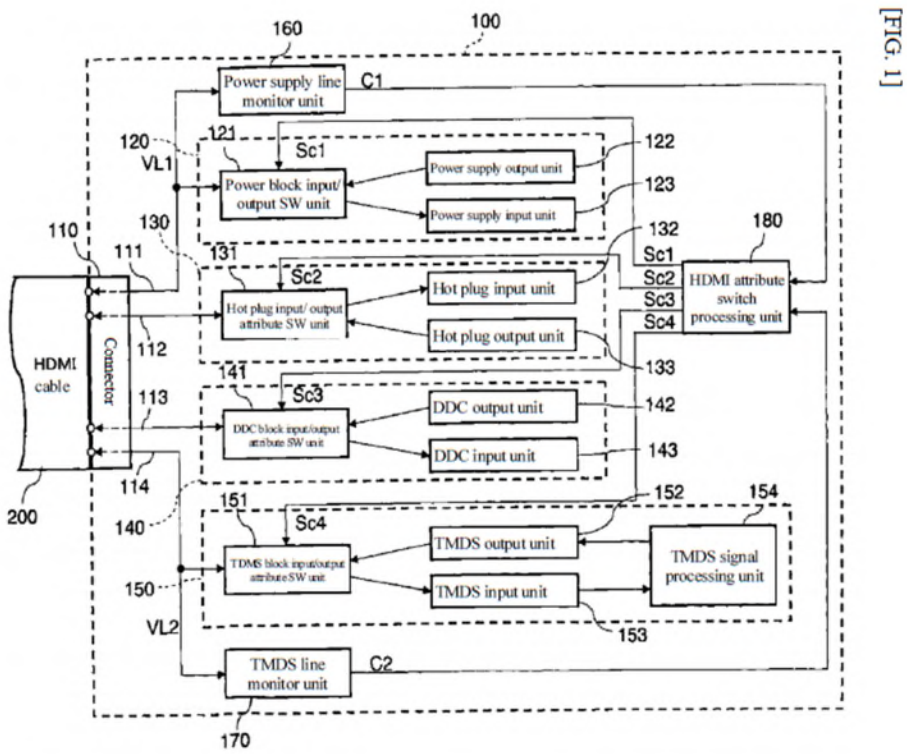
		 Iwamoto at Fig. 5. To the extent that Plaintiff contends that Iwamoto does not explicitly or inherently disclose this element, or render obvious this element, this element is obvious in combination with one or more references and/or with the knowledge of a person of ordinary skill in the art, as set forth in Defendant's Invalidity Contentions.

Exhibit D-5

Claim 14		
14[p]	A system comprising:	To the extent the preamble is limiting, Iwamoto discloses this element and/or renders it obvious either alone or in combination with other references and/or the knowledge of one of ordinary skill in the art. *See, e.g.*: "The present invention has been configured in view of such conventional problems, and an object thereof is to provide a source/sink dual-purpose device that can detect a functional attribute of an HDMI device connected to a single connector. To provide a source/sink dual-purpose device capable of automatically switching its own functions according to the detected function attribute of the device." Iwamoto at [0016]. "In order to achieve the foregoing object, the source/sink dual-purpose device of the present invention is a source/sink dual-purpose device conforming to the HDMI standard, provided with first function means for realizing a function as a source device and second function means for realizing a function as a sink device, a source/sink dual-purpose device conforming to the HDMI standard, provided with a second function means for realizing, being provided with a connector for connecting one of the first function means and the second function means to an external device conforming to the HDMI standard, first voltage level monitor means for detecting the voltage level of the power line of the connector, second voltage level monitor means for detecting the voltage level of a TMDS_CLK line of the connector, and function determination means for determining a function of the external device on the basis of the detected two voltage levels." Iwamoto at [0017].

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		 Iwamoto at Fig. 1. To the extent that Plaintiff contends that Iwamoto does not explicitly or inherently disclose this element, or render obvious this element, this element is obvious in combination with one or more references and/or with the knowledge of a person of ordinary skill in the art, as set forth in Defendant's Invalidity Contentions.

14(a)	a connector;	Iwamoto discloses and/or renders obvious this limitation. *See* exemplary disclosures and corresponding discussion for claim element 1(c).
14(b)	communication logic of an audio/video (AV) device coupled to the connector, the communication logic including circuitry configured to implement:	Iwamoto discloses and/or renders obvious this limitation. *See* exemplary disclosures and corresponding discussion for claim element 1(c) and 1(d).
14(b)(1)	an AV sink operation mode for the communication logic to receive AV data provided to the system at the connector and to receive power from a first supply voltage provided to the system at a channel of the connector, the AV sink operation mode being a default mode of operation for the system, and	Iwamoto in view of Hsieh discloses and/or renders obvious this limitation. *See* exemplary disclosures and corresponding discussion for claim element 1(a) and 1(e).
14(b)(2)	an AV source operation mode for the communication logic to send AV data from	Iwamoto discloses and/or renders obvious this limitation. *See* exemplary disclosures and corresponding discussion for claim element 1(g).

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	the system via the connector and to provide a second supply voltage at the channel of the connector; and	
14(c)	control logic including circuitry to configure the communication logic to initialize the AV device to operate in the default AV sink operation mode in response to a power-on-reset or powering up of the AV device, to continue operating the AV device in the AV sink operation mode in response to determining that the first supply voltage is provided at the channel of the connector, and to configure the communication logic to transition the AV device from the AV sink operation mode to	Iwamoto in view of Hsieh discloses and/or renders obvious this limitation. *See* exemplary disclosures and corresponding discussion for claim element 1(a), 1(c), 1(d), and 1(f).

	the AV source operation mode in response to determining that the first supply voltage is not provided at the channel of the connector.	

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Exhibit D-7

Invalidity of the '265 Patent in View of JP 2009-60204 A to Iwamoto (Iwamoto) and U.S. Pat. App. Pub. No. 2008/0028237 A1 to Knight (Knight).

This chart provides examples of where the prior art reference discloses, either expressly or inherently, the claim elements of asserted U.S. Patent No. 9,232,265 ("the '265 patent"). The citations herein are exemplary and are not exhaustive; Defendant has cited the most relevant portions of the identified prior art. For each citation, Defendant hereby incorporates by reference the entire cited prior art reference, and reserves the right to rely on uncited portions of each identified prior art reference. To provide context or identify the state of the art at the time of the alleged invention, Defendant reserves the right to rely on: (1) uncited portions of the identified prior art; (2) other prior art not identified herein; (3) references that show the state of the art (irrespective of whether such references themselves qualify as prior art); (4) factual testimony from the inventors or authors of the prior art references, or purveyors of prior art devices; and (5) expert testimony.

Where Defendant cites a figure, the citation includes any text associated with the figure. Where Defendant cites passages relating to a figure, the citation includes the associated figure any other text associated with that figure. Where Defendant cites particular prior art as disclosing a claim element, that citation equally applies to all identical or similar claim elements in this chart. Defendant reserves the right to further assert that a claim element is inherent, the element would have been obvious to a person of ordinary skill in the art, or the element is disclosed in other prior art that may be combined with the cited prior art. To establish the inherency of certain features of the prior art to invalidate the asserted claims, Defendant may rely on cited or uncited portions of the prior art, other documents, factual testimony, and expert testimony.

This invalidity chart is based on information presently available to Defendant, and the information herein is provided as a non-limiting example.

Iwamoto was filed on August 30, 2007, and published on March 19, 2009; therefore, Iwamoto is prior art under at least 35 U.S.C. § 102(b).

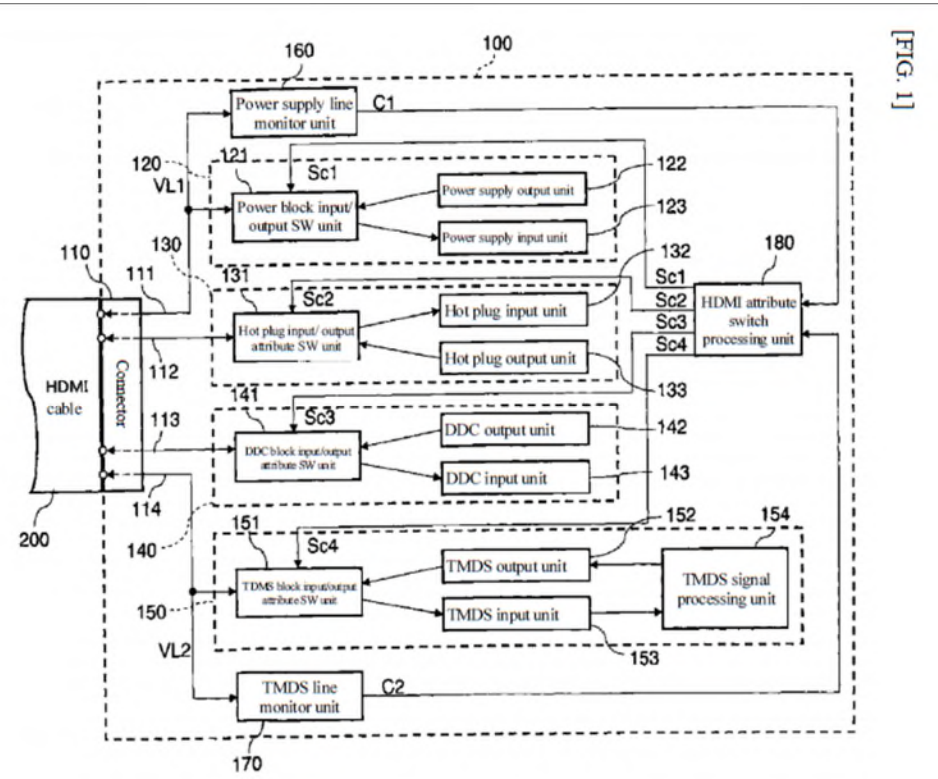
Knight was filed on July 26, 2006, and published on January 31, 2008; therefore, Knight is prior art under at least 35 U.S.C. § 102(b).

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Exhibit D-7

Claim Limitation		Iwamoto and/or Knight
Claim 1		
1[p]	A method comprising:	To the extent the preamble is limiting, Iwamoto discloses this element and/or renders it obvious either alone or in combination with other references and/or the knowledge of one of ordinary skill in the art. *See, e.g.*: "The present invention has been configured in view of such conventional problems, and an object thereof is to provide a source/sink dual-purpose device that can detect a functional attribute of an HDMI device connected to a single connector. To provide a source/sink dual-purpose device capable of automatically switching its own functions according to the detected function attribute of the device." Iwamoto at [0016]. "In order to achieve the foregoing object, the source/sink dual-purpose device of the present invention is a source/sink dual-purpose device conforming to the HDMI standard, provided with first function means for realizing a function as a source device and second function means for realizing a function as a sink device, a source/sink dual-purpose device conforming to the HDMI standard, provided with a second function means for realizing, being provided with a connector for connecting one of the first function means and the second function means to an external device conforming to the HDMI standard, first voltage level monitor means for detecting the voltage level of the power line of the connector, second voltage level monitor means for detecting the voltage level of a TMDS_CLK line of the connector, and function determination means for determining a function of the external device on the basis of the detected two voltage levels." Iwamoto at [0017]. "Before describing embodiments of the present invention in detail, first, main characteristics of the present invention will be described. The source/sink dual-purpose device according to the present invention is configured to conform to the HDMI standard and is provided with two monitor units for detecting a state of signals flowing through an HDMI cable. When an external device is connected via an HDMI cable to a connector shared by both a source and a sink of the source/sink

		dual-purpose device, a function attribute of whether the connected external device conforming to the HDMI standard is the source or the sink is determined on the basis of detection results of two monitor units." Iwamoto at [0026]. "The source/sink dual-purpose device switches its own function to the source or the sink according to the determined function attribute of the external device. At this time, the source/sink dual-purpose device 1 adjusts its own impedance so as not to cause an impedance mismatch with the external device. As a result, the source/sink dual-purpose device can function as the source device or the sink device according to the attribute of the device connected to the shared connector, that is, whether it is the sink device or the source device, without a switching operation of the user." Iwamoto at [0027].

		 Iwamoto at Fig. 1. To the extent that Plaintiff contends that Iwamoto does not explicitly or inherently disclose this element, or render obvious this element, this element is obvious in combination with one or more references and/or with the knowledge of a person of ordinary skill in the art, as set forth in Defendant's Invalidity Contentions.
1(a)	initializing a first audio/video (AV) device to operate in a default AV sink operation mode in	Iwamoto in view of Knight discloses and/or renders obvious this limitation. *See, e.g.*: "An AV system conforming to the HDMI standard is normally configured by connecting a source device that supplies AV signals and a sink device that receives the AV signals via a cable conforming to the HDMI standard (hereinafter referred to as an "HDMI cable"). A device for

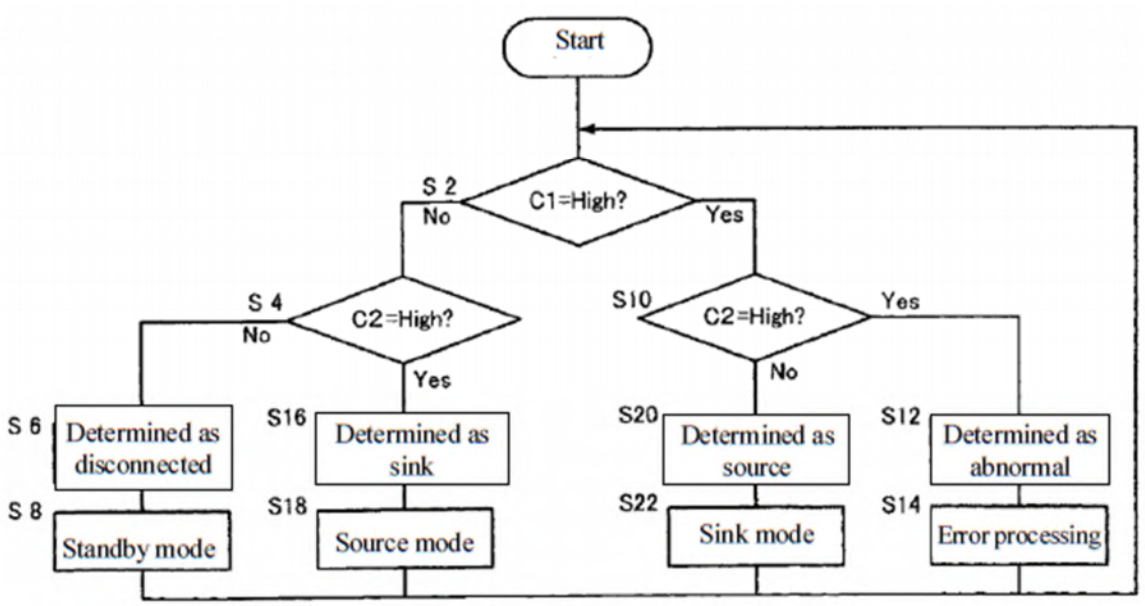
	response to a power-on-reset or powering up of the first AV device;	supplying a video signal or an audio signal such as an STB, a DVD player, or a digital video camera is used as the source device. A device such as a television receiver (hereinafter referred to as "television") or a projector that outputs video or audio is used as the sink device. It is conceivable that these constitute a source/sink dual-purpose device having both a function of the source device and a function of the sink device, such as a television with a built-in DVD player." [0003]. "In order to achieve the foregoing object, the source/sink dual-purpose device of the present invention is a source/sink dual-purpose device conforming to the HDMI standard, provided with first function means for realizing a function as a source device and second function means for realizing a function as a sink device, a source/sink dual-purpose device conforming to the HDMI standard, provided with a second function means for realizing, being provided with a connector for connecting one of the first function means and the second function means to an external device conforming to the HDMI standard, first voltage level monitor means for detecting the voltage level of the power line of the connector, second voltage level monitor means for detecting the voltage level of a TMDS_CLK line of the connector, and function determination means for determining a function of the external device on the basis of the detected two voltage levels." Iwamoto at [0017]. "The HDMI attribute switching processing unit 180 further determines an operation mode M of the source/sink dual-purpose device 100 based on the determination result of the external device function attribute. Note that "operation mode" refers to which function of "standby," "error processing," "source," or "sink" the source/sink dual-purpose device 100 operates." Iwamoto at [0051]. "'Standby' refers to a process for energizing the source/sink dual-purpose device 100 and waiting for connection of the external device. When the function attribute of the external device is determined to be "disconnected", a "standby" mode is determined." Iwamoto at [0052].

		" Specifically, when determined to be in "standby" mode, the control signals Sc1 to Sc4 control the power supply block input/output SW unit 121, the DDC block input/output attribute SW unit 131, the hot plug input/output attribute SW unit 131, and the TDMS block input/output attribute SW unit 151, respectively, so that the power supply block 120, the hot plug block 130, the DCC block 140, and the TMDS block 150 become high impedance." Iwamoto at [0057]. "In step S6, both the power source line level C1 and the TDMS line level C2 are Low, and thus, as described with reference to FIG. 2, it is determined that the external device 20 is "disconnected." Then, in step S8, the control signals Sc1 to Sc4 are output, and the source/sink dual-purpose device 100 is set to the standby mode. Then, control returns to step S2 described above." Iwamoto at [0065]. "State 1: The external device 20 is not connected to the source/sink dual-purpose device 100, or no current is applied despite being connected…. In state 1 (non-connection), the source/sink dual-purpose device 100 is set to a standby mode by processing in step S2 (No), step S4 (No), step S6, and step S8. Then, the source/sink dual-purpose device 100 waits for the external device 20 to be connected while repeating the process of the flowchart of FIG. 3." Iwamoto at [0072]-[0073].

[FIG. 2]

C1	C2	J	M	Sc	
Power line level	TMDS CLK line level	External device function determination	Operation mode determination	Control Signal	
Low	Low	Disconnected	Standby	Sc1	High Impedance
				Sc2	High Impedance
				Sc3	High Impedance
				Sc4	High Impedance
High	High	Error	Shunt	Sc1	High Impedance
				Sc2	High Impedance
				Sc3	High Impedance
				Sc4	High Impedance
Low	High	Sink	Source	Sc1	Power supply output unit
				Sc2	Hot plug input unit
				Sc3	DCC output unit
				Sc4	TMDS output unit
High	Low	Source	Sink	Sc1	Power supply input unit
				Sc2	Hot plug output unit
				Sc3	DDC input unit
				Sc4	TMDS input unit

Iwamoto at Fig. 2.

		 [FIG. 3] Iwamoto at Fig. 3. To the extent that Plaintiff contends that Iwamoto does not explicitly or inherently disclose this element, or render obvious this element, this element is obvious in combination with one or more references and/or with the knowledge of a person of ordinary skill in the art, as set forth in Defendant's Invalidity Contentions. For example, Knight teaches a similar AV system with devices that first attempt to connect as a sink, and then attempt to connect as a source: "All electronic devices that are able to communicate with other devices have the need for both power and data communication on some level. It is often desirable to integrate both power and data into a single connector and sometimes even route both power and data over the same conductors." Knight at [0001].

		"A typical scenario is one where a device, such as a remote video camera, is powered through the same interface through which it sends data. Such cameras are commercially available and may operate using USB, Firewire, or PoE. One device, the host, sources power while the other device, the camera, sinks power." Knight at [0002]. "Embodiment 100 is a device that is capable of communicating power and data through a single connector to another device....Such interfaces are useful for a wide variety of applications, including devices such as a remote camera that has data and power connections through a single USB or PoE cable." Knight at [0024]. "The embodiment 100 may be, for example, a portion of a laptop computer that has several connector interfaces 104, 106, 108, and 110 for powering and com-municating with various external devices, such as pointing devices, cameras, speakers, or any other device that uses a combination of data and power provided through one of the connector interfaces. The battery bank 126 in this example may be integral to the laptop computer, but may be charged through power from the external power source 136 or through power supplied on one of the connector interfaces 104, 106, 108, or 110." Knight at [0027]. "Power may be managed across multiple devices and power may be managed as a system of several devices. For example, device 138 may be initially configured to supply power from a battery source attached to device 138, and the power supply may be sufficient to power devices 140, 142, and 144. When the battery source attached to device 138 reaches a low threshold, communication through the data lines 122 may be used to reconfigure the system such that the device 102 and the battery bank 126 supplies power to the devices 140, 142, and 144. Additionally, the device 138 may switch from sourcing power to sinking power from device 102. In this manner, several devices, each having a store of power, may share power and reconfigure power delivery such that the entire system remains powered." Knight at [0037]. "The embodiment 200 illustrates a method by which a device first attempts to connect as a power source, then attempts to connect as a power sink if the power source attempt fails. In other embodiments, a device may be configured to attempt to connect as a power sink initially, then attempts as a power source secondarily." Knight at [0048].

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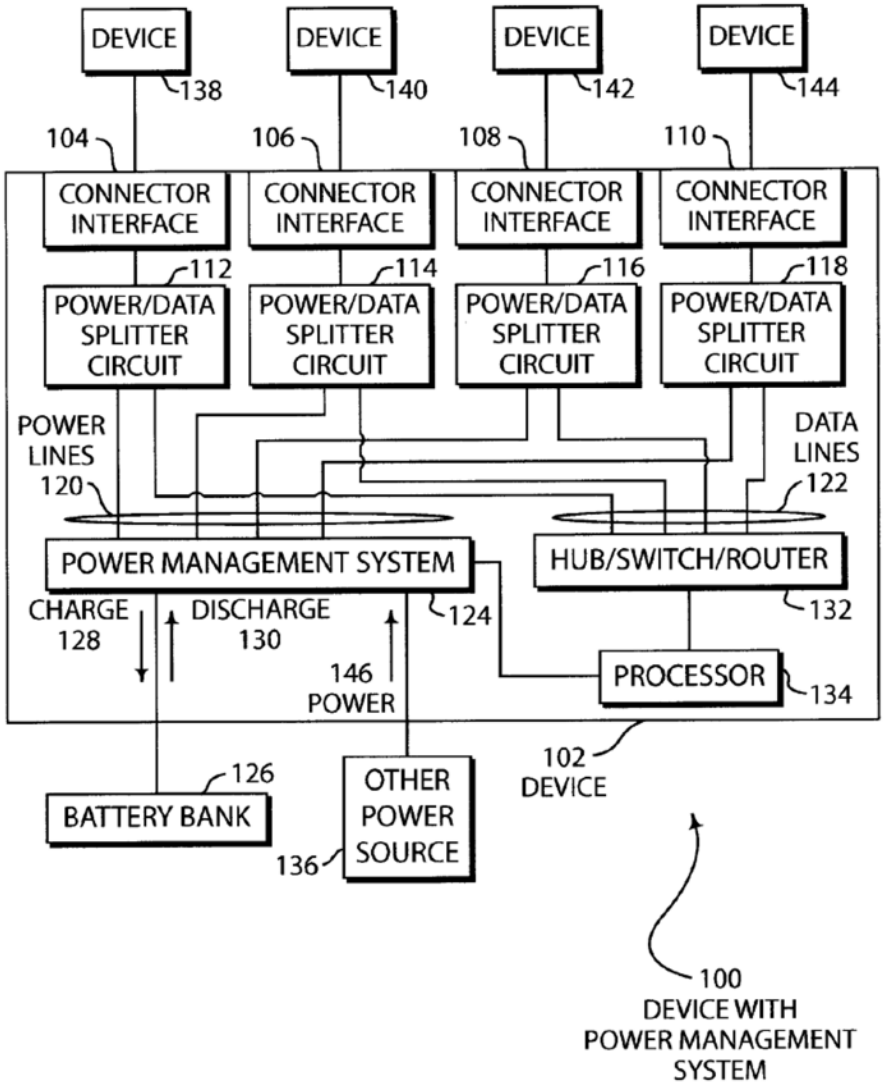
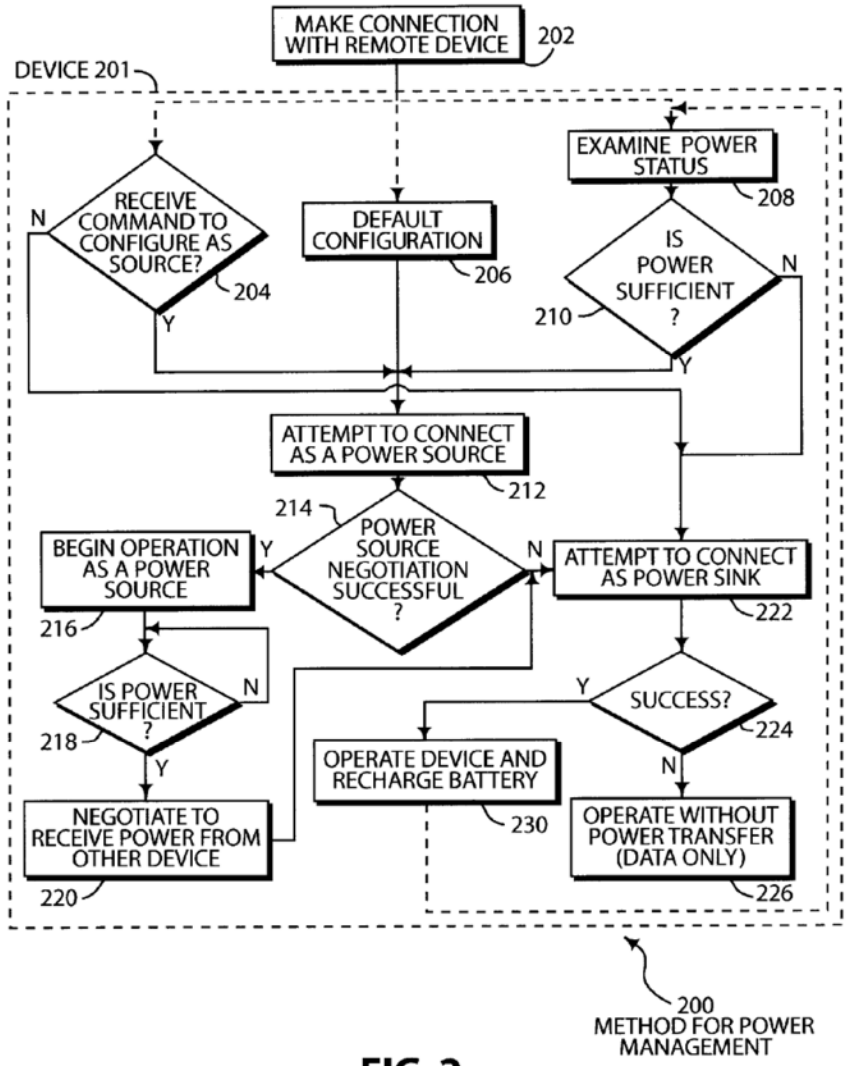

DEVICE
138
DEVICE
140
DEVICE
142
DEVICE
144
104
106
108
110
CONNECTOR INTERFACE
CONNECTOR INTERFACE
CONNECTOR INTERFACE
CONNECTOR INTERFACE
112
114
116
118
POWER/DATA SPLITTER CIRCUIT
POWER/DATA SPLITTER CIRCUIT
POWER/DATA SPLITTER CIRCUIT
POWER/DATA SPLITTER CIRCUIT
POWER LINES
120
DATA LINES
122
POWER MANAGEMENT SYSTEM
HUB/SWITCH/ROUTER
CHARGE
128
DISCHARGE
130
124
132
146
POWER
PROCESSOR
134
102
DEVICE
126
BATTERY BANK
OTHER POWER SOURCE
136
100
DEVICE WITH POWER MANAGEMENT SYSTEM

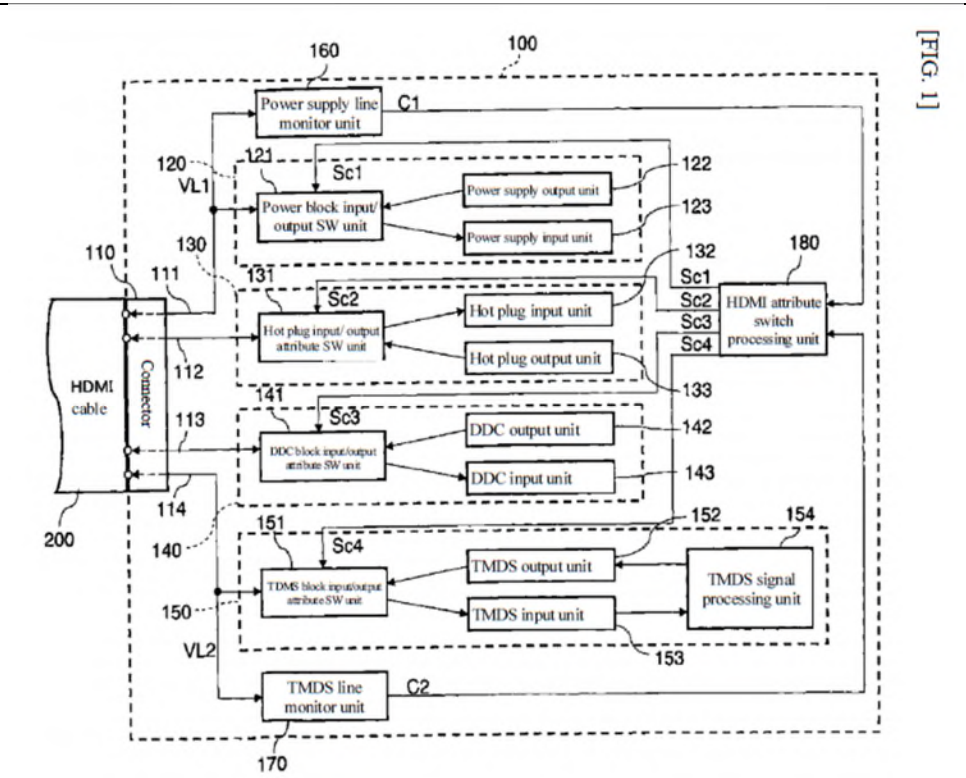
FIG. 1

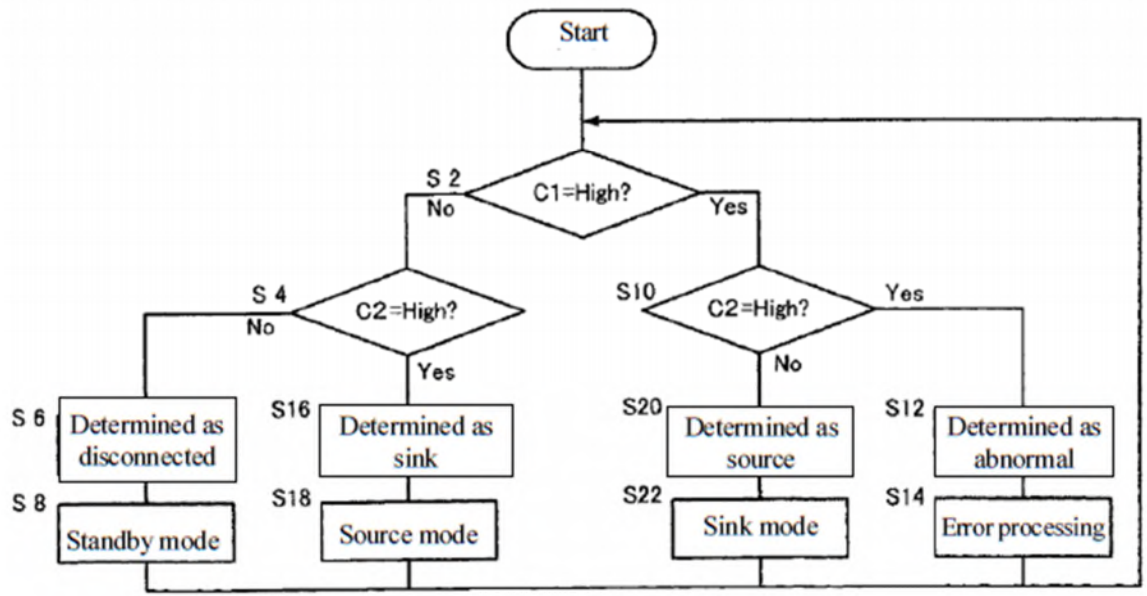
		Knight at Fig. 1.  **FIG. 2** Knight at Fig. 2.

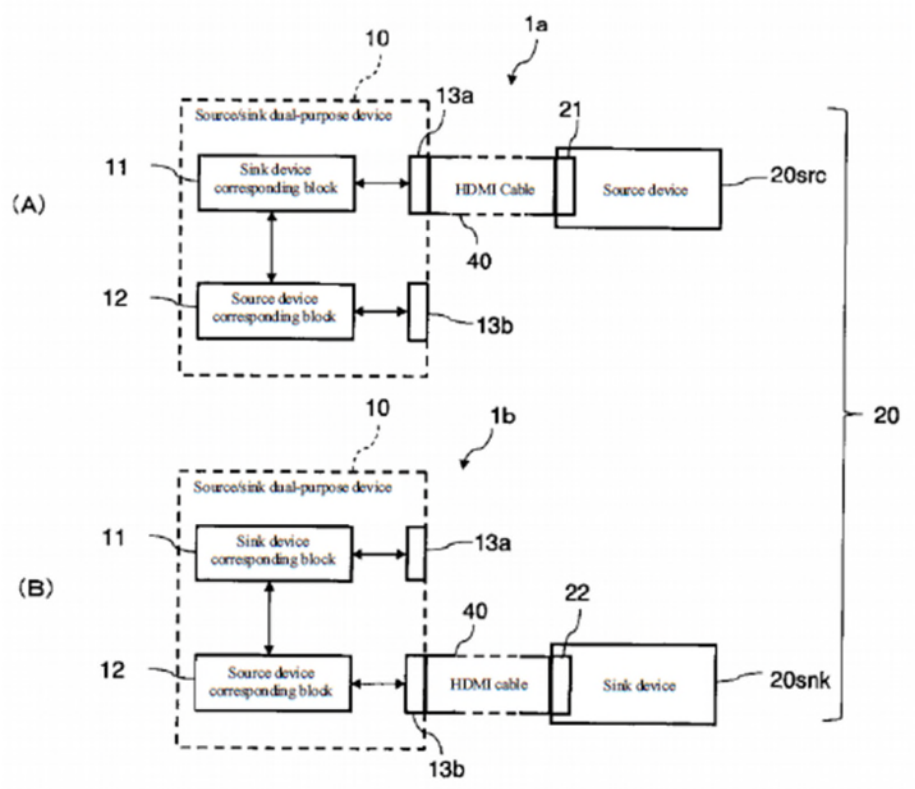
		It would have been obvious to a POSA that, once connected, the device of Iwamoto could default to either sink or source depending on the nature of the device and whether it is more likely to be connected as a sink or source.
1(b)	detecting with control circuitry of the first AV device, a coupling between the first AV device and a second AV device;	Iwamoto discloses and/or renders obvious this limitation. *See, e.g.*: "FIG. 1 illustrates a configuration of the source/sink dual-purpose device according to an embodiment of the present invention. The source/sink dual-purpose device 100 includes a connector 110, a power supply block 120, a hot plug block 130, a DCC block 140, a TDMS block 150, a voltage line monitor 160, a TDMS line monitor 170, and an HDMI attribute switching processing unit 180." Iwamoto at [0028]. "The connector 110 conforms to the HDMI standard and is exclusively connected to either one of another source device 20src (FIG. 5) and a sink device 20snk (FIG. 5) conforming to the HDMI standard via the HDMI cable 200. That is, the connector 110 is shared by the source device 20src and the sink device 20snk. The HDMI cable 200 includes a plurality of lines for transmitting signals and data. Typical lines include a CEC line, a hot plug line, a DDC line, and an HDMC line." Iwamoto at [0029]. "The source/sink dual-purpose device 100 can function as a source device conforming to the HDMI standard, via a power source output unit 122, a hot plug input unit 132, a DDC output unit 142, a TDMS output unit 152, and a TMDS signal processing unit 154. Conversely, the source/sink dual-purpose device 100 can function as a sink device conforming to the HDMI standard, via a power input unit 123, a hot plug output unit 133, a DDC input unit 143, a TDMS input unit 153, and a TMDS signal processing unit 154." [Iwamoto at [0033]. "Next, two monitoring units 160 and 170 that monitor the connection state between the HDMI cable 200 and the external device 20 will be described. The power supply line monitor unit 160 repeatedly detects a voltage level VL1 of a power supply line 111 among a plurality of lines connected to the connector 110 at predetermined time intervals to generate a binary level signal (hereinafter, 'power supply line level') C1." Iwamoto at [0042]. "When the external device 40 to which the connector 110 is connected via the HDMI cable 200 is

		the source device 20src, the voltage level VL1 of the power source line 111 indicates a High level (5 V). In contrast, when the connected external device 40 is the sink device 20snk, is not connected, or is not operating due to not being energized despite being connected, the voltage level VL1 indicates a low level (0 V). The power supply line level C1 has a value of either High or Low corresponding to the level of the voltage level VL1." Iwamoto at [0043]. "The TDMS line monitor unit 170 repeatedly detects a voltage level VL2 of the TDMS line (specifically, a TDMS_CLK line) 114 included in the connector 110 at predetermined time intervals to generate a binary level signal (hereinafter, "TDMS line level") C2. When the connector 110 is connected to a sink device via the HDMI cable 200, the voltage level VL2 of the TDMS line 114 indicates a High level (3.3 V)." Iwamoto at [0044]. "In contrast, when the connector 110 is connected to a source device via the HDMI cable 200 or is not connected to another device, the voltage level VL2 indicates a low level (0 V). The TDMS line level C2 has a value of either High or Low corresponding to the level of the voltage level VL2." Iwamoto at [0045]. "Operation of the HDMI attribute switching processing unit 180 will be described below with reference to FIG. 2. The HDMI attribute switching processing unit 180 determines a function J of the external device connected to the connector 110 also used for connection between the source device and the sink device based on the power source line level C1 and the TDMS line level C2. Note that "function," in relation to the external device, refers to one of four states of 'disconnected,' 'abnormal,' 'sink,' and 'source.'" Iwamoto at [0046]. "State 1: The external device 20 is not connected to the source/sink dual-purpose device 100, or no current is applied despite being connected…. In state 1 (non-connection), the source/sink dual-purpose device 100 is set to a standby mode by processing in step S2 (No), step S4 (No), step S6, and step S8. Then, the source/sink dual-purpose device 100 waits for the external device 20 to be connected while repeating the process of the flowchart of FIG. 3." Iwamoto at [0072]-[0073].

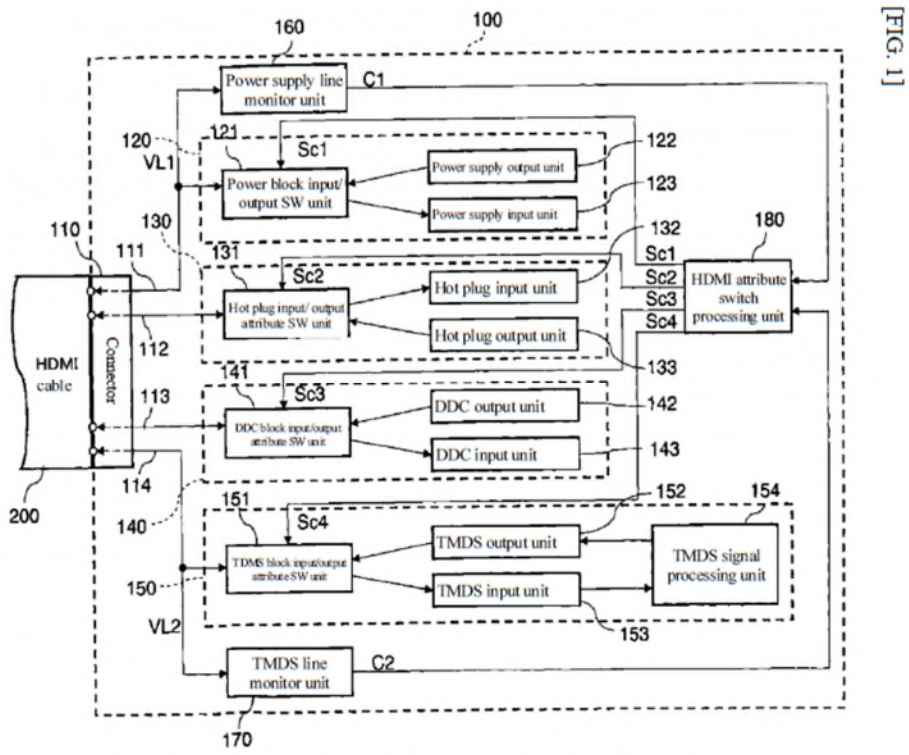
Exhibit D-7

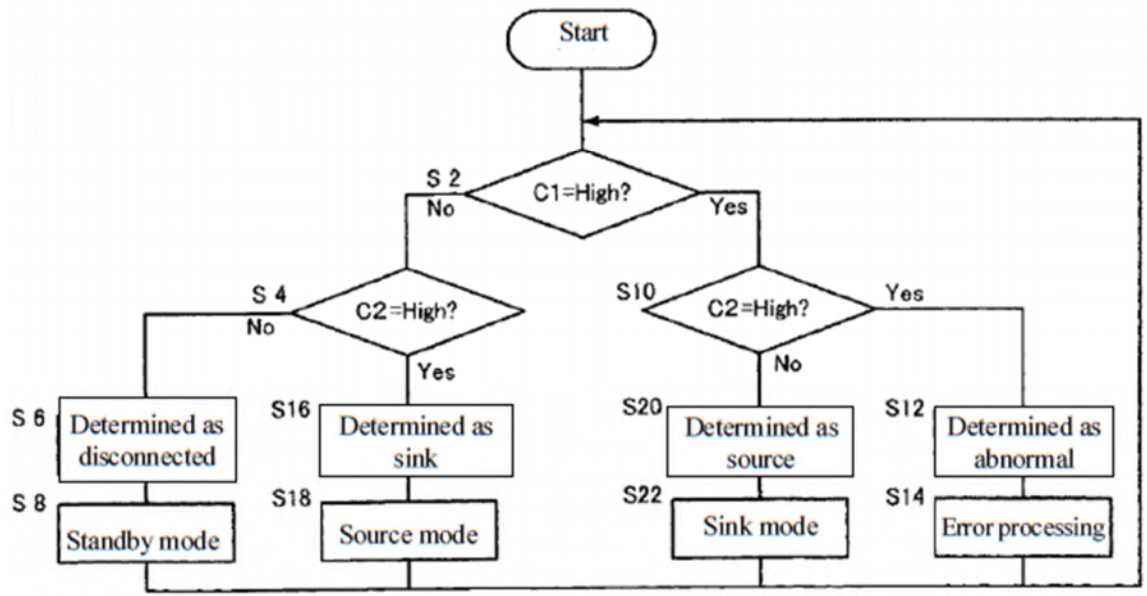
		 Iwamoto at Fig. 1.

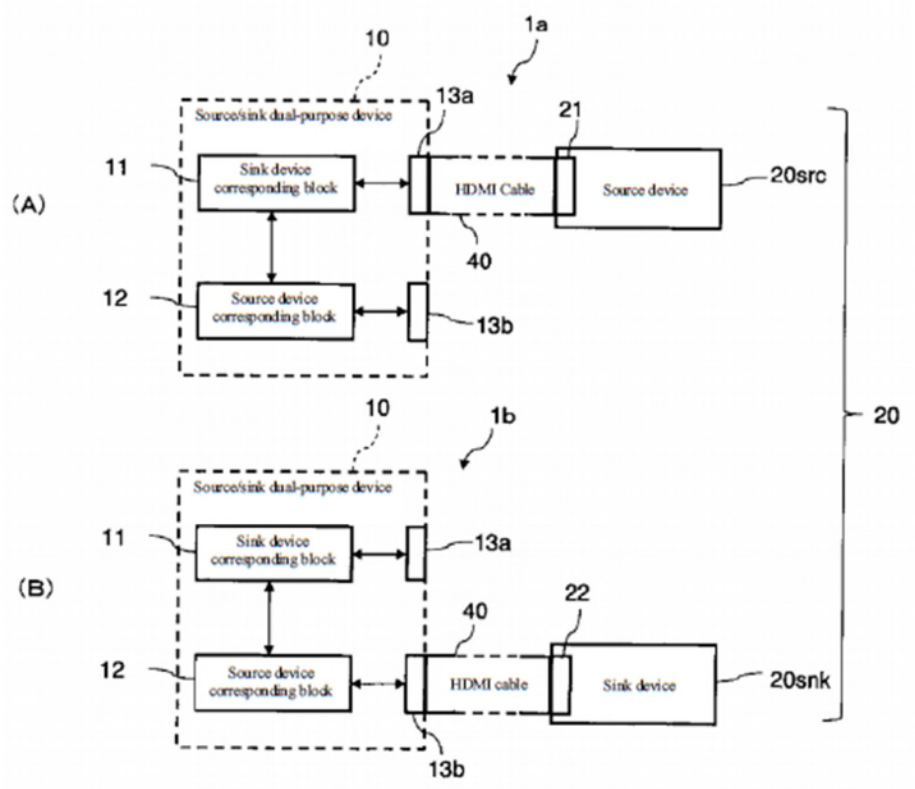
		 [FIG. 3] Iwamoto at Fig. 3.

		 Iwamoto at Fig. 5. To the extent that Plaintiff contends that Iwamoto does not explicitly or inherently disclose this element, or render obvious this element, this element is obvious in combination with one or more references and/or with the knowledge of a person of ordinary skill in the art, as set forth in Defendant's Invalidity Contentions.
1(c)	determining whether a first supply voltage is provided at a channel of a connector, the	Iwamoto discloses and/or renders obvious this limitation. *See, e.g.*: "Next, two monitoring units 160 and 170 that monitor the connection state between the HDMI cable 200 and the external device 20 will be described. The power supply line monitor unit 160 repeatedly

	connector coupling the first AV device and the second AV device;	detects a voltage level VL1 of a power supply line 111 among a plurality of lines connected to the connector 110 at predetermined time intervals to generate a binary level signal (hereinafter, 'power supply line level') C1." Iwamoto at [0042]. "When the external device 40 to which the connector 110 is connected via the HDMI cable 200 is the source device 20src, the voltage level VL1 of the power source line 111 indicates a High level (5 V). In contrast, when the connected external device 40 is the sink device 20snk, is not connected, or is not operating due to not being energized despite being connected, the voltage level VL1 indicates a low level (0 V). The power supply line level C1 has a value of either High or Low corresponding to the level of the voltage level VL1." Iwamoto at [0043]. "The TDMS line monitor unit 170 repeatedly detects a voltage level VL2 of the TDMS line (specifically, a TDMS_CLK line) 114 included in the connector 110 at predetermined time intervals to generate a binary level signal (hereinafter, "TDMS line level") C2. When the connector 110 is connected to a sink device via the HDMI cable 200, the voltage level VL2 of the TDMS line 114 indicates a High level (3.3 V)." Iwamoto at [0044]. "In contrast, when the connector 110 is connected to a source device via the HDMI cable 200 or is not connected to another device, the voltage level VL2 indicates a low level (0 V). The TDMS line level C2 has a value of either High or Low corresponding to the level of the voltage level VL2." Iwamoto at [0045]. "Operation of the HDMI attribute switching processing unit 180 will be described below with reference to FIG. 2. The HDMI attribute switching processing unit 180 determines a function J of the external device connected to the connector 110 also used for connection between the source device and the sink device based on the power source line level C1 and the TDMS line level C2. Note that "function," in relation to the external device, refers to one of four states of 'disconnected,' 'abnormal,' 'sink,' and 'source.'" Iwamoto at [0046]. "State 1: The external device 20 is not connected to the source/sink dual-purpose device 100, or no current is applied despite being connected…. In state 1 (non-connection), the source/sink dual-purpose device 100 is set to a standby mode by processing in step S2 (No), step S4 (No), step S6,

		and step S8. Then, the source/sink dual-purpose device 100 waits for the external device 20 to be connected while repeating the process of the flowchart of FIG. 3." Iwamoto at [0072]-[0073].  [FIG. 1] Iwamoto at Fig. 1.

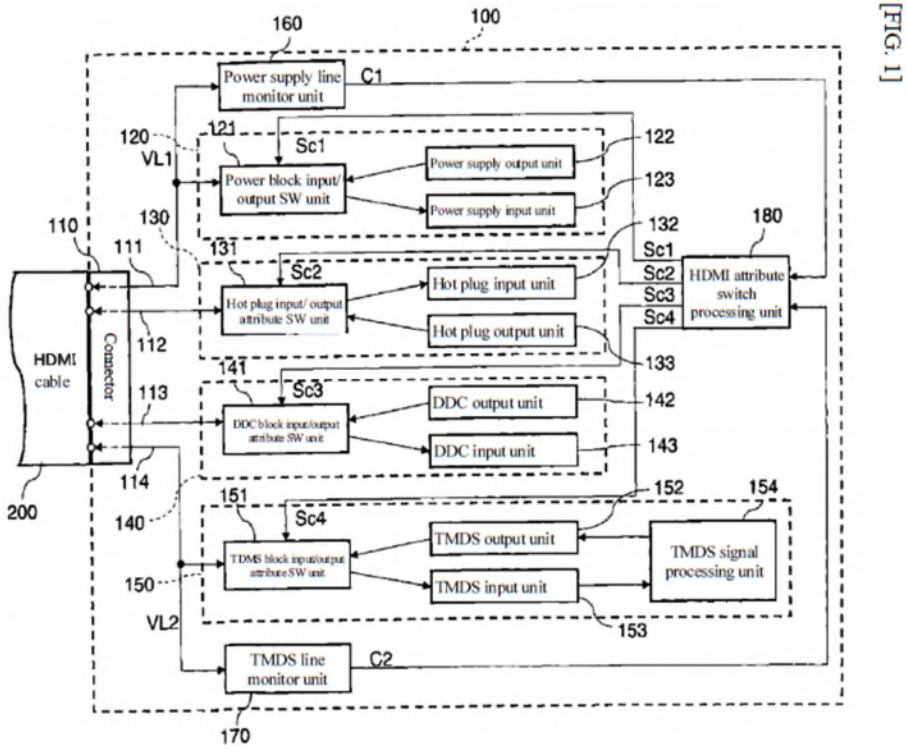
		 [FIG. 3] Iwamoto at Fig. 3.

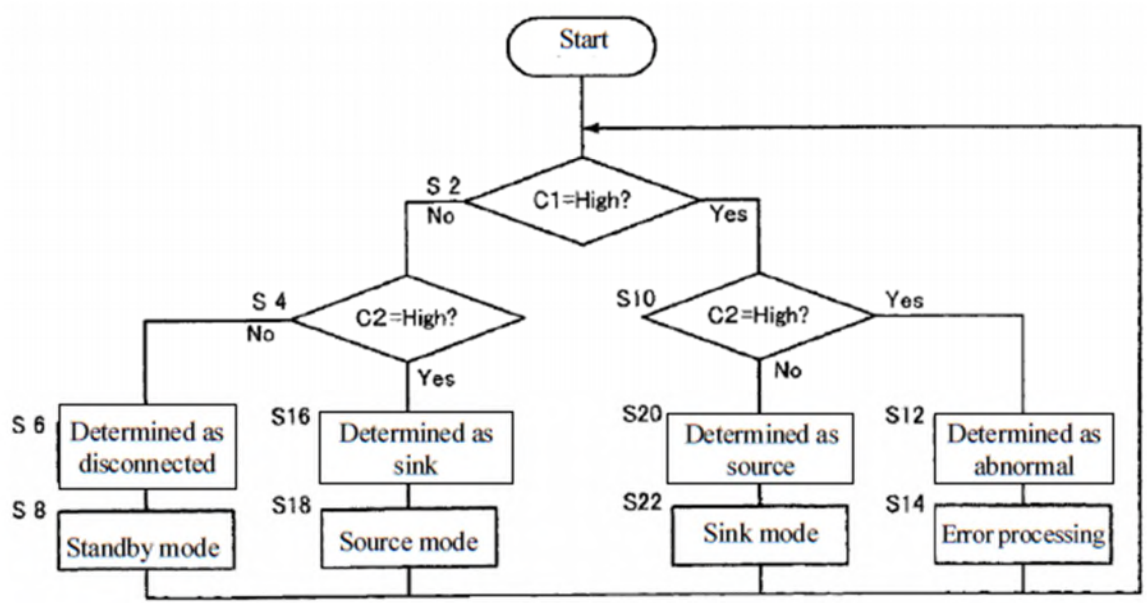
		 Iwamoto at Fig. 5. To the extent that Plaintiff contends that Iwamoto does not explicitly or inherently disclose this element, or render obvious this element, this element is obvious in combination with one or more references and/or with the knowledge of a person of ordinary skill in the art, as set forth in Defendant's Invalidity Contentions.
1(d)	in response to determining that the first supply voltage is	Iwamoto discloses and/or renders obvious this limitation. *See, e.g.*: "Next, two monitoring units 160 and 170 that monitor the connection state between the HDMI cable

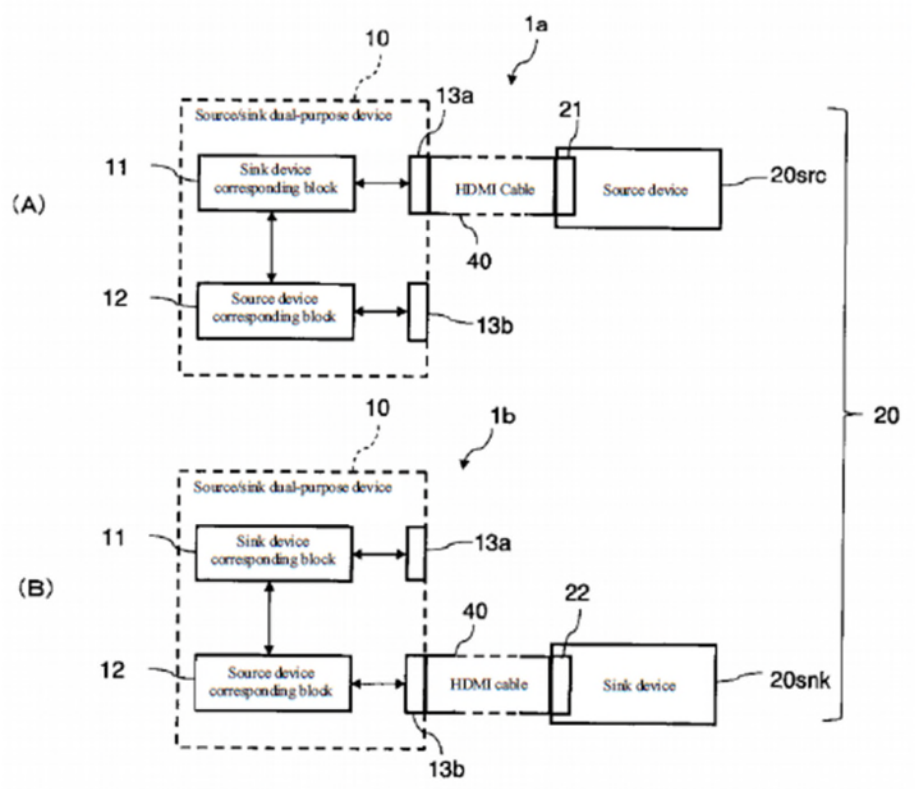
	provided at the channel of the connector, configuring communication logic of the first AV device to continue operating the first AV device in the AV sink operation mode;	200 and the external device 20 will be described. The power supply line monitor unit 160 repeatedly detects a voltage level VL1 of a power supply line 111 among a plurality of lines connected to the connector 110 at predetermined time intervals to generate a binary level signal (hereinafter, 'power supply line level') C1." Iwamoto at [0042]. "When the external device 40 to which the connector 110 is connected via the HDMI cable 200 is the source device 20src, the voltage level VL1 of the power source line 111 indicates a High level (5 V). In contrast, when the connected external device 40 is the sink device 20snk, is not connected, or is not operating due to not being energized despite being connected, the voltage level VL1 indicates a low level (0 V). The power supply line level C1 has a value of either High or Low corresponding to the level of the voltage level VL1." Iwamoto at [0043]. "The TDMS line monitor unit 170 repeatedly detects a voltage level VL2 of the TDMS line (specifically, a TDMS_CLK line) 114 included in the connector 110 at predetermined time intervals to generate a binary level signal (hereinafter, "TDMS line level") C2. When the connector 110 is connected to a sink device via the HDMI cable 200, the voltage level VL2 of the TDMS line 114 indicates a High level (3.3 V)." Iwamoto at [0044]. "In contrast, when the connector 110 is connected to a source device via the HDMI cable 200 or is not connected to another device, the voltage level VL2 indicates a low level (0 V). The TDMS line level C2 has a value of either High or Low corresponding to the level of the voltage level VL2." Iwamoto at [0045]. "Operation of the HDMI attribute switching processing unit 180 will be described below with reference to FIG. 2. The HDMI attribute switching processing unit 180 determines a function J of the external device connected to the connector 110 also used for connection between the source device and the sink device based on the power source line level C1 and the TDMS line level C2. Note that "function," in relation to the external device, refers to one of four states of 'disconnected,' 'abnormal,' 'sink,' and 'source.'" Iwamoto at [0046]. "State 1: The external device 20 is not connected to the source/sink dual-purpose device 100, or no current is applied despite being connected. State 2: The connected external device 20 is abnormal.

		State 3: A normal sink device 20snk is connected. State 4: A normal source device 20src is connected. State 5: The connection with the external device 20 of state 2 is cut off. State 6: The connection with the external device 20 of state 3 is cut off. State 7: The connection with the external device 20 of state 4 is cut off. State 8: The connection with the external equipment of state 5, state 6, and state 7 is restored." Iwamoto at [0072]. "In state 1 (non-connection), the source/sink dual-purpose device 100 is set to a standby mode by processing in step S2 (No), step S4 (No), step S6, and step S8. Then, the source/sink dual-purpose device 100 waits for the external device 20 to be connected while repeating the process of the flowchart of FIG. 3." Iwamoto at [0073]. "In state 2 (abnormal), the source/sink dual-purpose device 100 is set to the error processing mode by processing in step S2 (Yes), step S10 (Yes), step S12, and step S14. Then, the source/sink dual-purpose device 100 waits for the abnormality of the external device 20 to recover while repeating the process of the flowchart of FIG. 3." Iwamoto at [0074]. "In state 3 (sink), the source/sink dual-purpose device 100 is set to the source mode by the processing in step S2 (No), step S4 (Yes), step S16, and step S18. Then, the source/sink dual-purpose device 100 monitors the state of the external device 20 while repeating the process of the flowchart of FIG. 3. Then, when the state of the external device 20 changes, the operating mode of the device itself is reset in accordance with the change." Iwamoto at [0075]. "In state 4 (source), the source/sink dual-purpose device 100 is set to the sink mode by the processing in step S2 (Yes), step S10 (No), step S20, and step S22. Then, the source/sink dual-purpose device 100 monitors the state of the external device 20 while repeating the process of the flowchart of FIG. 3. Then, when the state of the external device 20 changes, the operating mode of the device itself is reset in accordance with the change." Iwamoto at [0076]. "In state 5, state 6, and state 7, the processing of state 1 described above is executed when the connection with the external device 20 in each state is cut off." Iwamoto at [0077].

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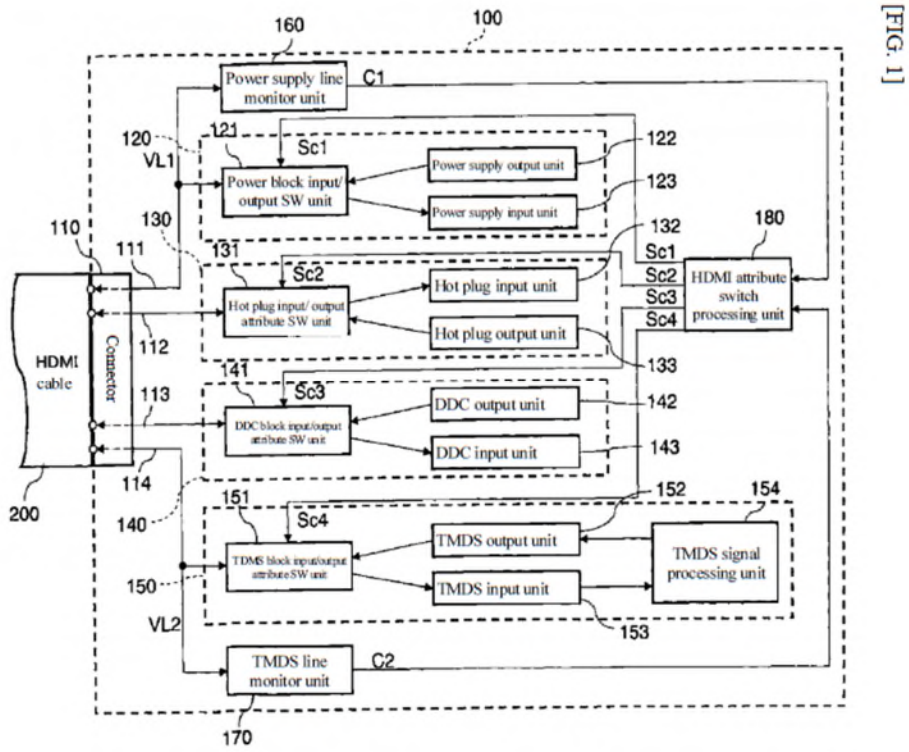
		"In state 8, when the connection with the external device 20 in each state is restored, processing of any of state 2, state 3, or state 4 is executed according to the state of the external device 20." Iwamoto at [0078]. "As described above, it is possible to use a single HDMI connector and automatically switch the attributes of the source device and the sink device without user operation. As a result, it is possible to reduce the cost and size of the device by reducing the number of required components, and to reduce the time and effort of the user to change the HDMI attribute (sink device/source device)." Iwamoto at [0079].  Iwamoto at Fig. 1.

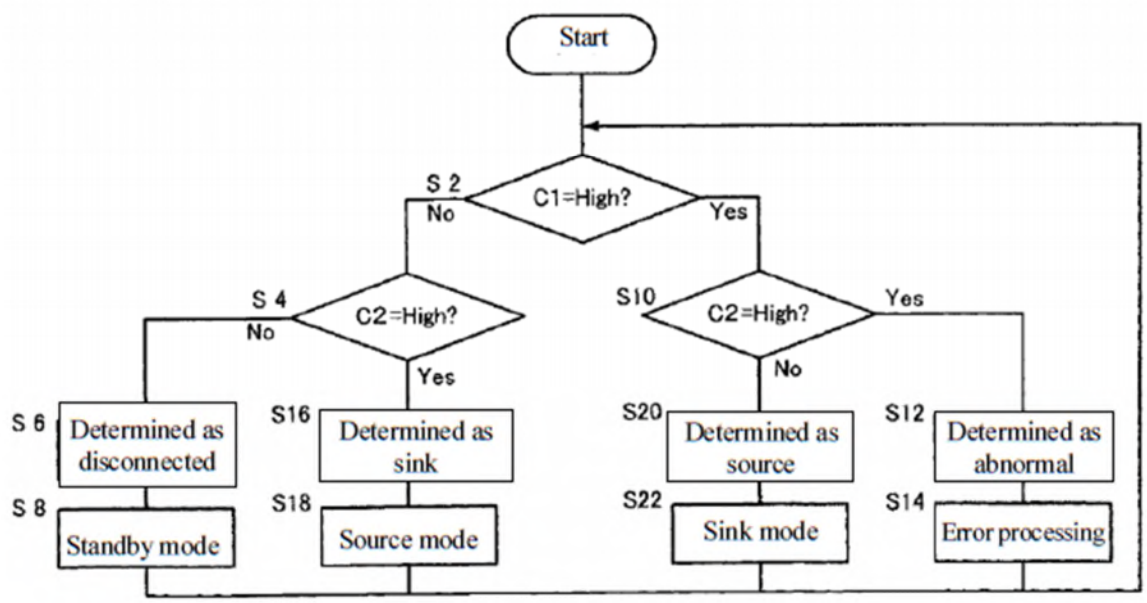
		 [FIG. 3] Iwamoto at Fig. 3.

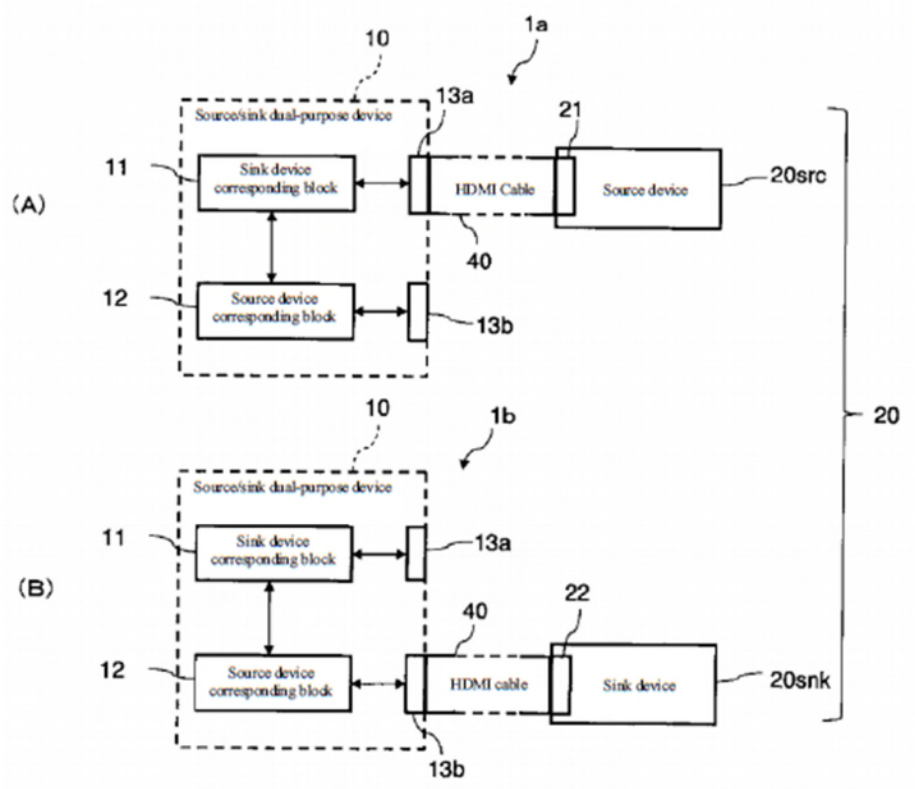
		 Iwamoto at Fig. 5. To the extent that Plaintiff contends that Iwamoto does not explicitly or inherently disclose this element, or render obvious this element, this element is obvious in combination with one or more references and/or with the knowledge of a person of ordinary skill in the art, as set forth in Defendant's Invalidity Contentions.
1(e)	when operating the first AV device in the AV sink operation mode, receiving AV	Iwamoto discloses and/or renders obvious this limitation. *See, e.g.*: "In contrast, when the source/sink dual-purpose device 100 realizes a sink device function, the power input unit 123 supplies power to the hot plug output unit 133, the DDC input unit 143, and

	data provided to the first AV device via the connector and receiving power from the first supply voltage provided to the first AV device at the channel of the connector;	the TDMS input unit 152. By providing the power output unit 122 and the power input unit 123 separately, backflow of current from the sink side to the source side can be prevented." Iwamoto at [0036]. "Thus, in the source/sink dual-purpose device 10 configured as the television with built-in DVD player, a video signal played back by the DVD player is normally displayed as a video by a television display, and an audio signal is output as audio from a speaker of the television. However, there are times when a user would like to view the video on a projector without viewing the video on the television display. Furthermore, it may be desired that the video and audio captured by the digital video camera be played back by a display and a speaker of the source/sink dual-purpose device 10." Iwamoto at [0005]. "In order to respond to such desires, it is required to receive a signal from an external source device to the sink device corresponding block 11 provided in the source/sink dual-purpose device 10 and to supply a signal from the source device corresponding block 12 to the external sink device." Iwamoto at [0006]. "The present invention has been configured in view of such conventional problems, and an object thereof is to provide a source/sink dual-purpose device that can detect a functional attribute of an HDMI device connected to a single connector. To provide a source/sink dual-purpose device capable of automatically switching its own functions according to the detected function attribute of the device." Iwamoto at [0016]. "In a memory (not illustrated) of the DDC input unit 143, when the source/sink dual-purpose device 100 functions as a sink, a displayable video format is stored as the EDID. The EDID stored in the memory is read out by access from the source device 20src when the source/sink dual-purpose device 100 is connected to the source device 20src." Iwamoto at [0039]. "The TDMS input unit 153 receives the video data and the TDMS system audio data transmitted from the source device 20src connected to the HDMI cable 200 when the source/sink dual-purpose device 100 functions as the sink. The video data and the audio data are transferred from the TDMS input unit 153 to the TMDS signal processing unit 154 and converted into video data and audio data before TMDS processing is performed by the TDMS signal processing unit 154. The problem of

		impedance mismatch of the TDMS line 114 can be eliminated by providing the TDMS output unit 152 and the TDMS input unit 153 separately." Iwamoto at [0041]. "Next, two monitoring units 160 and 170 that monitor the connection state between the HDMI cable 200 and the external device 20 will be described. The power supply line monitor unit 160 repeatedly detects a voltage level VL1 of a power supply line 111 among a plurality of lines connected to the connector 110 at predetermined time intervals to generate a binary level signal (hereinafter, 'power supply line level') C1." Iwamoto at [0042]. "When the external device 40 to which the connector 110 is connected via the HDMI cable 200 is the source device 20src, the voltage level VL1 of the power source line 111 indicates a High level (5 V). In contrast, when the connected external device 40 is the sink device 20snk, is not connected, or is not operating due to not being energized despite being connected, the voltage level VL1 indicates a low level (0 V). The power supply line level C1 has a value of either High or Low corresponding to the level of the voltage level VL1." Iwamoto at [0043]. "The TDMS line monitor unit 170 repeatedly detects a voltage level VL2 of the TDMS line (specifically, a TDMS_CLK line) 114 included in the connector 110 at predetermined time intervals to generate a binary level signal (hereinafter, "TDMS line level") C2. When the connector 110 is connected to a sink device via the HDMI cable 200, the voltage level VL2 of the TDMS line 114 indicates a High level (3.3 V)." Iwamoto at [0044]. "In contrast, when the connector 110 is connected to a source device via the HDMI cable 200 or is not connected to another device, the voltage level VL2 indicates a low level (0 V). The TDMS line level C2 has a value of either High or Low corresponding to the level of the voltage level VL2." Iwamoto at [0045]. "Operation of the HDMI attribute switching processing unit 180 will be described below with reference to FIG. 2. The HDMI attribute switching processing unit 180 determines a function J of the external device connected to the connector 110 also used for connection between the source device and the sink device based on the power source line level C1 and the TDMS line level C2. Note that "function," in relation to the external device, refers to one of four states of 'disconnected,' 'abnormal,' 'sink,' and 'source.'" Iwamoto at [0046].

		"In state 4 (source), the source/sink dual-purpose device 100 is set to the sink mode by the processing in step S2 (Yes), step S10 (No), step S20, and step S22. Then, the source/sink dual-purpose device 100 monitors the state of the external device 20 while repeating the process of the flowchart of FIG. 3. Then, when the state of the external device 20 changes, the operating mode of the device itself is reset in accordance with the change." Iwamoto at [0076].  Iwamoto at Fig. 1.

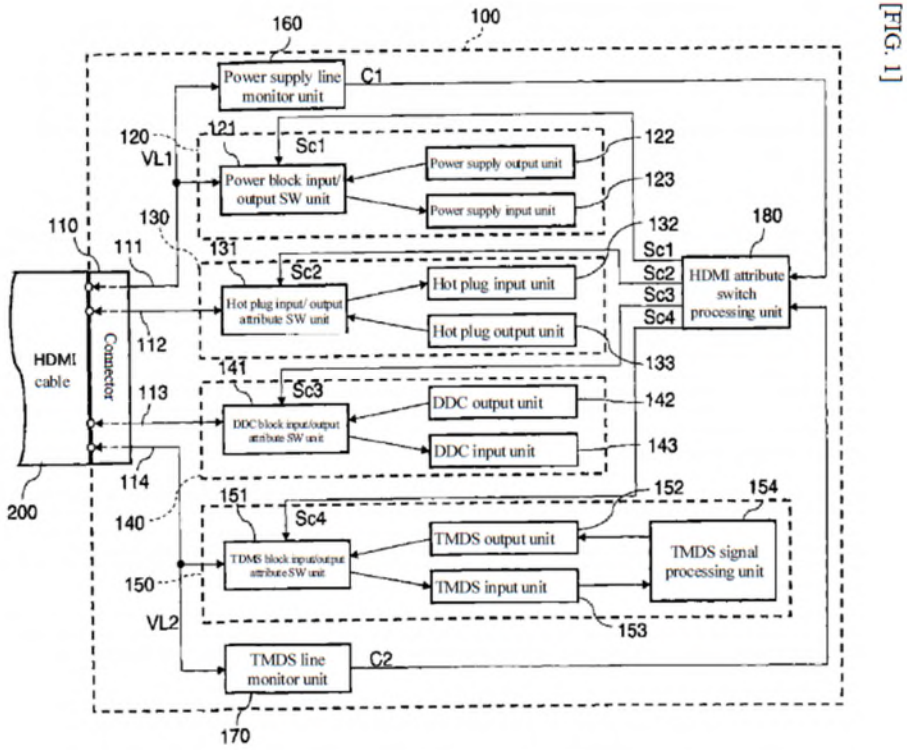
		 [FIG. 3] Iwamoto at Fig. 3.

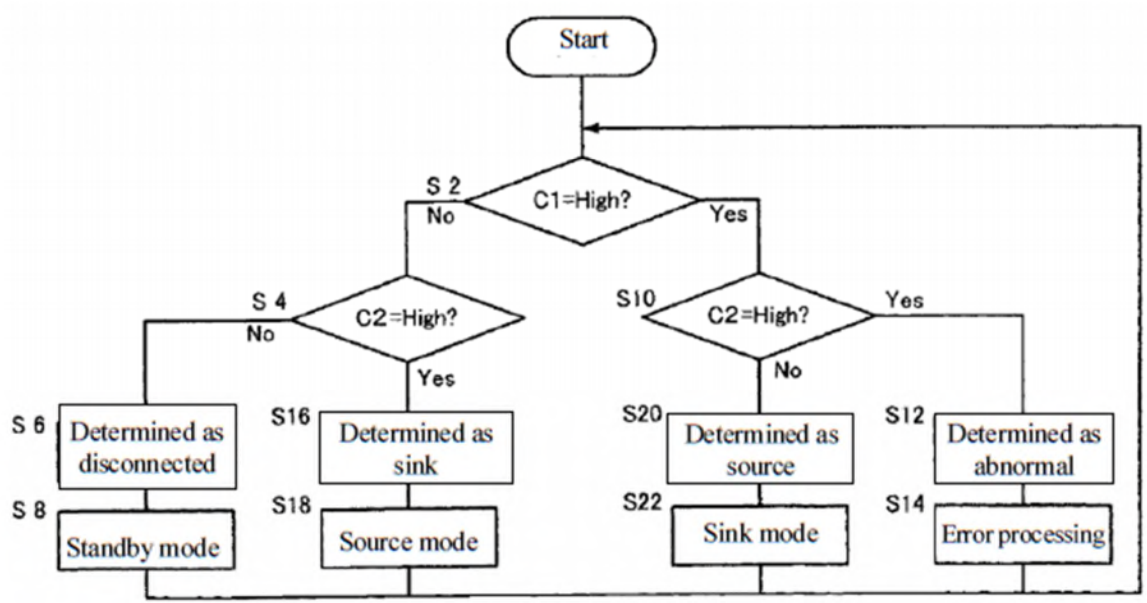
		 Iwamoto at Fig. 5. To the extent that Plaintiff contends that Iwamoto does not explicitly or inherently disclose this element, or render obvious this element, this element is obvious in combination with one or more references and/or with the knowledge of a person of ordinary skill in the art, as set forth in Defendant's Invalidity Contentions.
1(f)	in response to determining that the first supply voltage is not provided at the	Iwamoto discloses and/or renders obvious this limitation. *See, e.g.*: "Next, two monitoring units 160 and 170 that monitor the connection state between the HDMI cable 200 and the external device 20 will be described. The power supply line monitor unit 160 repeatedly

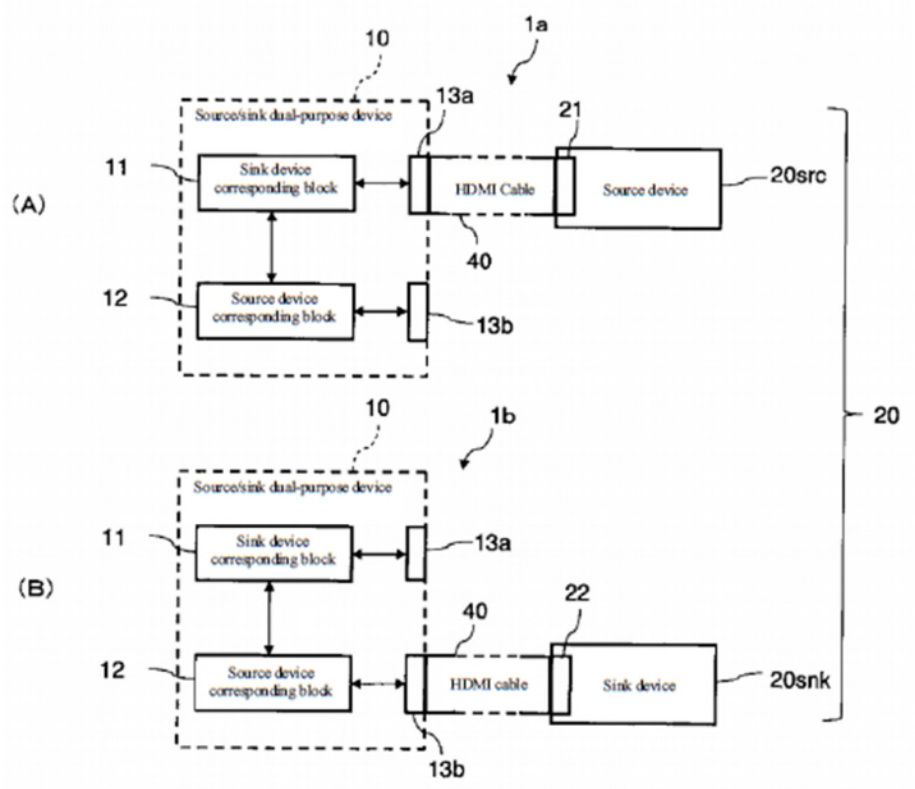
	channel of the connector, configuring the communication logic of the first AV device to transition the first AV device from the AV sink operation mode to an AV source operation mode; and	detects a voltage level VL1 of a power supply line 111 among a plurality of lines connected to the connector 110 at predetermined time intervals to generate a binary level signal (hereinafter, 'power supply line level') C1." Iwamoto at [0042]. "When the external device 40 to which the connector 110 is connected via the HDMI cable 200 is the source device 20src, the voltage level VL1 of the power source line 111 indicates a High level (5 V). In contrast, when the connected external device 40 is the sink device 20snk, is not connected, or is not operating due to not being energized despite being connected, the voltage level VL1 indicates a low level (0 V). The power supply line level C1 has a value of either High or Low corresponding to the level of the voltage level VL1." Iwamoto at [0043]. "The TDMS line monitor unit 170 repeatedly detects a voltage level VL2 of the TDMS line (specifically, a TDMS_CLK line) 114 included in the connector 110 at predetermined time intervals to generate a binary level signal (hereinafter, "TDMS line level") C2. When the connector 110 is connected to a sink device via the HDMI cable 200, the voltage level VL2 of the TDMS line 114 indicates a High level (3.3 V)." Iwamoto at [0044]. "In contrast, when the connector 110 is connected to a source device via the HDMI cable 200 or is not connected to another device, the voltage level VL2 indicates a low level (0 V). The TDMS line level C2 has a value of either High or Low corresponding to the level of the voltage level VL2." Iwamoto at [0045]. "Operation of the HDMI attribute switching processing unit 180 will be described below with reference to FIG. 2. The HDMI attribute switching processing unit 180 determines a function J of the external device connected to the connector 110 also used for connection between the source device and the sink device based on the power source line level C1 and the TDMS line level C2. Note that "function," in relation to the external device, refers to one of four states of 'disconnected,' 'abnormal,' 'sink,' and 'source.'" Iwamoto at [0046]. "State 1: The external device 20 is not connected to the source/sink dual-purpose device 100, or no current is applied despite being connected. State 2: The connected external device 20 is abnormal. State 3: A normal sink device 20snk is connected.

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		State 4: A normal source device 20src is connected. State 5: The connection with the external device 20 of state 2 is cut off. State 6: The connection with the external device 20 of state 3 is cut off. State 7: The connection with the external device 20 of state 4 is cut off. State 8: The connection with the external equipment of state 5, state 6, and state 7 is restored." Iwamoto at [0072]. "In state 1 (non-connection), the source/sink dual-purpose device 100 is set to a standby mode by processing in step S2 (No), step S4 (No), step S6, and step S8. Then, the source/sink dual-purpose device 100 waits for the external device 20 to be connected while repeating the process of the flowchart of FIG. 3." Iwamoto at [0073]. "In state 2 (abnormal), the source/sink dual-purpose device 100 is set to the error processing mode by processing in step S2 (Yes), step S10 (Yes), step S12, and step S14. Then, the source/sink dual-purpose device 100 waits for the abnormality of the external device 20 to recover while repeating the process of the flowchart of FIG. 3." Iwamoto at [0074]. "In state 3 (sink), the source/sink dual-purpose device 100 is set to the source mode by the processing in step S2 (No), step S4 (Yes), step S16, and step S18. Then, the source/sink dual-purpose device 100 monitors the state of the external device 20 while repeating the process of the flowchart of FIG. 3. Then, when the state of the external device 20 changes, the operating mode of the device itself is reset in accordance with the change." Iwamoto at [0075]. "In state 4 (source), the source/sink dual-purpose device 100 is set to the sink mode by the processing in step S2 (Yes), step S10 (No), step S20, and step S22. Then, the source/sink dual-purpose device 100 monitors the state of the external device 20 while repeating the process of the flowchart of FIG. 3. Then, when the state of the external device 20 changes, the operating mode of the device itself is reset in accordance with the change." Iwamoto at [0076]. "In state 5, state 6, and state 7, the processing of state 1 described above is executed when the connection with the external device 20 in each state is cut off." Iwamoto at [0077].

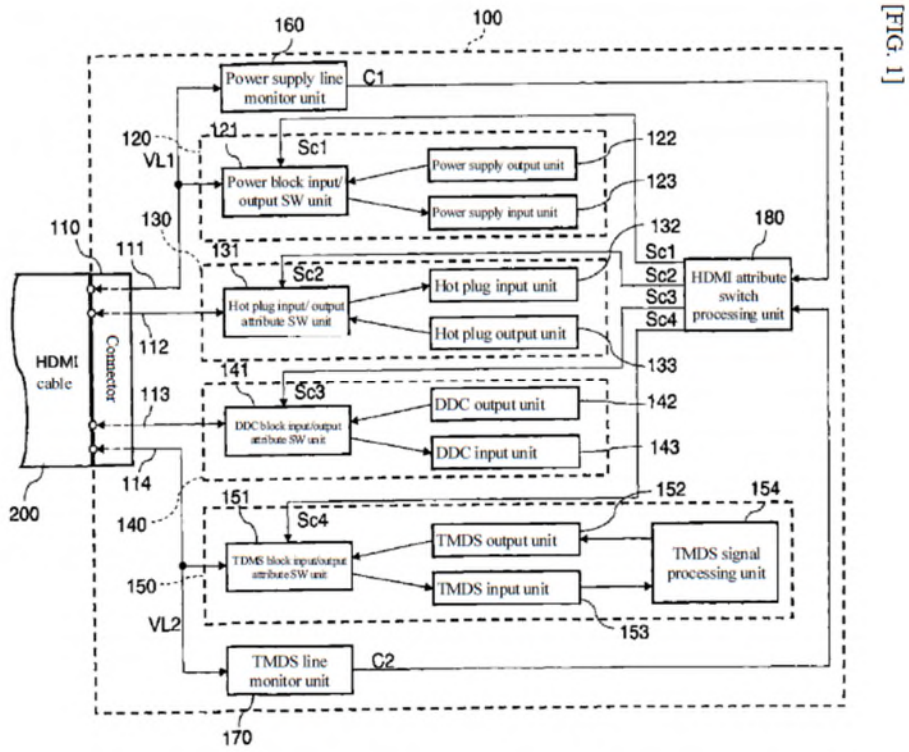
		"In state 8, when the connection with the external device 20 in each state is restored, processing of any of state 2, state 3, or state 4 is executed according to the state of the external device 20." Iwamoto at [0078]. "As described above, it is possible to use a single HDMI connector and automatically switch the attributes of the source device and the sink device without user operation. As a result, it is possible to reduce the cost and size of the device by reducing the number of required components, and to reduce the time and effort of the user to change the HDMI attribute (sink device/source device)." Iwamoto at [0079].  [FIG. 1] Iwamoto at Fig. 1.

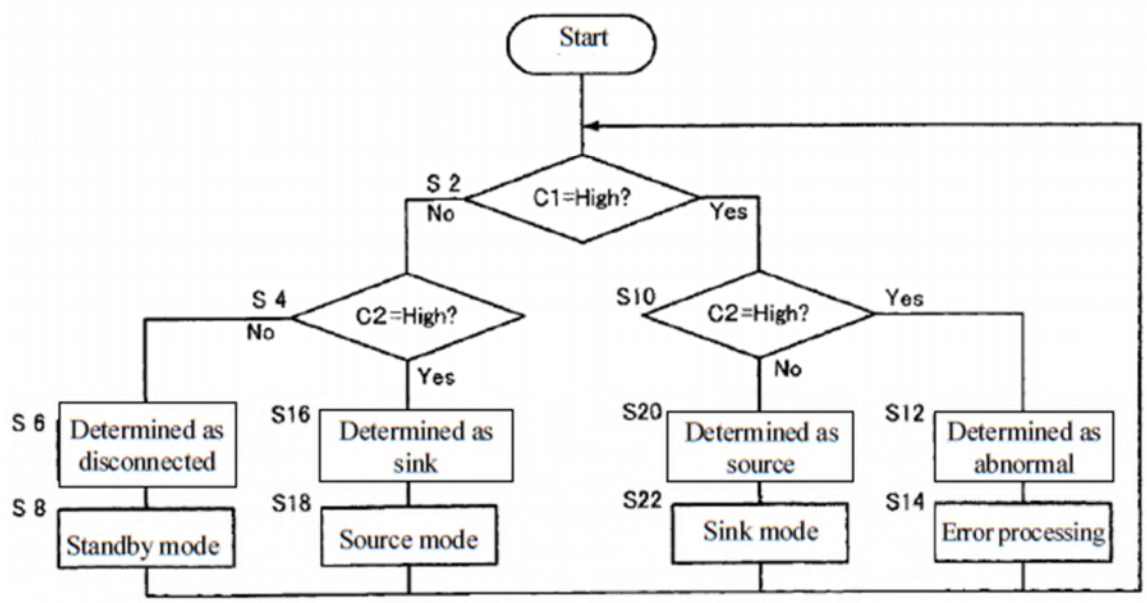
		 [FIG. 3] Iwamoto at Fig. 3.

		 Iwamoto at Fig. 5. To the extent that Plaintiff contends that Iwamoto does not explicitly or inherently disclose this element, or render obvious this element, this element is obvious in combination with one or more references and/or with the knowledge of a person of ordinary skill in the art, as set forth in Defendant's Invalidity Contentions.
1(g)	when operating the first AV device in the AV source operation mode, sending AV	Iwamoto discloses and/or renders obvious this limitation. *See, e.g.*: "In contrast, when the source/sink dual-purpose device 100 realizes a sink device function, the power input unit 123 supplies power to the hot plug output unit 133, the DDC input unit 143, and

	data via the connector and providing a second supply voltage at the channel of the connector.	the TDMS input unit 152. By providing the power output unit 122 and the power input unit 123 separately, backflow of current from the sink side to the source side can be prevented." Iwamoto at [0036]. "Thus, in the source/sink dual-purpose device 10 configured as the television with built-in DVD player, a video signal played back by the DVD player is normally displayed as a video by a television display, and an audio signal is output as audio from a speaker of the television. However, there are times when a user would like to view the video on a projector without viewing the video on the television display. Furthermore, it may be desired that the video and audio captured by the digital video camera be played back by a display and a speaker of the source/sink dual-purpose device 10." Iwamoto at [0005]. "In order to respond to such desires, it is required to receive a signal from an external source device to the sink device corresponding block 11 provided in the source/sink dual-purpose device 10 and to supply a signal from the source device corresponding block 12 to the external sink device." Iwamoto at [0006]. "The present invention has been configured in view of such conventional problems, and an object thereof is to provide a source/sink dual-purpose device that can detect a functional attribute of an HDMI device connected to a single connector. To provide a source/sink dual-purpose device capable of automatically switching its own functions according to the detected function attribute of the device." Iwamoto at [0016]. "In a memory (not illustrated) of the DDC input unit 143, when the source/sink dual-purpose device 100 functions as a sink, a displayable video format is stored as the EDID. The EDID stored in the memory is read out by access from the source device 20src when the source/sink dual-purpose device 100 is connected to the source device 20src." Iwamoto at [0039]. "The TDMS input unit 153 receives the video data and the TDMS system audio data transmitted from the source device 20src connected to the HDMI cable 200 when the source/sink dual-purpose device 100 functions as the sink. The video data and the audio data are transferred from the TDMS input unit 153 to the TMDS signal processing unit 154 and converted into video data and audio data before TMDS processing is performed by the TDMS signal processing unit 154. The problem of

		impedance mismatch of the TDMS line 114 can be eliminated by providing the TDMS output unit 152 and the TDMS input unit 153 separately." Iwamoto at [0041]. "Next, two monitoring units 160 and 170 that monitor the connection state between the HDMI cable 200 and the external device 20 will be described. The power supply line monitor unit 160 repeatedly detects a voltage level VL1 of a power supply line 111 among a plurality of lines connected to the connector 110 at predetermined time intervals to generate a binary level signal (hereinafter, 'power supply line level') C1." Iwamoto at [0042]. "When the external device 40 to which the connector 110 is connected via the HDMI cable 200 is the source device 20src, the voltage level VL1 of the power source line 111 indicates a High level (5 V). In contrast, when the connected external device 40 is the sink device 20snk, is not connected, or is not operating due to not being energized despite being connected, the voltage level VL1 indicates a low level (0 V). The power supply line level C1 has a value of either High or Low corresponding to the level of the voltage level VL1." Iwamoto at [0043]. "The TDMS line monitor unit 170 repeatedly detects a voltage level VL2 of the TDMS line (specifically, a TDMS_CLK line) 114 included in the connector 110 at predetermined time intervals to generate a binary level signal (hereinafter, "TDMS line level") C2. When the connector 110 is connected to a sink device via the HDMI cable 200, the voltage level VL2 of the TDMS line 114 indicates a High level (3.3 V)." Iwamoto at [0044]. "In contrast, when the connector 110 is connected to a source device via the HDMI cable 200 or is not connected to another device, the voltage level VL2 indicates a low level (0 V). The TDMS line level C2 has a value of either High or Low corresponding to the level of the voltage level VL2." Iwamoto at [0045]. "Operation of the HDMI attribute switching processing unit 180 will be described below with reference to FIG. 2. The HDMI attribute switching processing unit 180 determines a function J of the external device connected to the connector 110 also used for connection between the source device and the sink device based on the power source line level C1 and the TDMS line level C2. Note that "function," in relation to the external device, refers to one of four states of 'disconnected,' 'abnormal,' 'sink,' and 'source.'" Iwamoto at [0046].

		"In state 3 (sink), the source/sink dual-purpose device 100 is set to the source mode by the processing in step S2 (No), step S4 (Yes), step S16, and step S18. Then, the source/sink dual-purpose device 100 monitors the state of the external device 20 while repeating the process of the flowchart of FIG. 3. Then, when the state of the external device 20 changes, the operating mode of the device itself is reset in accordance with the change." Iwamoto at [0076].  [FIG. 1] Iwamoto at Fig. 1.

		 [FIG. 3] Iwamoto at Fig. 3.

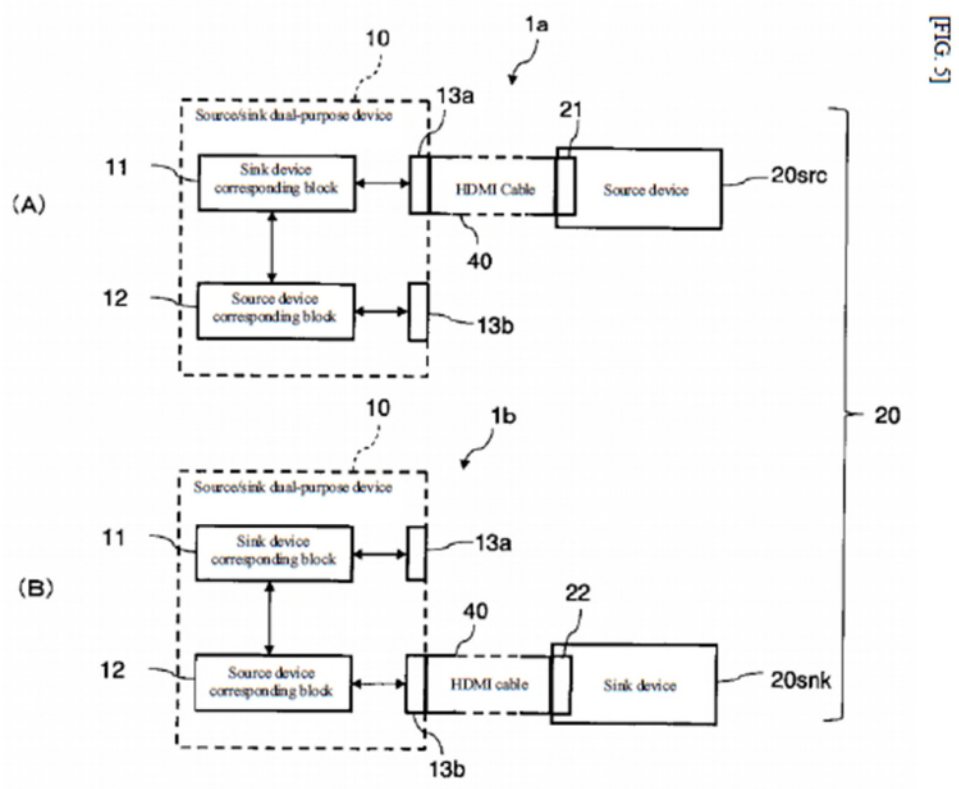
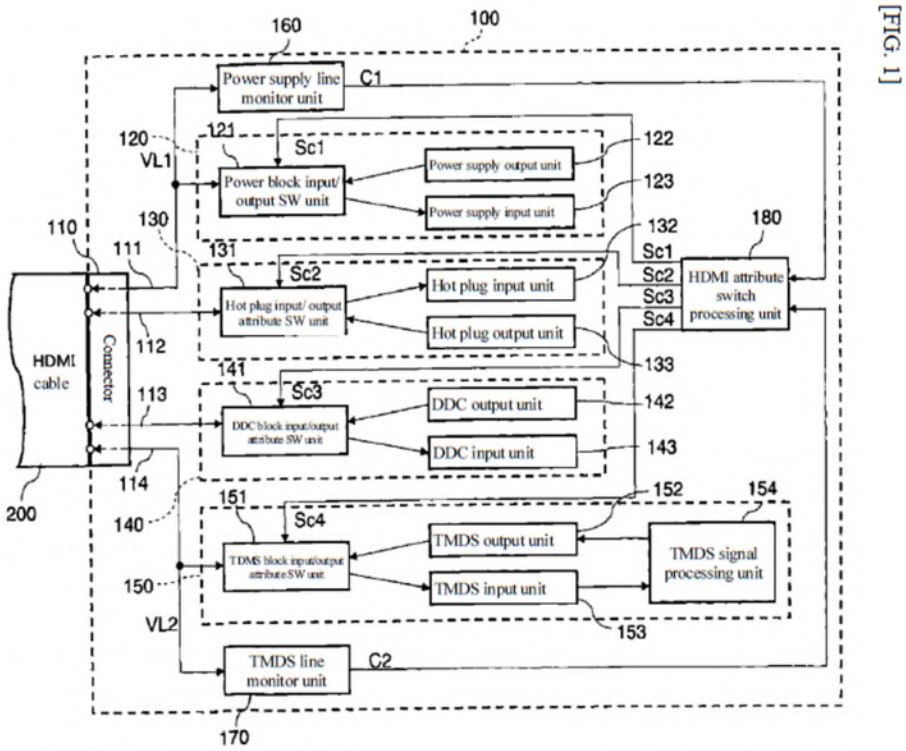
		 Iwamoto at Fig. 5. To the extent that Plaintiff contends that Iwamoto does not explicitly or inherently disclose this element, or render obvious this element, this element is obvious in combination with one or more references and/or with the knowledge of a person of ordinary skill in the art, as set forth in Defendant's Invalidity Contentions.

Exhibit D-7

Claim 8		
8[p]	An audio/video (AV) device comprising:	To the extent the preamble is limiting, Iwamoto discloses this element and/or renders it obvious either alone or in combination with other references and/or the knowledge of one of ordinary skill in the art. *See, e.g.*: "The present invention has been configured in view of such conventional problems, and an object thereof is to provide a source/sink dual-purpose device that can detect a functional attribute of an HDMI device connected to a single connector. To provide a source/sink dual-purpose device capable of automatically switching its own functions according to the detected function attribute of the device." Iwamoto at [0016]. "In order to achieve the foregoing object, the source/sink dual-purpose device of the present invention is a source/sink dual-purpose device conforming to the HDMI standard, provided with first function means for realizing a function as a source device and second function means for realizing a function as a sink device, a source/sink dual-purpose device conforming to the HDMI standard, provided with a second function means for realizing, being provided with a connector for connecting one of the first function means and the second function means to an external device conforming to the HDMI standard, first voltage level monitor means for detecting the voltage level of the power line of the connector, second voltage level monitor means for detecting the voltage level of a TMDS_CLK line of the connector, and function determination means for determining a function of the external device on the basis of the detected two voltage levels." Iwamoto at [0017].

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		 [FIG. 1] Iwamoto at Fig. 1. To the extent that Plaintiff contends that Iwamoto does not explicitly or inherently disclose this element, or render obvious this element, this element is obvious in combination with one or more references and/or with the knowledge of a person of ordinary skill in the art, as set forth in Defendant's Invalidity Contentions.
8(a)	communication logic to couple to a	Iwamoto discloses and/or renders obvious this limitation. *See* exemplary disclosures and corresponding discussion for claim element 1(c) and 1(d).

	connector, the communication logic including circuitry configured to implement:	
8(a)(1)(i)	an AV sink operation mode for the communication logic to receive AV data provided to the AV device at the connector and to receive power from a first supply voltage provided to the AV device via a channel of the connector,	Iwamoto discloses and/or renders obvious this limitation. *See* exemplary disclosures and corresponding discussion for claim element 1(e).
8(a)(1)(ii)	the AV sink operation mode being a default mode of operation for the AV device, and	Iwamoto discloses and/or renders obvious this limitation. *See* exemplary disclosures and corresponding discussion for claim element 1(a).
8(a)(2)	an AV source operation mode for the communication logic to send AV data from the AV device via the connector and to provide a second supply voltage at the	Iwamoto discloses and/or renders obvious this limitation. *See* exemplary disclosures and corresponding discussion for claim element 1(g).

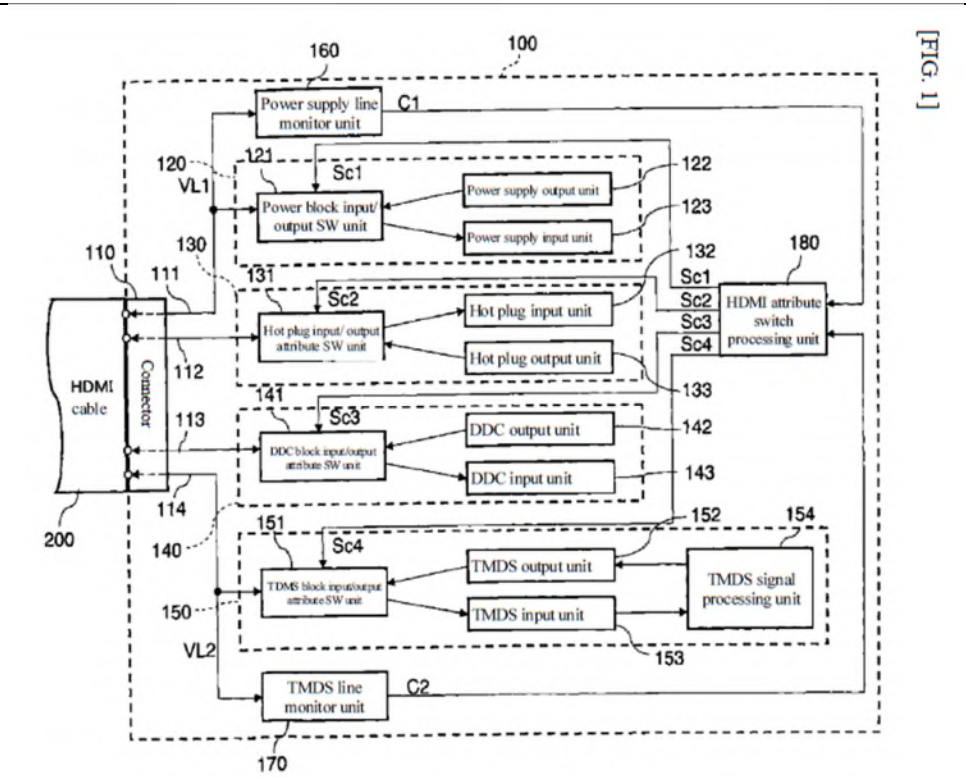
	channel of the connector; and	
8(b)(1)	control logic including circuitry to configure the communication logic to initialize the AV device to operate in the default AV sink operation mode in response to a power-on-reset or powering up of the AV device,	Iwamoto in view of Knight discloses and/or renders obvious this limitation. *See* exemplary disclosures and corresponding discussion for claim element 1(a).
8(b)(2)	to continue operating the AV device in the AV sink operation mode in response to determining that the first supply voltage is provided at the channel of the connector, and to configure the communication logic to transition the AV device from the AV sink operation mode to the AV source operation mode in response to determining that the	Iwamoto discloses and/or renders obvious this limitation. *See* exemplary disclosures and corresponding discussion for claim element 1(d), 1(f), and 1(c).

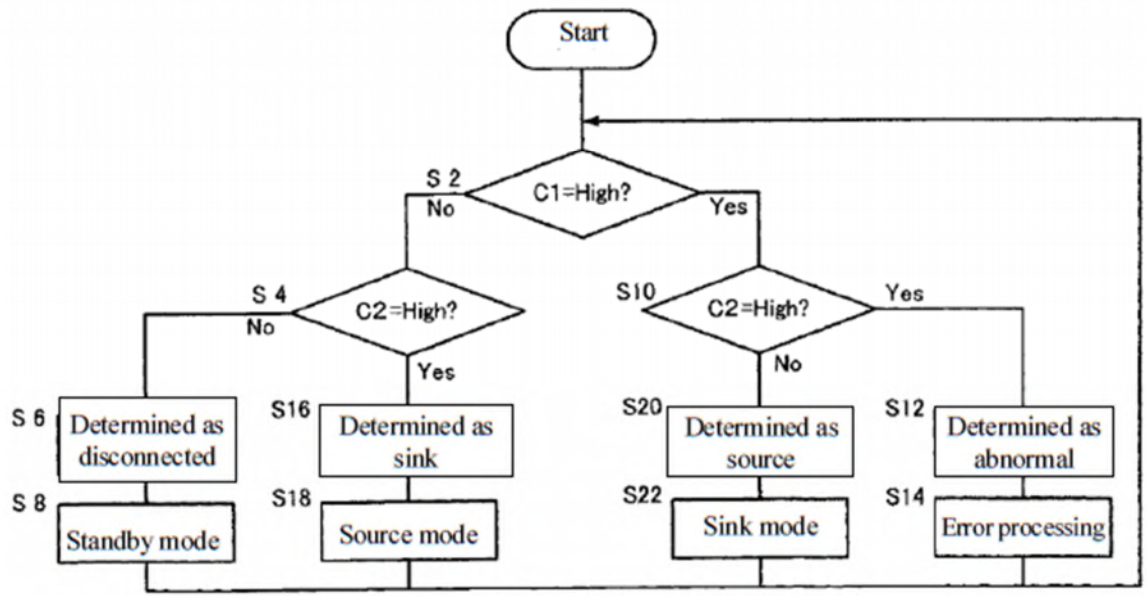
	first supply voltage is not provided at the channel of the connector.	
Claim 11		
11(a)	The device of claim 8, further comprising: detector logic to detect, while the communication logic is in the default operation mode, a coupling of the AV device to another AV device via the connector; and	Iwamoto in view of Knight discloses, expressly or inherently, the device of claim 8 under any proposed construction, and further discloses and/or renders obvious limitation 11(a). *See* exemplary disclosures and corresponding discussion for claim 8 and claim element 1(b).
11(b)	wherein the communication logic is further configured to perform an AV data exchange with the other device in response to the detection.	Iwamoto discloses and/or renders obvious this limitation. *See, e.g.*: "In contrast, when the source/sink dual-purpose device 100 realizes a sink device function, the power input unit 123 supplies power to the hot plug output unit 133, the DDC input unit 143, and the TDMS input unit 152. By providing the power output unit 122 and the power input unit 123 separately, backflow of current from the sink side to the source side can be prevented." Iwamoto at [0036]. "Thus, in the source/sink dual-purpose device 10 configured as the television with built-in DVD player, a video signal played back by the DVD player is normally displayed as a video by a television display, and an audio signal is output as audio from a speaker of the television. However, there are times when a user would like to view the video on a projector without viewing the video on the television display. Furthermore, it may be desired that the video and audio captured by the

		digital video camera be played back by a display and a speaker of the source/sink dual-purpose device 10." Iwamoto at [0005]. "In order to respond to such desires, it is required to receive a signal from an external source device to the sink device corresponding block 11 provided in the source/sink dual-purpose device 10 and to supply a signal from the source device corresponding block 12 to the external sink device." Iwamoto at [0006]. "The present invention has been configured in view of such conventional problems, and an object thereof is to provide a source/sink dual-purpose device that can detect a functional attribute of an HDMI device connected to a single connector. To provide a source/sink dual-purpose device capable of automatically switching its own functions according to the detected function attribute of the device." Iwamoto at [0016]. "In the DDC block 140, when the source/sink dual-purpose device 100 functions as a source, EDID data related to a displayable video format from the sink device 20snk connected to the HDMI cable 200 is transferred to a DDC output unit 142 and stored in a memory (not illustrated). The DDC output unit 142 sets a video format on the basis of a user instruction from the EDID stored in a memory." Iwamoto at [0038]. "In a memory (not illustrated) of the DDC input unit 143, when the source/sink dual-purpose device 100 functions as a sink, a displayable video format is stored as the EDID. The EDID stored in the memory is read out by access from the source device 20src when the source/sink dual-purpose device 100 is connected to the source device 20src." Iwamoto at [0039]. "In the TDMS block 150, when the source/sink dual-purpose device 100 functions as a source, a TDMS output unit 152 outputs video data and audio data converted into TDMS system data by the TDMS signal processing unit 154 to the sink device 20snk connected to the HDMI cable 200." Iwamoto at [0040]. "The TDMS input unit 153 receives the video data and the TDMS system audio data transmitted from the source device 20src connected to the HDMI cable 200 when the source/sink dual-purpose device 100 functions as the sink. The video data and the audio data are transferred from the TDMS

		input unit 153 to the TMDS signal processing unit 154 and converted into video data and audio data before TMDS processing is performed by the TDMS signal processing unit 154. The problem of impedance mismatch of the TDMS line 114 can be eliminated by providing the TDMS output unit 152 and the TDMS input unit 153 separately." Iwamoto at [0041]. "Next, two monitoring units 160 and 170 that monitor the connection state between the HDMI cable 200 and the external device 20 will be described. The power supply line monitor unit 160 repeatedly detects a voltage level VL1 of a power supply line 111 among a plurality of lines connected to the connector 110 at predetermined time intervals to generate a binary level signal (hereinafter, 'power supply line level') C1." Iwamoto at [0042]. "When the external device 40 to which the connector 110 is connected via the HDMI cable 200 is the source device 20src, the voltage level VL1 of the power source line 111 indicates a High level (5 V). In contrast, when the connected external device 40 is the sink device 20snk, is not connected, or is not operating due to not being energized despite being connected, the voltage level VL1 indicates a low level (0 V). The power supply line level C1 has a value of either High or Low corresponding to the level of the voltage level VL1." Iwamoto at [0043]. "The TDMS line monitor unit 170 repeatedly detects a voltage level VL2 of the TDMS line (specifically, a TDMS_CLK line) 114 included in the connector 110 at predetermined time intervals to generate a binary level signal (hereinafter, "TDMS line level") C2. When the connector 110 is connected to a sink device via the HDMI cable 200, the voltage level VL2 of the TDMS line 114 indicates a High level (3.3 V)." Iwamoto at [0044]. "In contrast, when the connector 110 is connected to a source device via the HDMI cable 200 or is not connected to another device, the voltage level VL2 indicates a low level (0 V). The TDMS line level C2 has a value of either High or Low corresponding to the level of the voltage level VL2." Iwamoto at [0045]. "Operation of the HDMI attribute switching processing unit 180 will be described below with reference to FIG. 2. The HDMI attribute switching processing unit 180 determines a function J of the external device connected to the connector 110 also used for connection between the source device and the sink device based on the power source line level C1 and the TDMS line level C2.

		Note that "function," in relation to the external device, refers to one of four states of 'disconnected,' 'abnormal,' 'sink,' and 'source.'" Iwamoto at [0046]. "In state 3 (sink), the source/sink dual-purpose device 100 is set to the source mode by the processing in step S2 (No), step S4 (Yes), step S16, and step S18. Then, the source/sink dual-purpose device 100 monitors the state of the external device 20 while repeating the process of the flowchart of FIG. 3. Then, when the state of the external device 20 changes, the operating mode of the device itself is reset in accordance with the change." Iwamoto at [0075]. "In state 4 (source), the source/sink dual-purpose device 100 is set to the sink mode by the processing in step S2 (Yes), step S10 (No), step S20, and step S22. Then, the source/sink dual-purpose device 100 monitors the state of the external device 20 while repeating the process of the flowchart of FIG. 3. Then, when the state of the external device 20 changes, the operating mode of the device itself is reset in accordance with the change." Iwamoto at [0076].

		 Iwamoto at Fig. 1.

		 [FIG. 3] Iwamoto at Fig. 3.

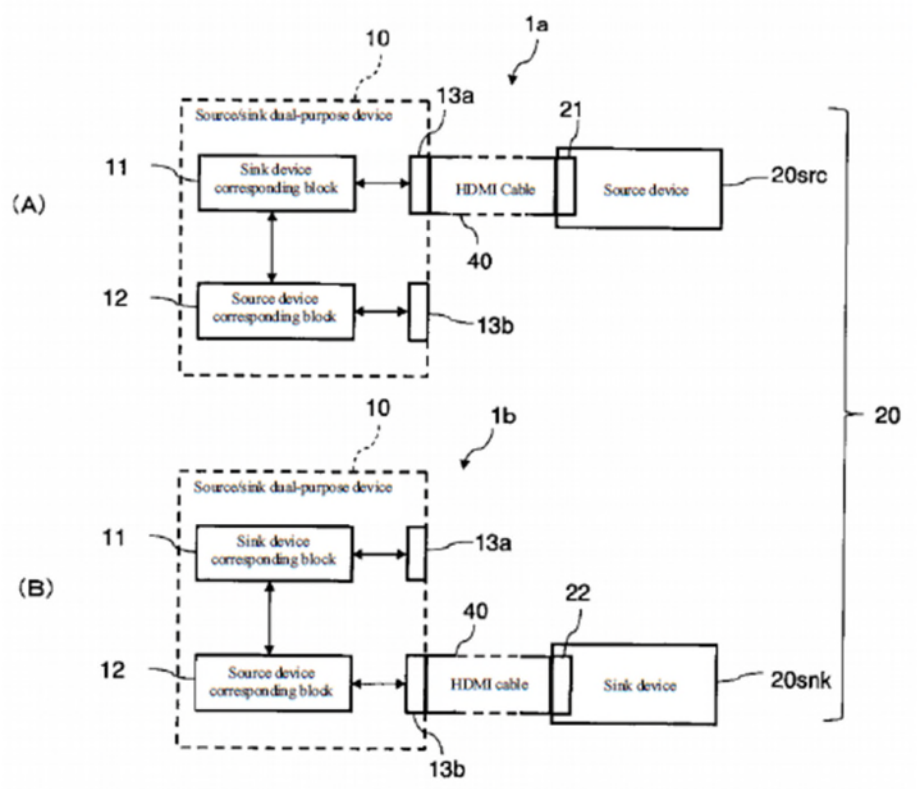
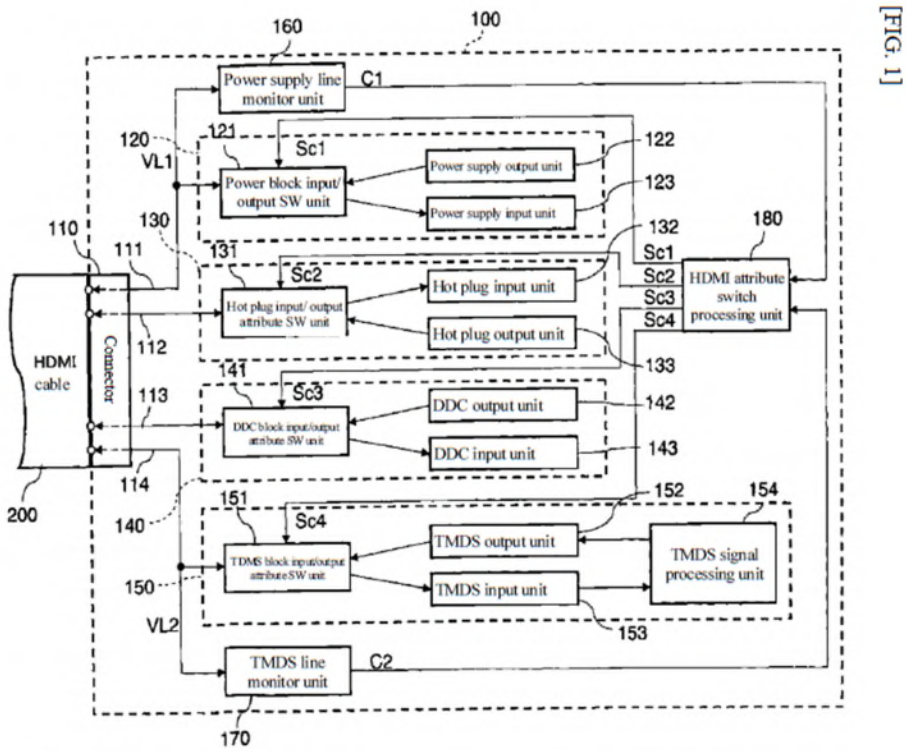
		 Iwamoto at Fig. 5. To the extent that Plaintiff contends that Iwamoto does not explicitly or inherently disclose this element, or render obvious this element, this element is obvious in combination with one or more references and/or with the knowledge of a person of ordinary skill in the art, as set forth in Defendant's Invalidity Contentions.

Exhibit D-7

Claim 14		
14[p]	A system comprising:	To the extent the preamble is limiting, Iwamoto discloses this element and/or renders it obvious either alone or in combination with other references and/or the knowledge of one of ordinary skill in the art. *See, e.g.*: "The present invention has been configured in view of such conventional problems, and an object thereof is to provide a source/sink dual-purpose device that can detect a functional attribute of an HDMI device connected to a single connector. To provide a source/sink dual-purpose device capable of automatically switching its own functions according to the detected function attribute of the device." Iwamoto at [0016]. "In order to achieve the foregoing object, the source/sink dual-purpose device of the present invention is a source/sink dual-purpose device conforming to the HDMI standard, provided with first function means for realizing a function as a source device and second function means for realizing a function as a sink device, a source/sink dual-purpose device conforming to the HDMI standard, provided with a second function means for realizing, being provided with a connector for connecting one of the first function means and the second function means to an external device conforming to the HDMI standard, first voltage level monitor means for detecting the voltage level of the power line of the connector, second voltage level monitor means for detecting the voltage level of a TMDS_CLK line of the connector, and function determination means for determining a function of the external device on the basis of the detected two voltage levels." Iwamoto at [0017].

		 Iwamoto at Fig. 1. To the extent that Plaintiff contends that Iwamoto does not explicitly or inherently disclose this element, or render obvious this element, this element is obvious in combination with one or more references and/or with the knowledge of a person of ordinary skill in the art, as set forth in Defendant's Invalidity Contentions.

14(a)	a connector;	Iwamoto discloses and/or renders obvious this limitation. *See* exemplary disclosures and corresponding discussion for claim element 1(c).
14(b)	communication logic of an audio/video (AV) device coupled to the connector, the communication logic including circuitry configured to implement:	Iwamoto discloses and/or renders obvious this limitation. *See* exemplary disclosures and corresponding discussion for claim element 1(c) and 1(d).
14(b)(1)	an AV sink operation mode for the communication logic to receive AV data provided to the system at the connector and to receive power from a first supply voltage provided to the system at a channel of the connector, the AV sink operation mode being a default mode of operation for the system, and	Iwamoto in view of Knight discloses and/or renders obvious this limitation. *See* exemplary disclosures and corresponding discussion for claim element 1(a) and 1(e).
14(b)(2)	an AV source operation mode for the communication logic to send AV data from	Iwamoto discloses and/or renders obvious this limitation. *See* exemplary disclosures and corresponding discussion for claim element 1(g).

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	the system via the connector and to provide a second supply voltage at the channel of the connector; and	
14(c)	control logic including circuitry to configure the communication logic to initialize the AV device to operate in the default AV sink operation mode in response to a power-on-reset or powering up of the AV device, to continue operating the AV device in the AV sink operation mode in response to determining that the first supply voltage is provided at the channel of the connector, and to configure the communication logic to transition the AV device from the AV sink operation mode to	Iwamoto in view of Knight discloses and/or renders obvious this limitation. *See* exemplary disclosures and corresponding discussion for claim element 1(a), 1(c), 1(d), and 1(f).

	the AV source operation mode in response to determining that the first supply voltage is not provided at the channel of the connector.	

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Exhibit D-8

Invalidity of the ’265 Patent in View of U.S. Pat. App. Pub. No. 2009/0046690 A1 (Hsieh) and JP 2009-60204 A to Iwamoto (Iwamoto).

This chart provides examples of where the prior art reference discloses, either expressly or inherently, the claim elements of asserted U.S. Patent No. 9,232,265 (“the ’265 patent”). The citations herein are exemplary and are not exhaustive; Defendant has cited the most relevant portions of the identified prior art. For each citation, Defendant hereby incorporates by reference the entire cited prior art reference, and reserves the right to rely on uncited portions of each identified prior art reference. To provide context or identify the state of the art at the time of the alleged invention, Defendant reserves the right to rely on: (1) uncited portions of the identified prior art; (2) other prior art not identified herein; (3) references that show the state of the art (irrespective of whether such references themselves qualify as prior art); (4) factual testimony from the inventors or authors of the prior art references, or purveyors of prior art devices; and (5) expert testimony.

Where Defendant cites a figure, the citation includes any text associated with the figure. Where Defendant cites passages relating to a figure, the citation includes the associated figure any other text associated with that figure. Where Defendant cites particular prior art as disclosing a claim element, that citation equally applies to all identical or similar claim elements in this chart. Defendant reserves the right to further assert that a claim element is inherent, the element would have been obvious to a person of ordinary skill in the art, or the element is disclosed in other prior art that may be combined with the cited prior art. To establish the inherency of certain features of the prior art to invalidate the asserted claims, Defendant may rely on cited or uncited portions of the prior art, other documents, factual testimony, and expert testimony.

This invalidity chart is based on information presently available to Defendant, and the information herein is provided as a non-limiting example.

Hsieh was filed on August 16, 2007, and published on February 19, 2009; therefore, Hsieh is prior art under at least 35 U.S.C. § 102(b).

Iwamoto was filed on August 30, 2007, and published on March 19, 2009; therefore, Iwamoto is prior art under at least 35 U.S.C. § 102(b).

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Exhibit D-8

Claim Limitation		Hsieh and/or Iwamoto
Claim 1		
1[p]	A method comprising:	To the extent the preamble is limiting, Hsieh discloses this element and/or renders it obvious either alone or in combination with other references and/or the knowledge of one of ordinary skill in the art. *See, e.g.*: "The HSDI structure, such as High-Definition Mul-timedia Interface (HDMI), is a digital audio/video interface capable of transmitting uncompressed data streams. HSDI is compatible with Digital Rights Management technology and provides an interface between any compatible digital audio/ video source device (e.g. a set-top box, a DVD recorder, or a PC) and a compatible digital audio/video sink device, such as a digital television. Therefore, it has become a modern replacement for conventional analog standards such as SCART or RCA connectors." Hsieh at [0002]. "One objective of the invention is therefore to provide a bidirectional HSDI transceiver and a method for supplying a bi-directional communication process on a HSDI device, to solve the above-mentioned problems." Hsieh at [0004]. "FIG. 1 illustrates a diagram of an HSDI transceiver with bi-directional HSDI functionality according to an exemplary embodiment of the invention." Hsieh at [0015]. "Briefly summarized, an HSDI transceiver with bi-directional functionality can switch its function to make itself compatible to a typical HSDI source device/HSDI sink device, or form a bi-directional HSDI structure coupled with another HSDI transceiver with bi-directional functionality. It can extend the combinations and the usage of the HSDI device applications. When a DVD recorder and a digital television both have bi-directional HSDI functionality, TV signals can be received and processed by the tuner in the digital TV and transformed into HSDI signals by the HSDI device in the digital TV. The HSDI signals are then transported to the DVD recorder as a video input and an audio input. In this way, the DVD recorder does not need to be provided with a tuner while recording a TV program. The cost of the DVD recorder is hence significantly decreased. Moreover, a user can use a mobile phone or a remote computer to control the computer at home through the Internet to tum on a TV and switch the HSDI device inside the TV to act as a source device. By utilizing the bi-directional structure of the TV and the computer at home, the TV can transport TV signals to the computer. Once the computer has transferred the HSDI TV signal into

		a TS bit stream, it can further transmit the TS bit stream to the user through the Internet, allowing the user to watch TV programs in any location." Hsieh at [0035]. "If the specific HSDI device supports bi-directional functionalities, as shown in FIG. 2, the first multiplexer 106 of the HSDI transceiver 100 is connected to the first multiplexer 206 of the specific HSDI device 200 by a TMDS channel (or a wireless interface in another embodiment) to transport the HSDI signals bi-directionally between the HSDI transceiver 100 and the specific HSDI device 200, the controller 108 of the HSDI transceiver 100 is connected to the controller 208 of the specific HSDI device 200 by a CEC line (or a wireless interface), and the second multiplexer 112 of the HSDI trans-ceivers 100 is connected to the second multiplexer 212 of the specific HSDI device 200 by a display data channel (DDC) line (or a wireless interface) to transport the EDID of the sink device." Hsieh at [0020]. "FIG. 3 is a flow chart of forming a bi-directional HSDI structure shown in FIG. 2." Hsieh at [0023].

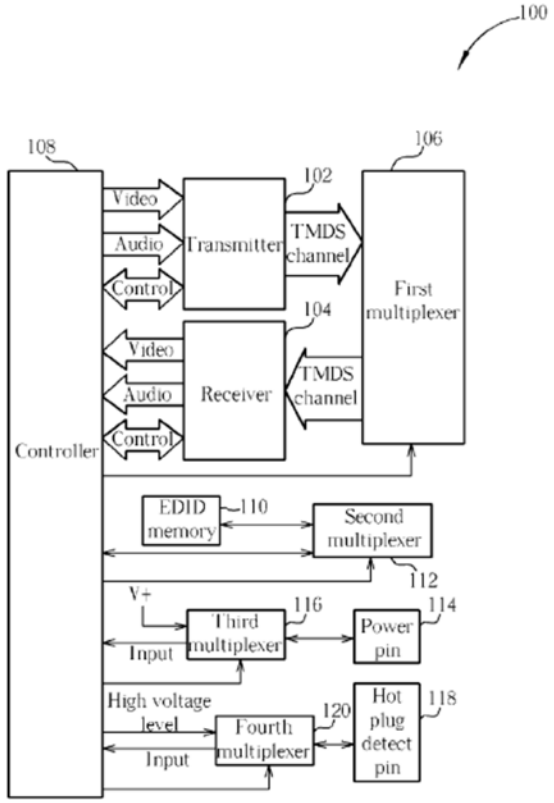
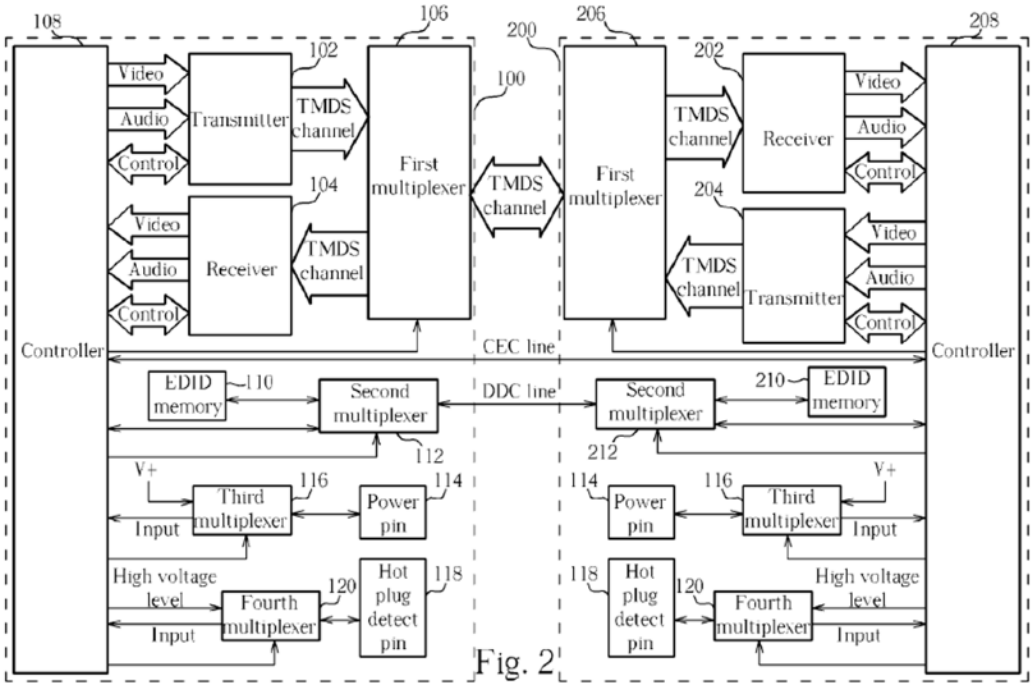
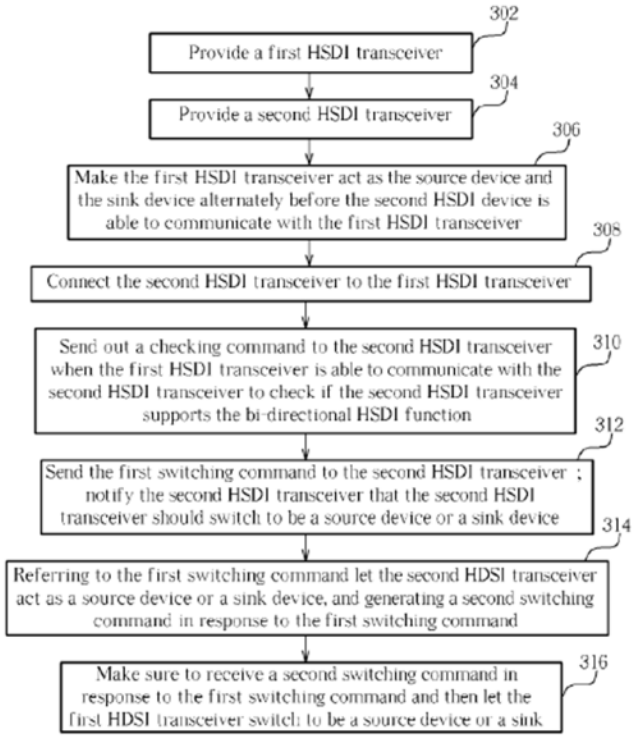


Fig. 1

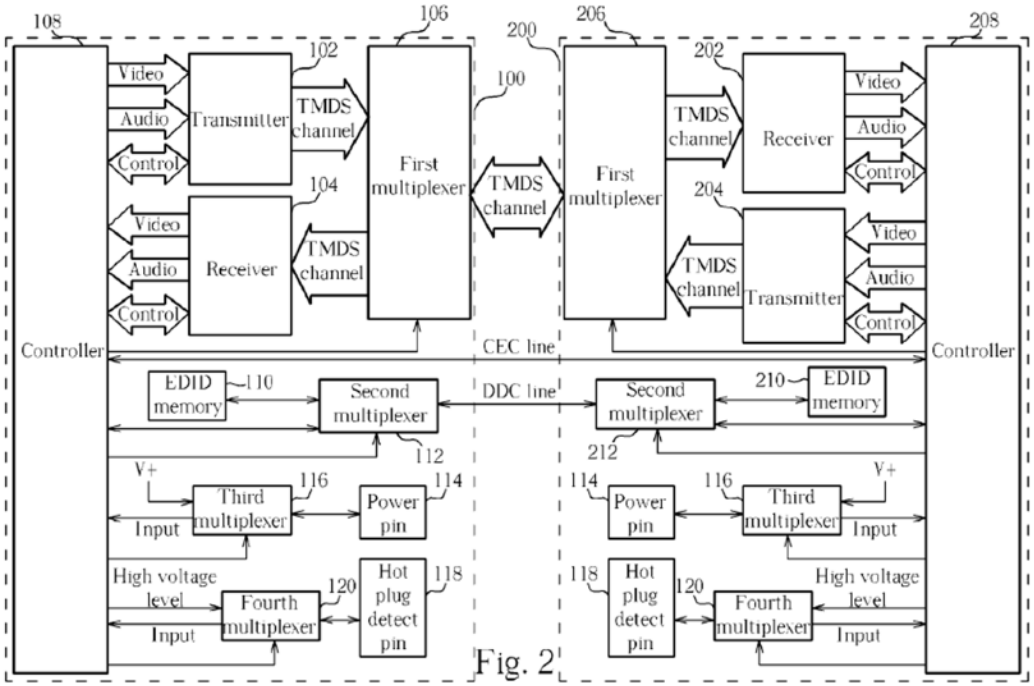
Hsieh at Fig. 1.

		 Fig. 2 Hsieh at Fig. 2.

		 Fig. 3 Hsieh at Fig. 3. To the extent that Plaintiff contends that Hsieh does not explicitly or inherently disclose this element, or render obvious this element, this element is obvious in combination with one or more references and/or with the knowledge of a person of ordinary skill in the art, as set forth in Defendant's Invalidity Contentions.
1(a)	initializing a first audio/video (AV)	Hsieh discloses and/or renders obvious this limitation. *See, e.g.*:

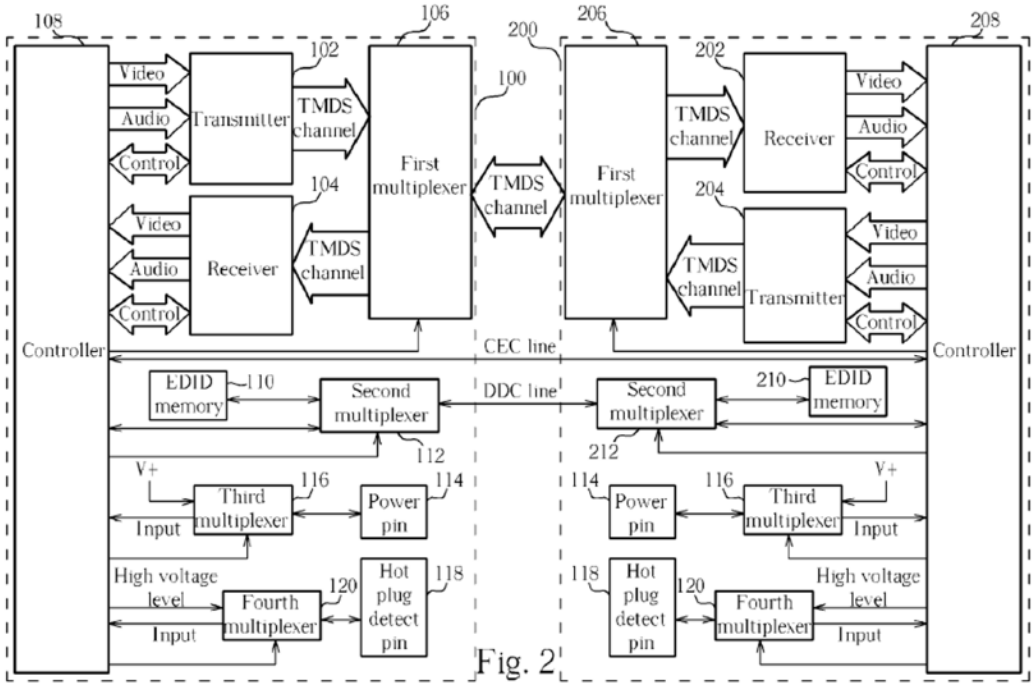
	device to operate in a default AV sink operation mode in response to a power-on-reset or powering up of the first AV device;	"[T]he first HSDI transceiver is pre-set to be either the source device or the sink device prior receiving or generating a first control Switching command." Hsieh at [0006]. "Being bi-directional, the HSDI transceiver 100 can be chosen to act as a source device or a sink device depending on the user's requirement. Please note, prior generating a switching command, each HSDI transceiver 100 is pre-set as the source device or the sink device by having some default setting. For example, the settings of the power pin 114 and the hot plug detect pin 118, and the connection relationships of the first multiplexer 106 and the second multiplexer 112 of the HSDI transceiver 100 are pre-set to let the HSDI transceiver 100 conform to the standard for HSDI device, such as HDMI specification. When the HSDI transceiver 100 is a DVD recorder, the default setting of the first multiplexer 106 is to couple to the transmitter 102, the default setting of the second multiplexer 112 is to couple to the controller 108, the controller 108 controls the third multiplexer 116 to set the power pin 114 to supply power, and controls the fourth multiplexer 120 to set the hot plug detect pin 118 to become an input node." Hsieh at [0106]. "Initially, each device is set to be the default working function, Source or sink function." [0020] To the extent that Plaintiff contends that Hsieh does not explicitly or inherently disclose this element, or render obvious this element, this element is obvious in combination with one or more references and/or with the knowledge of a person of ordinary skill in the art, as set forth in Defendant's Invalidity Contentions.
1(b)	detecting with control circuitry of the first AV device, a coupling between the first AV device and a second AV device;	Hsieh discloses and/or renders obvious this limitation. *See, e.g.*: "Being bi-directional, the HSDI transceiver 100 can be chosen to act as a source device or a sink device depending on the user's requirement. Please note, prior generating a switching command, each HSDI transceiver 100 is pre-set as the source device or the sink device by having some default setting. For example, the settings of the power pin 114 and the hot plug detect pin 118, and the connection relationships of the first multiplexer 106 and the second multiplexer 112 of the HSDI transceiver 100 are pre-set to let the HSDI transceiver 100 conform to the standard for HSDI device, such as HDMI specification. When the HSDI transceiver 100 is a DVD recorder, the default setting of the first multiplexer 106 is to couple to the transmitter 102, the default setting of the second multiplexer 112 is to couple to the controller 108, the con-troller 108 controls the third multiplexer

		116 to set the power pin 114 to supply power, and controls the fourth multiplexer 120 to set the hot plug detect pin 118 to become an input node." Hsieh at [0016]. "When the HSDI transceiver 100 is connected to a specific HSDI device, it will trigger the detection process to determine whether the specific HSDI device is plugged in according to a communication procedure specified in the specification for a variety of HSDI devices, such as HDMI. Since such a communication procedure can be appreciated by a person skilled in this art, the detailed description is omitted here for the brevity. While both HSDI transceiver 100 and the specific HSDI device act as the same type of devices, which could be either both are source or both are sink devices, the HSDI transceiver 100 is unable to detect the plugged-in specific HSDI device. In such case, the controller 108 of the HSDI transceiver 100 could make transceiver 100 to be the sink device while the specific HSDI device is a source device and vice versa by controlling the first multiplexer 106, the second multiplexer 112, the third multiplexer 116, and the fourth multiplexer 118 to make the HSDI transceiver 100 act as the source device and the sink device alternately. Please note that controlling could be performed prior of the specific HSDI device is able to communicate with the HSDI transceiver 100. For example, if the HSDI transceiver 100 acts as a source device initially and the specific HSDI device is also a source device, the controller 108 controls the first multiplexer 106 to be coupled to the receiver 104, the second multiplexer 112 to be coupled to the EDID memory 110, the third multiplexer 116 to make the power pin 114 to draw power from the specific HSDI device, and the fourth multiplexer 120 to make the hot plug detect pin 118 to have a high voltage in order to let the HSDI transceiver 100 enter a slave mode to act as a sink device. By switching HSDI transceiver 100 to a sink device, two HSDI communication devices are able to communicate with each other after the HSDI transceiver 100 enters the slave mode. While the non-detection of plug-in status occurs due to the reason of the specific HSDI device is not connected to or not completely connected to the HSDI transceiver 100 yet, the HSDI transceiver 100 could switch to a master mode to act as the source device." Hsieh at [0017]. "Once the HSDI transceiver 100 detects the plugged-in specific HSDI device, the controller 108 sends out a check-ing command to check whether the specific HSDI device supports the bi-directional HSDI functionality." Hsieh at [0018].

		 Fig. 2 Hsieh at Fig. 2. To the extent that Plaintiff contends that Hsieh does not explicitly or inherently disclose this element, or render obvious this element, this element is obvious in combination with one or more references and/or with the knowledge of a person of ordinary skill in the art, as set forth in Defendant's Invalidity Contentions.
1(c)	determining whether a first supply voltage is provided at a channel of a connector, the connector coupling the	Hsieh discloses and/or renders obvious this limitation. *See, e.g.*: "Being bi-directional, the HSDI transceiver 100 can be chosen to act as a source device or a sink device depending on the user's requirement. Please note, prior generating a switching command, each HSDI transceiver 100 is pre-set as the source device or the sink device by having some default setting. For example, the settings of the power pin 114 and the hot plug detect pin 118, and the connection relationships of the first multiplexer 106 and the second multiplexer 112 of the HSDI

	first AV device and the second AV device;	transceiver 100 are pre-set to let the HSDI transceiver 100 conform to the standard for HSDI device, such as HDMI specification. When the HSDI transceiver 100 is a DVD recorder, the default setting of the first multiplexer 106 is to couple to the transmitter 102, the default setting of the second multiplexer 112 is to couple to the controller 108, the controller 108 controls the third multiplexer 116 to set the power pin 114 to supply power, and controls the fourth multiplexer 120 to set the hot plug detect pin 118 to become an input node." Hsieh at [0016]. "When the HSDI transceiver 100 is connected to a specific HSDI device, it will trigger the detection process to determine whether the specific HSDI device is plugged in according to a communication procedure specified in the specification for a variety of HSDI devices, such as HDMI. Since such a communication procedure can be appreciated by a person skilled in this art, the detailed description is omitted here for the brevity. While both HSDI transceiver 100 and the specific HSDI device act as the same type of devices, which could be either both are source or both are sink devices, the HSDI transceiver 100 is unable to detect the plugged-in specific HSDI device. In such case, the controller 108 of the HSDI transceiver 100 could make transceiver 100 to be the sink device while the specific HSDI device is a source device and vice versa by controlling the first multiplexer 106, the second multiplexer 112, the third multiplexer 116, and the fourth multiplexer 118 to make the HSDI transceiver 100 act as the source device and the sink device alternately. Please note that controlling could be performed prior of the specific HSDI device is able to communicate with the HSDI transceiver 100. For example, if the HSDI transceiver 100 acts as a source device initially and the specific HSDI device is also a source device, the controller 108 controls the first multiplexer 106 to be coupled to the receiver 104, the second multiplexer 112 to be coupled to the EDID memory 110, the third multiplexer 116 to make the power pin 114 to draw power from the specific HSDI device, and the fourth multiplexer 120 to make the hot plug detect pin 118 to have a high voltage in order to let the HSDI transceiver 100 enter a slave mode to act as a sink device. By switching HSDI transceiver 100 to a sink device, two HSDI communication devices are able to communicate with each other after the HSDI transceiver 100 enters the slave mode. While the non-detection of plug-in status occurs due to the reason of the specific HSDI device is not connected to or not completely connected to the HSDI transceiver 100 yet, the HSDI transceiver 100 could switch to a master mode to act as the source device." Hsieh at [0017].

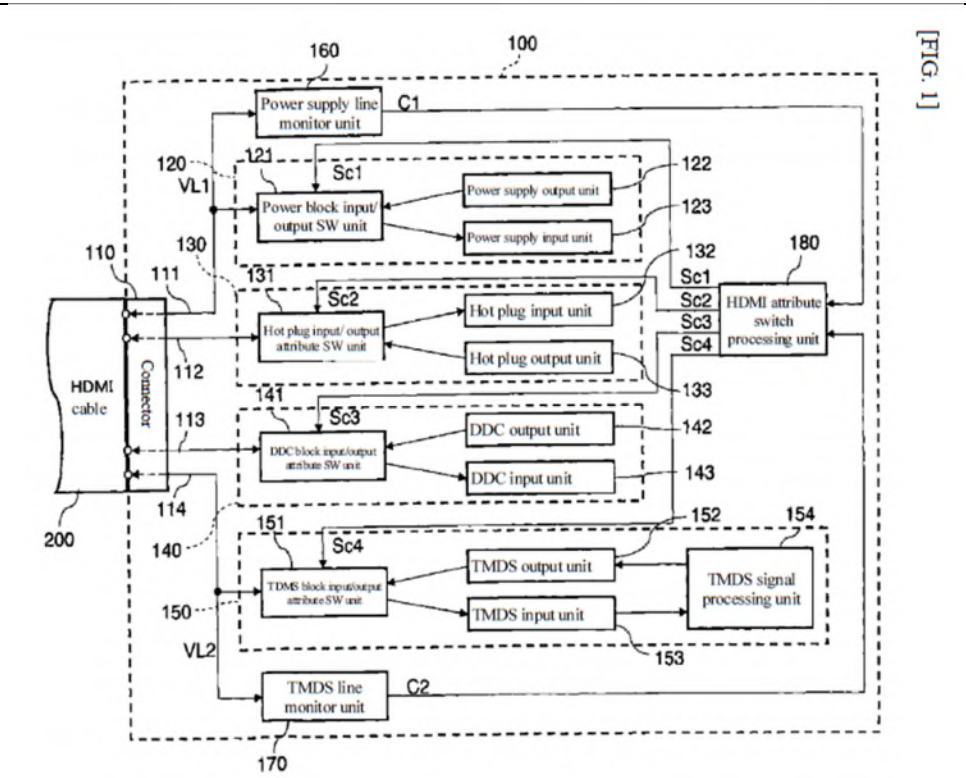
		"Once the HSDI transceiver 100 detects the plugged-in specific HSDI device, the controller 108 sends out a check-ing command to check whether the specific HSDI device supports the bi-directional HSDI functionality." Hsieh at [0018]. "If the specific HSDI device supports bi-directional functionalities, as shown in FIG. 2, the first multiplexer 106 of the HSDI transceiver 100 is connected to the first multiplexer 206 of the specific HSDI device 200 by a TMDS channel (or a wireless interface in another embodiment) to transport the HSDI signals bi-directionally between the HSDI transceiver 100 and the specific HSDI device 200, the controller 108 of the HSDI transceiver 100 is connected to the controller 208 of the specific HSDI device 200 by a CEC line (or a wireless interface), and the second multiplexer 112 of the HSDI trans-ceivers 100 is connected to the second multiplexer 212 of the specific HSDI device 200 by a display data channel (DDC) line (or a wireless interface) to transport the EDID of the sink device. Initially, each device is set to be the default working function, source or sink function. When device is requested to change its working function, it needs to send the switching command to notify another device. For example, while the HSDI transceiver 100 is a source device and the specific HSDI device 200 is a sink device, initially the controller 108 of the HSDI transceiver 100 will control the first multiplexer 106 and the second multiplexer 112 to be source function; that is, coupling the first multiplexer 106 to the transmitter 102 and coupling the second multiplexer 112 to the controller 108 to let the HSDI transceiver 100 act as the source device. And initially the controller 208 of the HSDI transceiver 200 will control the first multiplexer 206 and the second multiplexer 212 to be sink function; that is, coupling the first multiplexer 206 to the receiver 202 and coupling the second multiplexer 212 to the EDID memory 210 to let the HSDI transceiver 200 act as the sink device." Hsieh at [0020]. "When the HSDI transceiver 100 is requested to change its working function from source device to sink device, the HSDI transceiver 100 sends a checking command to the HSDI transceiver 200, and a first switching command is then sent from the controller 108 to the controller 208 of the specific HSDI device 200 through the CEC line, and if the controller 208 supports this first switching command, it should generate a second switching command in response to the first switching command and couple the first multiplexer 206 to the transmitter 204, couple the second multiplexer 212 to the controller 208, set hot-plug detect pin 218 to be input pin and set power pin 214 to be output pin. At this time, controller 108 will ignore the hot-plug in signal." Hsieh at [0021].

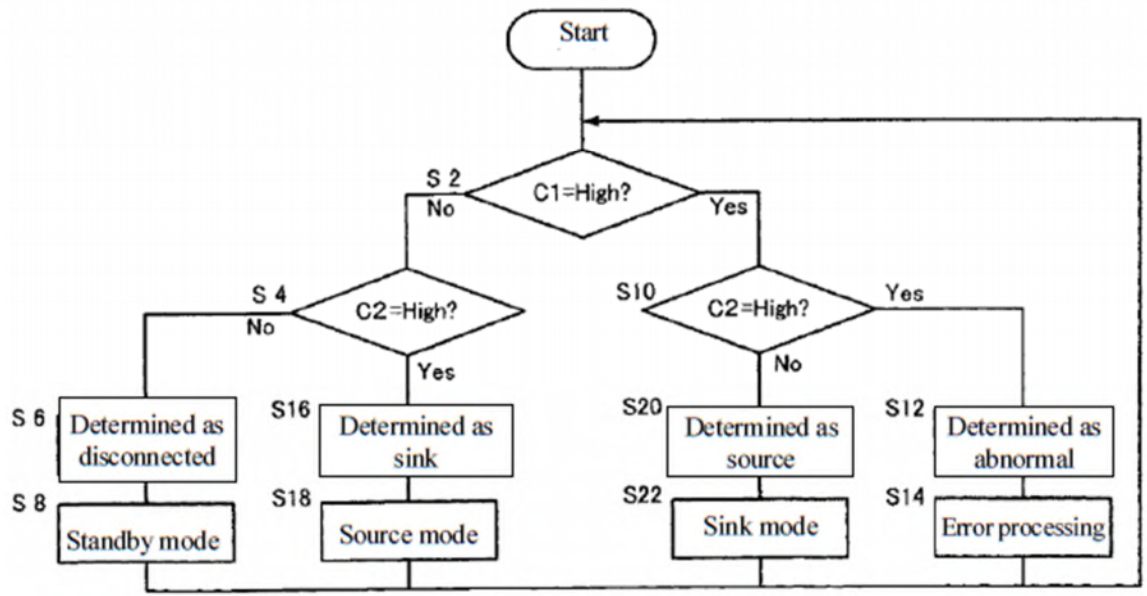
		"When the controller 108 receive the second switching command, the controller 108 will couple the first multi-plexer 106 to the receiver 104, couple the second multiplexer 112 to the EDID memory 110, set the hot-plug detect pin 118 to be output pin and set power pin 114 to be input pin. Finally the HSDI transceiver 100 will set hot-plug signal to be high and the controller 208 will detect hot-plug in signal, then transceiver 200 will act as source device and the transceiver 100 will act as sink device. The switching command can be an OP code or an OP code plus some parameters. For example, the first switching command can be an OP code plus two parameters, the first parameter '1 ' or '0' represents that the device which receives command is requested to act as a source device or a sink device respectively. The second parameter is for confirming the operating resolution and frequency between the HSDI transceiver 100 and the specific HSDI device 200." Hsieh at [0022].  Fig. 2 Hsieh at Fig. 2.

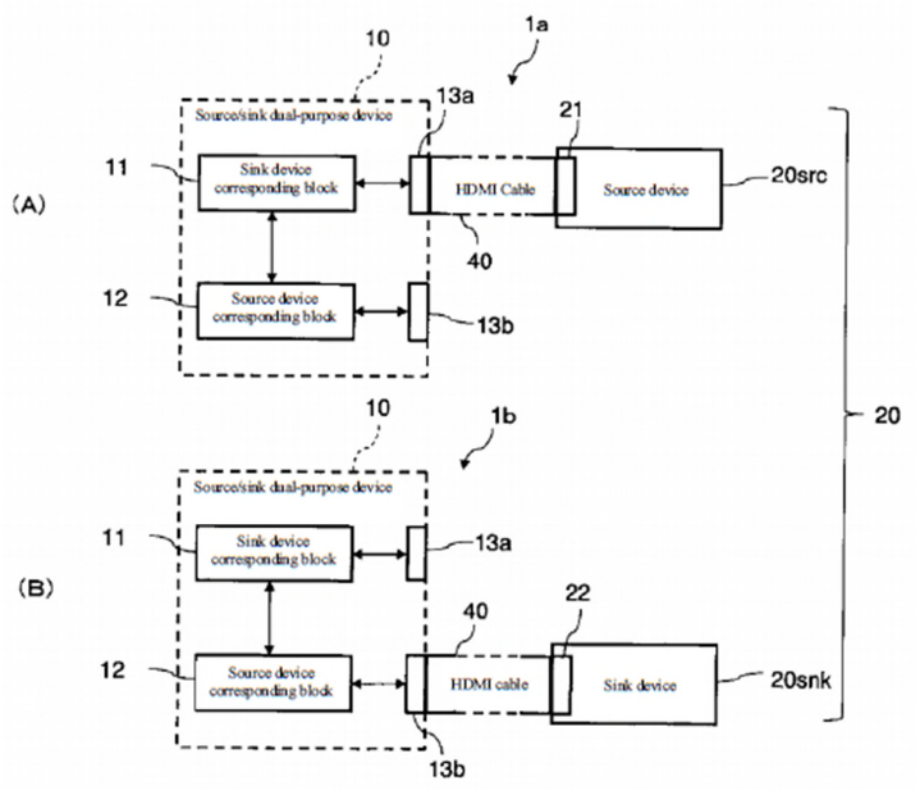
		To the extent that Plaintiff contends that Hsieh does not explicitly or inherently disclose this element, or render obvious this element, this element is obvious i2(c)n combination of one or more references and/or with the knowledge of a person of ordinary skill in the art, as set forth in Defendant's Invalidity Contentions. For example, Iwamoto teaches a similar HDMI system where a first device determines whether it should be a source or a sink based on voltage signals present on the power supply line and the TDMS line connecting the devices: "Next, two monitoring units 160 and 170 that monitor the connection state between the HDMI cable 200 and the external device 20 will be described. The power supply line monitor unit 160 repeatedly detects a voltage level VL1 of a power supply line 111 among a plurality of lines connected to the connector 110 at predetermined time intervals to generate a binary level signal (hereinafter, 'power supply line level') C1." Iwamoto at [0042]. "When the external device 40 to which the connector 110 is connected via the HDMI cable 200 is the source device 20src, the voltage level VL1 of the power source line 111 indicates a High level (5 V). In contrast, when the connected external device 40 is the sink device 20snk, is not connected, or is not operating due to not being energized despite being connected, the voltage level VL1 indicates a low level (0 V). The power supply line level C1 has a value of either High or Low corresponding to the level of the voltage level VL1." Iwamoto at [0043]. "The TDMS line monitor unit 170 repeatedly detects a voltage level VL2 of the TDMS line (specifically, a TDMS_CLK line) 114 included in the connector 110 at predetermined time intervals to generate a binary level signal (hereinafter, "TDMS line level") C2. When the connector 110 is connected to a sink device via the HDMI cable 200, the voltage level VL2 of the TDMS line 114 indicates a High level (3.3 V)." Iwamoto at [0044]. "In contrast, when the connector 110 is connected to a source device via the HDMI cable 200 or is not connected to another device, the voltage level VL2 indicates a low level (0 V). The TDMS line level C2 has a value of either High or Low corresponding to the level of the voltage level VL2." Iwamoto at [0045]. "Operation of the HDMI attribute switching processing unit 180 will be described below with

		reference to FIG. 2. The HDMI attribute switching processing unit 180 determines a function J of the external device connected to the connector 110 also used for connection between the source device and the sink device based on the power source line level C1 and the TDMS line level C2. Note that "function," in relation to the external device, refers to one of four states of 'disconnected,' 'abnormal,' 'sink,' and 'source.'" Iwamoto at [0046]. "State 1: The external device 20 is not connected to the source/sink dual-purpose device 100, or no current is applied despite being connected…. In state 1 (non-connection), the source/sink dual-purpose device 100 is set to a standby mode by processing in step S2 (No), step S4 (No), step S6, and step S8. Then, the source/sink dual-purpose device 100 waits for the external device 20 to be connected while repeating the process of the flowchart of FIG. 3." Iwamoto at [0072]-[0073].

Exhibit D-8

		 Iwamoto at Fig. 1.

		 [FIG. 3] Iwamoto at Fig. 3.

		 Iwamoto at Fig. 5. This arrangement is advantageous because it relies on standard HDMI power characteristics of the connected device to determine whether the connected device is a source or sink, and to adjust between source and sink accordingly. It thus would have been obvious to a POSA to modify Hsieh in view of Iwamoto to provide a simple switching system that relies on the TDMS and power channels of the HDMI connector to facilitate initial connection between the transceiver and a connected device.

1(d)	in response to determining that the first supply voltage is provided at the channel of the connector, configuring communication logic of the first AV device to continue operating the first AV device in the AV sink operation mode;	Hsieh in view of Iwamoto discloses and/or renders obvious this limitation. *See, e.g.*: "When the HSDI transceiver 100 is connected to a specific HSDI device, it will trigger the detection process to determine whether the specific HSDI device is plugged in according to a communication procedure specified in the specification for a variety of HSDI devices, such as HDMI. Since such a communication procedure can be appreciated by a person skilled in this art, the detailed description is omitted here for the brevity. While both HSDI transceiver 100 and the specific HSDI device act as the same type of devices, which could be either both are source or both are sink devices, the HSDI transceiver 100 is unable to detect the plugged-in specific HSDI device. In such case, the controller 108 of the HSDI transceiver 100 could make transceiver 100 to be the sink device while the specific HSDI device is a source device and vice versa by controlling the first multiplexer 106, the second multiplexer 112, the third multiplexer 116, and the fourth multiplexer 118 to make the HSDI transceiver 100 act as the source device and the sink device alternately. Please note that controlling could be performed prior of the specific HSDI device is able to communicate with the HSDI transceiver 100. For example, if the HSDI transceiver 100 acts as a source device initially and the specific HSDI device is also a source device, the controller 108 controls the first multiplexer 106 to be coupled to the receiver 104, the second multiplexer 112 to be coupled to the EDID memory 110, the third multiplexer 116 to make the power pin 114 to draw power from the specific HSDI device, and the fourth multiplexer 120 to make the hot plug detect pin 118 to have a high voltage in order to let the HSDI transceiver 100 enter a slave mode to act as a sink device. By switching HSDI transceiver 100 to a sink device, two HSDI communication devices are able to communicate with each other after the HSDI transceiver 100 enters the slave mode. While the non-detection of plug-in status occurs due to the reason of the specific HSDI device is not connected to or not completely connected to the HSDI transceiver 100 yet, the HSDI transceiver 100 could switch to a master mode to act as the source device." Hsieh at [0017]. [0018] Once the HSDI transceiver 100 detects the plugged-in specific HSDI device, the controller 108 sends out a check-ing command to check whether the specific HSDI device supports the bi-directional HSDI functionality. Note that no matter whether the HSDI transceiver 100 is a source device or a sink device, it can actively send the checking command to another HSDI device through a wireless transmission or through a CEC line. The checking command can be an opera-tion code (OP code) plus a parameter. Alternatively the con-troller 108 can check whether the specific HSDI device sup-ports the bi-directional HSDI functionality by directly reading an identifying byte in the

		EDID memory of the spe-cific HSDI device. For example, the specific HSDI device sets the parameter or the identifying byte to be '0' as not support-ing the bi-directional functionality, or sets the parameter or the identifying byte to be '1' as supporting the bi-directional functionality in special position of EDID. Alternatively, the parameter or the identifying byte can be set to other identifi-cations to represent whether the devices support the bi-direc-tional functionality and the initial types of devices, such as the source or sink device. In addition, a HSDI device could choose to reply or not to reply an unknown command. If the HSDI transceiver 100 sends out the checking command and does not receive a response from the specific HSDI device, the specific HSDI device is deemed as a non-bi-directional HSDI transceiver and does not support the bi-directional functionality." Hsieh at [0018]. "When the controller 108 receive the second switching command, the controller 108 will couple the first multiplexer 106 to the receiver 104, couple the second multiplexer 112 to the EDID memory 110, set the hot-plug detect pin 118 to be output pin and set power pin 114 to be input pin. Finally the HSDI transceiver 100 will set hot-plug signal to be high and the controller 208 will detect hot-plug in signal, then transceiver 200 will act as source device and the transceiver 100 will act as sink device. The switching command can be an OP code or an OP code plus some parameters. For example, the first switching command can be an OP code plus two parameters, the first parameter '1 ' or '0' represents that the device which receives command is requested to act as a source device or a sink device respectively. The second parameter is for confirming the operating resolution and frequency between the HSDI transceiver 100 and the specific HSDI device 200." Hsieh at [0022]. Iwamoto teaches a similar HDMI system where a first device determines whether it should be a source or a sink based on voltage signals present on the power supply line and the TDMS line connecting the devices: "Next, two monitoring units 160 and 170 that monitor the connection state between the HDMI cable 200 and the external device 20 will be described. The power supply line monitor unit 160 repeatedly detects a voltage level VL1 of a power supply line 111 among a plurality of lines connected to the connector 110 at predetermined time intervals to generate a binary level signal (hereinafter, 'power supply line level') C1." Iwamoto at [0042]. "When the external device 40 to which the connector 110 is connected via the HDMI cable 200 is

		the source device 20src, the voltage level VL1 of the power source line 111 indicates a High level (5 V). In contrast, when the connected external device 40 is the sink device 20snk, is not connected, or is not operating due to not being energized despite being connected, the voltage level VL1 indicates a low level (0 V). The power supply line level C1 has a value of either High or Low corresponding to the level of the voltage level VL1." Iwamoto at [0043]. "The TDMS line monitor unit 170 repeatedly detects a voltage level VL2 of the TDMS line (specifically, a TDMS_CLK line) 114 included in the connector 110 at predetermined time intervals to generate a binary level signal (hereinafter, "TDMS line level") C2. When the connector 110 is connected to a sink device via the HDMI cable 200, the voltage level VL2 of the TDMS line 114 indicates a High level (3.3 V)." Iwamoto at [0044]. "In contrast, when the connector 110 is connected to a source device via the HDMI cable 200 or is not connected to another device, the voltage level VL2 indicates a low level (0 V). The TDMS line level C2 has a value of either High or Low corresponding to the level of the voltage level VL2." Iwamoto at [0045]. "Operation of the HDMI attribute switching processing unit 180 will be described below with reference to FIG. 2. The HDMI attribute switching processing unit 180 determines a function J of the external device connected to the connector 110 also used for connection between the source device and the sink device based on the power source line level C1 and the TDMS line level C2. Note that "function," in relation to the external device, refers to one of four states of 'disconnected,' 'abnormal,' 'sink,' and 'source.'" Iwamoto at [0046]. "State 1: The external device 20 is not connected to the source/sink dual-purpose device 100, or no current is applied despite being connected…. In state 1 (non-connection), the source/sink dual-purpose device 100 is set to a standby mode by processing in step S2 (No), step S4 (No), step S6, and step S8. Then, the source/sink dual-purpose device 100 waits for the external device 20 to be connected while repeating the process of the flowchart of FIG. 3." Iwamoto at [0072]-[0073].

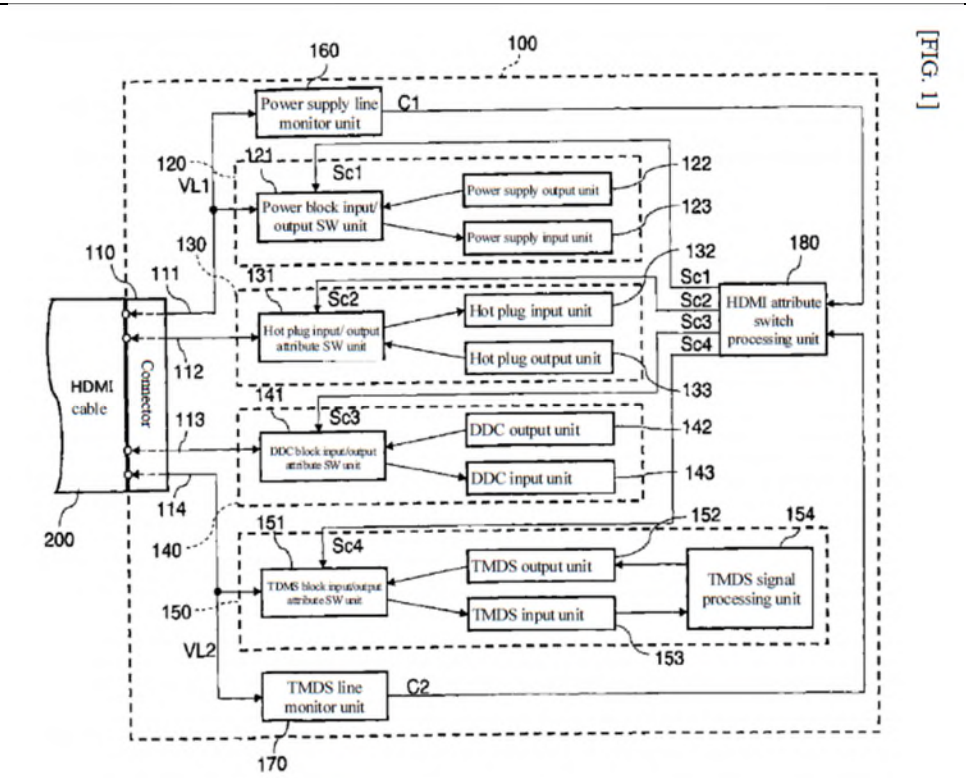
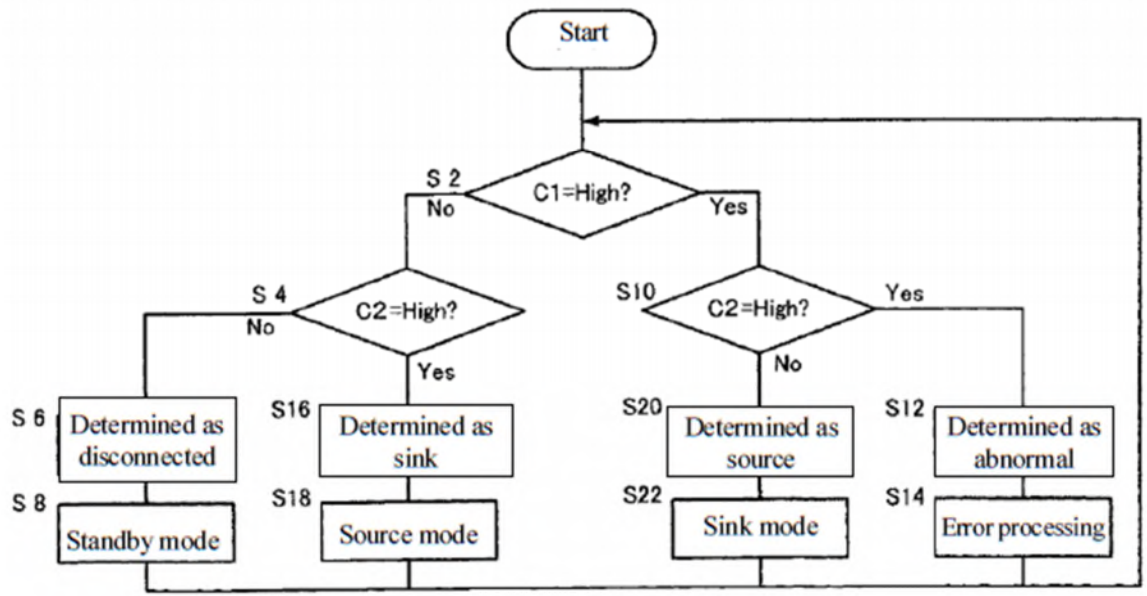
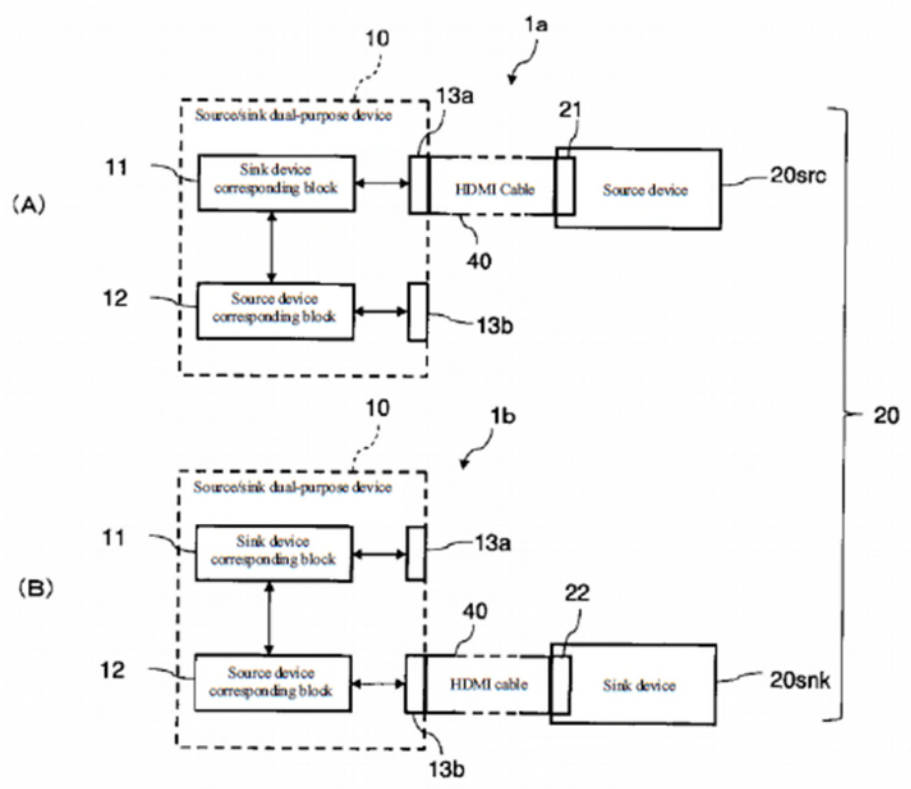
		 Iwamoto at Fig. 1.

Exhibit D-8

		 [FIG. 3] Iwamoto at Fig. 3.

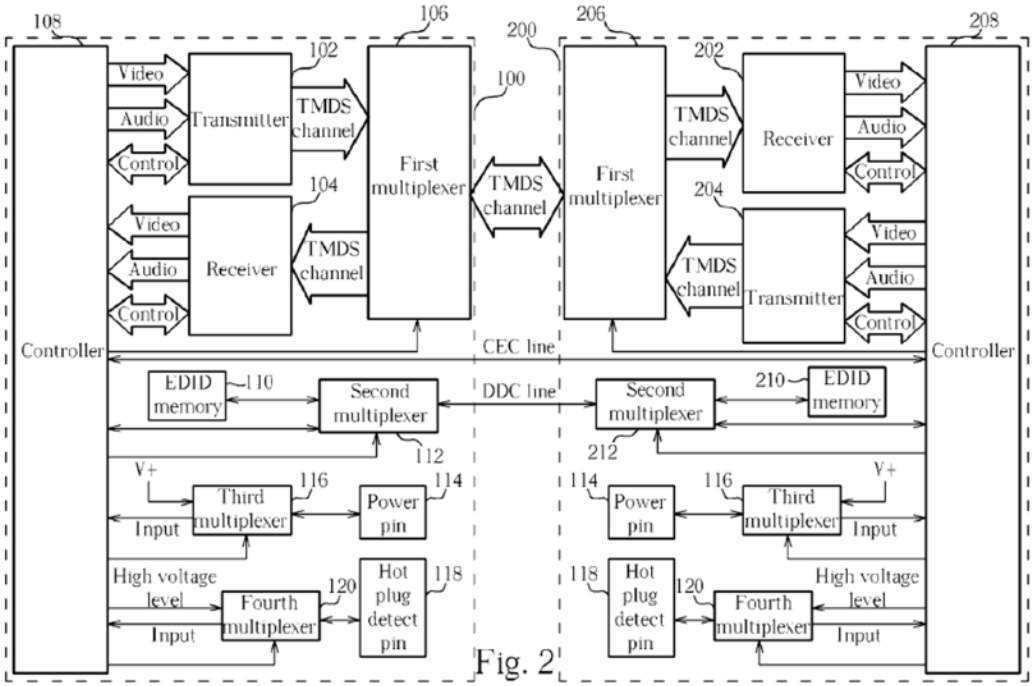
Universal Connectivity Technologies Inc.
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		 Iwamoto at Fig. 5. To the extent that Plaintiff contends that Hsieh does not explicitly or inherently disclose this element, or render obvious this element, this element is obvious in combination with one or more references and/or with the knowledge of a person of ordinary skill in the art, as set forth in Defendant's Invalidity Contentions.
1(e)	when operating the first AV device in the AV sink operation	Hsieh discloses and/or renders obvious this limitation. *See, e.g.*:

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	mode, receiving AV data provided to the first AV device via the connector and receiving power from the first supply voltage provided to the first AV device at the channel of the connector;	"Being bi-directional, the HSDI transceiver 100 can be chosen to act as a source device or a sink device depending on the user's requirement." Hsieh at [0016]. "FIG. 1 illustrates a diagram of an HSDI transceiver with bi-directional HSDI functionality according to an exemplary embodiment of the invention. The HSDI transceiver 100 comprises a transmitter 102, a receiver 104, a first multiplexer 106, a controller 108, an enhanced extended display identification data (EDID) memory 110, a second multiplexer 112, a power pin 114, a third multiplexer 116, a hot plug detect pin 118 and a fourth multiplexer 120. The transmitter 102 is for transmitting a data stream, and is substantially the same as a transmitter in a conventional HSDI source device. The receiver 104 is for receiving a data stream, and is substantially the same as a receiver in a conventional HSDI sink device.The first multiplexer 106 is controlled by the controller 108 to be selectively coupled to the transmitter 102 or the receiver 104 to let the HSDI transceiver 100 act as a source device or a sink device respectively. That is, the transmitter 102 and the receiver 104 will not work at the same time in this embodiment. The EDID memory 110 is for storing EDID, including the data format or resolution that the HSDI transceiver 100 can support. The EDID in this embodiment can further include an identifying byte to represent whether the HSDI transceiver 100 supports the novel bi-directional functionality and whether the HSDI transceiver 100 acts as a source or sink device. The identifying byte will be described in detail in the following paragraphs. The second multiplexer 112, coupled to the EDID memory 110 and the controller 108, is controlled by the controller 108 to be selectively coupled to the EDID memory 110 or coupled to the controller 108." Hsieh at [0015]. "For example, the settings of the powerpin 114 and the hot plug detect pin 118, and the connection relationships of the first multiplexer 106 and the second multiplexer 112 of the HSDI transceiver 100 are pre-set to let the HSDI transceiver 100 conform to the standard for HSDI device, such as HDMI specification." Hsieh at [0016]. “When the HSDI transceiver 100 is requested to change its working function from source device to sink device, the HSDI transceiver 100 sends a checking command to the HSDI transceiver 200, and a first switching command is then sent from the controller 108 to the controller 208 of the specific HSDI device 200 through the CEC line, and if the controller 208 supports this first switching command, it should generate a second switching command in response to the first switching command and couple the first multiplexer 206 to the transmitter 204, couple the second multiplexer

		212 to the controller 208, set hot-plug detect pin 218 to be input pin and set power pin 214 to be output pin. At this time, controller 108 will ignore the hot-plug in signal." Hsieh at [0021]. "When the controller 108 receive the second switch-ing command, the controller 108 will couple the first multi-plexer 106 to the receiver 104, couple the second multiplexer 112 to the EDID memory 110, set the hot-plug detect pin 118 to be output pin and set power pin 114 to be input pin. Finally the HSDI transceiver 100 will set hot-plug signal to be high and the controller 208 will detect hot-plug in signal, then transceiver 200 will act as source device and the transceiver 100 will act as sink device. The switching command can be an OP code or an OP code plus some parameters. For example, the first switching command can be an OP code plus two parameters, the first parameter '1 ' or '0' represents that the device which receives command is requested to act as a source device or a sink device respectively. The second parameter is for confirming the operating resolution and frequency between the HSDI transceiver 100 and the specific HSDI device 200." Hsieh at [0022]. "[A] power pin, coupled to the controller of the first high-speed digital interface transceiver, for supplying power to a specific high-speed digital interface device when the first high-speed digital interface transceiver acts as the source device, and being an input pin when the first high-speed digital interface transceiver acts as the sink device, wherein the power pin is controlled by the controller of the first high-speed digital interface transceiver." Hsieh at cl. 11.

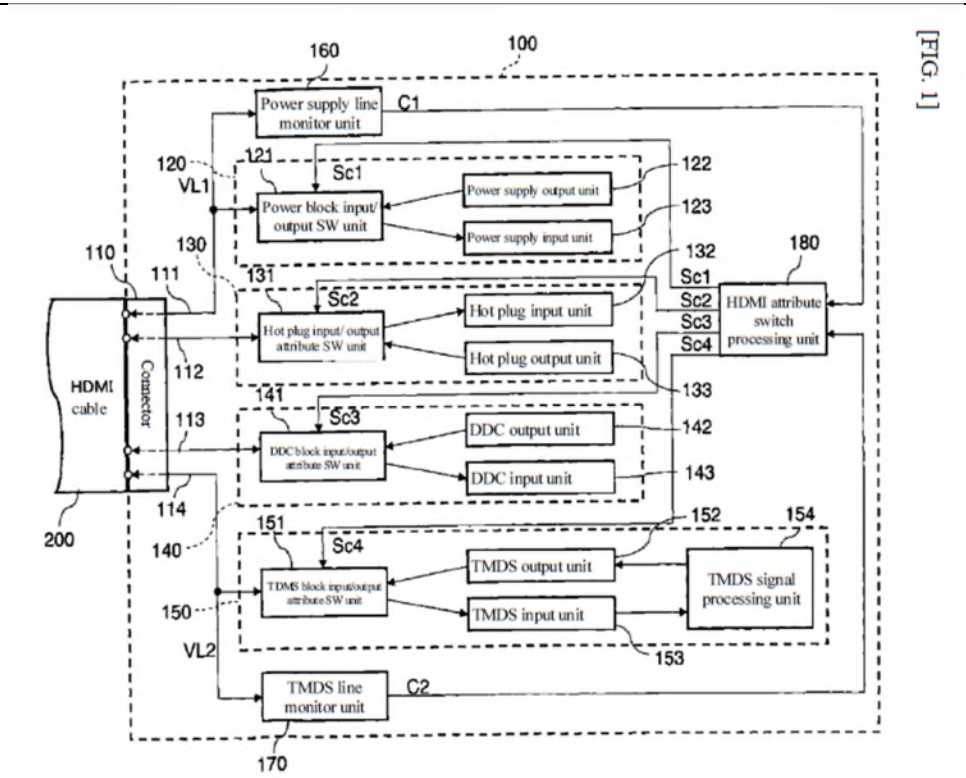
		 Fig. 2 Hsieh at Fig. 2. To the extent that Plaintiff contends that Hsieh does not explicitly or inherently disclose this element, or render obvious this element, this element is obvious in combination with one or more references and/or with the knowledge of a person of ordinary skill in the art, as set forth in Defendant's Invalidity Contentions.
1(f)	in response to determining that the first supply voltage is not provided at the channel of the connector, configuring	Hsieh in view of Iwamoto discloses and/or renders obvious this limitation. *See, e.g.*: "When the HSDI transceiver 100 is connected to a specific HSDI device, it will trigger the detection process to determine whether the specific HSDI device is plugged in according to a communication procedure specified in the specification for a variety of HSDI devices, such as HDMI. Since such a communication procedure can be appreciated by a person skilled in this art, the detailed description is omitted here for the brevity. While both HSDI transceiver 100 and the specific HSDI device act

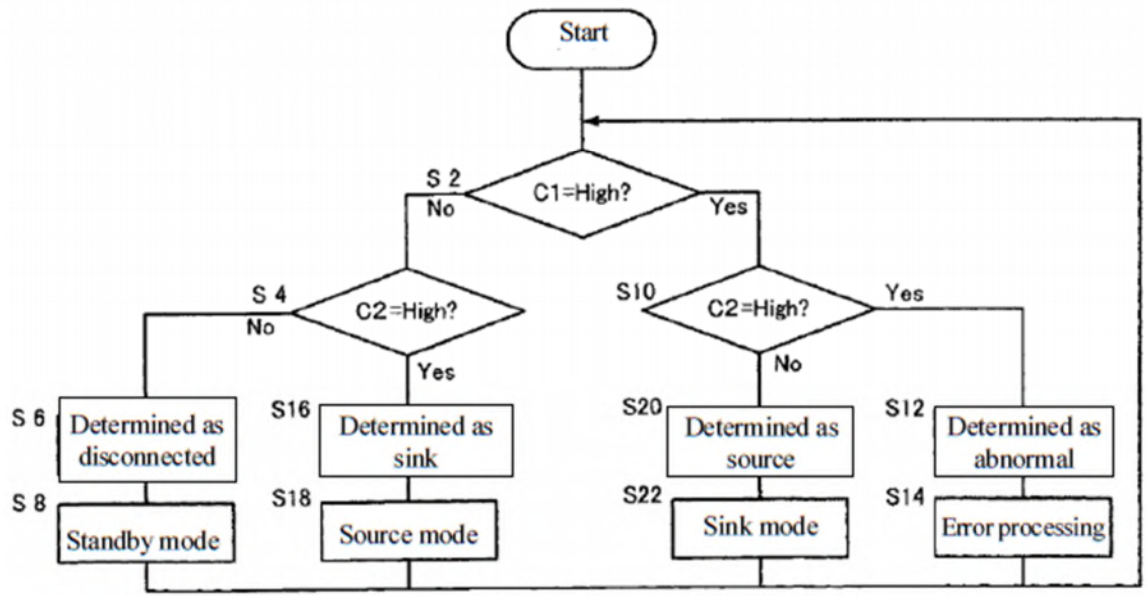
	the communication logic of the first AV device to transition the first AV device from the AV sink operation mode to an AV source operation mode; and	as the same type of devices, which could be either both are source or both are sink devices, the HSDI transceiver 100 is unable to detect the plugged-in specific HSDI device. In such case, the controller 108 of the HSDI transceiver 100 could make transceiver 100 to be the sink device while the specific HSDI device is a source device and vice versa by controlling the first multiplexer 106, the second multiplexer 112, the third multiplexer 116, and the fourth multiplexer 118 to make the HSDI transceiver 100 act as the source device and the sink device alternately. Please note that controlling could be performed prior of the specific HSDI device is able to communicate with the HSDI transceiver 100. For example, if the HSDI transceiver 100 acts as a source device initially and the specific HSDI device is also a source device, the controller 108 controls the first multiplexer 106 to be coupled to the receiver 104, the second multiplexer 112 to be coupled to the EDID memory 110, the third multiplexer 116 to make the power pin 114 to draw power from the specific HSDI device, and the fourth multiplexer 120 to make the hot plug detect pin 118 to have a high voltage in order to let the HSDI transceiver 100 enter a slave mode to act as a sink device. By switching HSDI transceiver 100 to a sink device, two HSDI communication devices are able to communicate with each other after the HSDI transceiver 100 enters the slave mode. While the non-detection of plug-in status occurs due to the reason of the specific HSDI device is not connected to or not completely connected to the HSDI transceiver 100 yet, the HSDI transceiver 100 could switch to a master mode to act as the source device." Hsieh at [0017]. [0018] Once the HSDI transceiver 100 detects the plugged-in specific HSDI device, the controller 108 sends out a check-ing command to check whether the specific HSDI device supports the bi-directional HSDI functionality. Note that no matter whether the HSDI transceiver 100 is a source device or a sink device, it can actively send the checking command to another HSDI device through a wireless transmission or through a CEC line. The checking command can be an opera-tion code (OP code) plus a parameter. Alternatively the con-troller 108 can check whether the specific HSDI device sup-ports the bi-directional HSDI functionality by directly reading an identifying byte in the EDID memory of the spe-cific HSDI device. For example, the specific HSDI device sets the parameter or the identifying byte to be '0' as not support-ing the bi-directional functionality, or sets the parameter or the identifying byte to be '1' as supporting the bi-directional functionality in special position of EDID. Alternatively, the parameter or the identifying byte can be set to other identifi-cations to represent whether the devices support the bi-direc-tional functionality and the initial types of devices, such as the source or sink device. In addition, a HSDI device could choose to reply or not to reply an unknown command. If the HSDI transceiver 100 sends out the checking

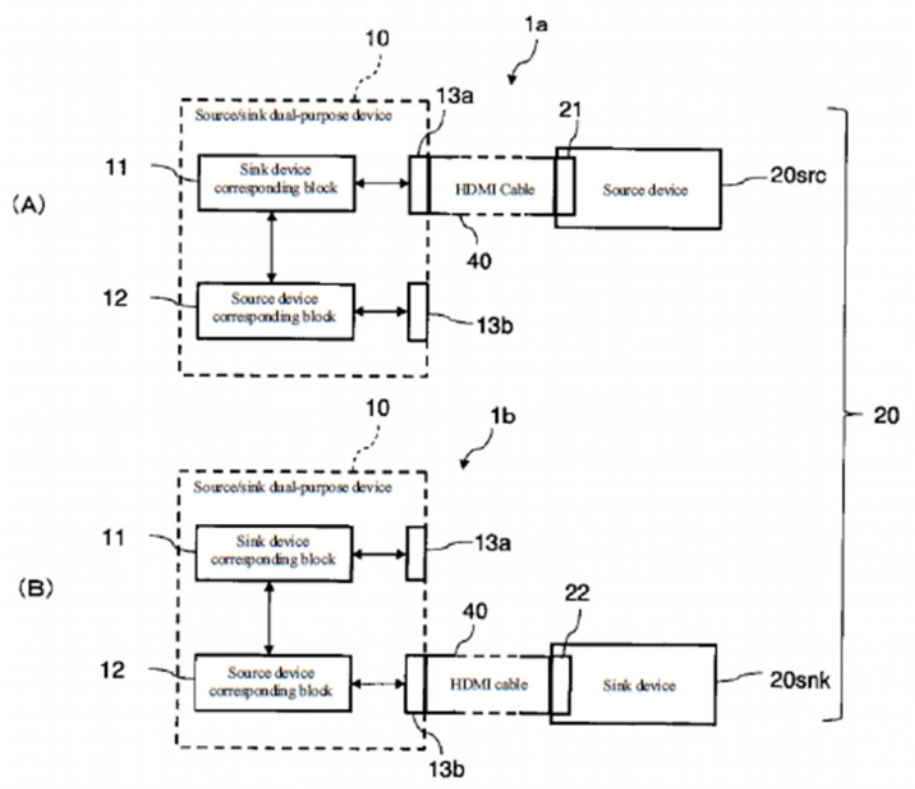
		command and does not receive a response from the specific HSDI device, the specific HSDI device is deemed as a non-bi-directional HSDI transceiver and does not support the bi-directional functionality." Hsieh at [0018]. "When the controller 108 receive the second switching command, the controller 108 will couple the first multiplexer 106 to the receiver 104, couple the second multiplexer 112 to the EDID memory 110, set the hot-plug detect pin 118 to be output pin and set power pin 114 to be input pin. Finally the HSDI transceiver 100 will set hot-plug signal to be high and the controller 208 will detect hot-plug in signal, then transceiver 200 will act as source device and the transceiver 100 will act as sink device. The switching command can be an OP code or an OP code plus some parameters. For example, the first switching command can be an OP code plus two parameters, the first parameter '1 ' or '0' represents that the device which receives command is requested to act as a source device or a sink device respectively. The second parameter is for confirming the operating resolution and frequency between the HSDI transceiver 100 and the specific HSDI device 200." Hsieh at [0022]. "Next, two monitoring units 160 and 170 that monitor the connection state between the HDMI cable 200 and the external device 20 will be described. The power supply line monitor unit 160 repeatedly detects a voltage level VL1 of a power supply line 111 among a plurality of lines connected to the connector 110 at predetermined time intervals to generate a binary level signal (hereinafter, 'power supply line level') C1." Iwamoto at [0042]. "When the external device 40 to which the connector 110 is connected via the HDMI cable 200 is the source device 20src, the voltage level VL1 of the power source line 111 indicates a High level (5 V). In contrast, when the connected external device 40 is the sink device 20snk, is not connected, or is not operating due to not being energized despite being connected, the voltage level VL1 indicates a low level (0 V). The power supply line level C1 has a value of either High or Low corresponding to the level of the voltage level VL1." Iwamoto at [0043]. "The TDMS line monitor unit 170 repeatedly detects a voltage level VL2 of the TDMS line (specifically, a TDMS_CLK line) 114 included in the connector 110 at predetermined time intervals to generate a binary level signal (hereinafter, "TDMS line level") C2. When the connector 110 is connected to a sink device via the HDMI cable 200, the voltage level VL2 of the TDMS line

		114 indicates a High level (3.3 V).” Iwamoto at [0044]. “In contrast, when the connector 110 is connected to a source device via the HDMI cable 200 or is not connected to another device, the voltage level VL2 indicates a low level (0 V). The TDMS line level C2 has a value of either High or Low corresponding to the level of the voltage level VL2.” Iwamoto at [0045]. “Operation of the HDMI attribute switching processing unit 180 will be described below with reference to FIG. 2. The HDMI attribute switching processing unit 180 determines a function J of the external device connected to the connector 110 also used for connection between the source device and the sink device based on the power source line level C1 and the TDMS line level C2. Note that “function,” in relation to the external device, refers to one of four states of ‘disconnected,’ ‘abnormal,’ ‘sink,’ and ‘source.’” Iwamoto at [0046]. “State 1: The external device 20 is not connected to the source/sink dual-purpose device 100, or no current is applied despite being connected. State 2: The connected external device 20 is abnormal. State 3: A normal sink device 20snk is connected. State 4: A normal source device 20src is connected. State 5: The connection with the external device 20 of state 2 is cut off. State 6: The connection with the external device 20 of state 3 is cut off. State 7: The connection with the external device 20 of state 4 is cut off. State 8: The connection with the external equipment of state 5, state 6, and state 7 is restored.” Iwamoto at [0072]. “In state 1 (non-connection), the source/sink dual-purpose device 100 is set to a standby mode by processing in step S2 (No), step S4 (No), step S6, and step S8. Then, the source/sink dual-purpose device 100 waits for the external device 20 to be connected while repeating the process of the flowchart of FIG. 3.” Iwamoto at [0073]. “In state 2 (abnormal), the source/sink dual-purpose device 100 is set to the error processing mode by processing in step S2 (Yes), step S10 (Yes), step S12, and step S14. Then, the source/sink dual-

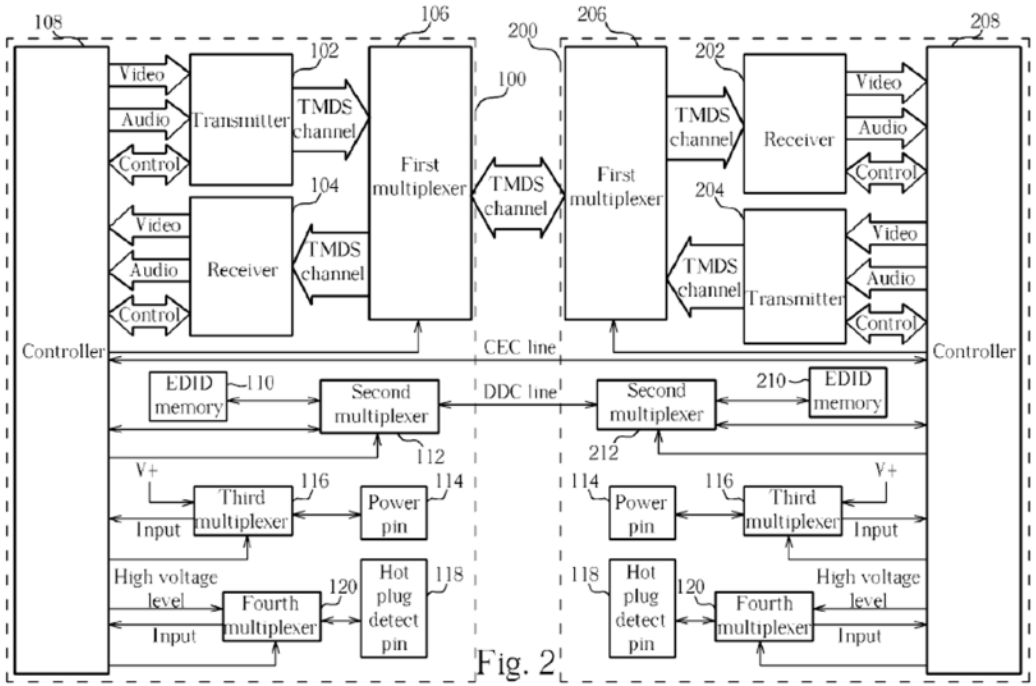
		purpose device 100 waits for the abnormality of the external device 20 to recover while repeating the process of the flowchart of FIG. 3." Iwamoto at [0074]. "In state 3 (sink), the source/sink dual-purpose device 100 is set to the source mode by the processing in step S2 (No), step S4 (Yes), step S16, and step S18. Then, the source/sink dual-purpose device 100 monitors the state of the external device 20 while repeating the process of the flowchart of FIG. 3. Then, when the state of the external device 20 changes, the operating mode of the device itself is reset in accordance with the change." Iwamoto at [0075]. "In state 4 (source), the source/sink dual-purpose device 100 is set to the sink mode by the processing in step S2 (Yes), step S10 (No), step S20, and step S22. Then, the source/sink dual-purpose device 100 monitors the state of the external device 20 while repeating the process of the flowchart of FIG. 3. Then, when the state of the external device 20 changes, the operating mode of the device itself is reset in accordance with the change." Iwamoto at [0076]. "In state 5, state 6, and state 7, the processing of state 1 described above is executed when the connection with the external device 20 in each state is cut off." Iwamoto at [0077]. "In state 8, when the connection with the external device 20 in each state is restored, processing of any of state 2, state 3, or state 4 is executed according to the state of the external device 20." Iwamoto at [0078]. "As described above, it is possible to use a single HDMI connector and automatically switch the attributes of the source device and the sink device without user operation. As a result, it is possible to reduce the cost and size of the device by reducing the number of required components, and to reduce the time and effort of the user to change the HDMI attribute (sink device/source device)." Iwamoto at [0079].

		 Iwamoto at Fig. 1.

		 [FIG. 3] Iwamoto at Fig. 3.

		 Iwamoto at Fig. 5. To the extent that Plaintiff contends that Hsieh and Iwamoto do not explicitly or inherently disclose this element, or render obvious this element, this element is obvious in combination with one or more references and/or with the knowledge of a person of ordinary skill in the art, as set forth in Defendant's Invalidity Contentions.
1(g)	when operating the first AV device in the AV source operation mode, sending AV	Hsieh discloses and/or renders obvious this limitation. *See, e.g.*: "Being bi-directional, the HSDI transceiver 100 can be chosen to act as a source device or a sink device depending on the user's requirement." Hsieh at [0016].

	data via the connector and providing a second supply voltage at the channel of the connector.	"FIG. 1 illustrates a diagram of an HSDI transceiver with bi-directional HSDI functionality according to an exem plary embodiment of the invention. The HSDI transceiver 100 comprises a transmitter 102, a receiver 104, a first multiplexer 106, a controller 108, an enhanced extended display identifi cation data (EDID) memory 110, a second multiplexer 112, a power pin 114, a third multiplexer 116, a hot plug detect pin 118 and a fourth multiplexer 120. The transmitter 102 is for transmitting a data stream, and is substantially the same as a transmitter in a conventional HSDI source device. The receiver 104 is for receiving a data stream, and is substantially the same as a receiver in a conventional HSDI sink device.The first multiplexer 106 is controlled by the controller 108 to be selectively coupled to the transmitter 102 or the receiver 104 to let the HSDI transceiver 100 act as a source device or a sink device respectively. That is, the transmitter 102 and the receiver 104 will not work at the same time in this embodi ment. The EDID memory 110 is for storing EDID, including the data format or resolution that the HSDI transceiver 100 can support. The EDID in this embodiment can further include an identifying byte to represent whether the HSDI transceiver 100 supports the novel bi-directional functionality and whether the HSDI transceiver 100 acts as a source or sink device. The identifying byte will be described in detail in the following paragraphs. The second multiplexer 112, coupled to the EDID memory 110 and the controller 108, is controlled by the controller 108 to be selectively coupled to the EDID memory 110 or coupled to the controller 108." Hhsieh at [0015]. "For example, the settings of the powerpin 114 and the hot plug detect pin 118, and the connection relationships of the first multiplexer 106 and the second multiplexer 112 of the HSDI transceiver 100 are pre-set to let the HSDI transceiver 100 conform to the standard for HSDI device, such as HDMI specification." Hsieh at [0016]. "When the HSDI transceiver 100 is a DVD recorder, the default setting of the first multiplexer 106 is to couple to the transmitter 102, the default setting of the second multiplexer 112 is to couple to the controller 108, the con troller 108 controls the third multiplexer 116 to set the power pin 114 to supply power, and controls the fourth multiplexer 120 to set the hot plug detect pin 118 to become an input node." Hsieh at [0016]. “For example, while the HSDI transceiver 100 is a source device and the specific HSDI device 200 is a sink device, initially the controller 108 of the HSDI transceiver 100 will control the first

		multiplexer 106 and the second multiplexer 112 to be source function; that is, coupling the first multiplexer 106 to the transmitter 102 and coupling the second multiplexer 112 to the controller 108 to let the HSDI transceiver 100 act as the source device. And initially the controller 208 of the HSDI transceiver 200 will control the first multiplexer 206 and the second multiplexer 212 to be sink function; that is, coupling the first multiplexer 206 to the receiver 202 and coupling the second multiplexer 212 to the EDID memory 210 to let the HSDI transceiver 200 act as the sink device." Hsieh at [0020]. "[A] power pin, coupled to the controller of the first high-speed digital interface transceiver, for supplying power to a specific high-speed digital interface device when the first high-speed digital interface transceiver acts as the source device, and being an input pin when the first high-speed digital interface transceiver acts as the sink device, wherein the power pin is controlled by the controller of the first high-speed digital interface transceiver." Hsieh at cl. 11.  Fig. 2

		Hsieh at Fig. 2. To the extent that Plaintiff contends that Hsieh does not explicitly or inherently disclose this element, or render obvious this element, this element is obvious in combination with one or more references and/or with the knowledge of a person of ordinary skill in the art, as set forth in Defendant's Invalidity Contentions.
Claim 8		
8[p]	An audio/video (AV) device comprising:	To the extent the preamble is limiting, Hsieh discloses this element and/or renders it obvious either alone or in combination with other references and/or the knowledge of one of ordinary skill in the art. *See, e.g.*: "The HSDI structure, such as High-Definition Mul-timedia Interface (HDMI), is a digital audio/video interface capable of transmitting uncompressed data streams. HSDI is compatible with Digital Rights Management technology and provides an interface between any compatible digital audio/ video source device (e.g. a set-top box, a DVD recorder, or a PC) and a compatible digital audio/video sink device, such as a digital television. Therefore, it has become a modern replacement for conventional analog standards such as SCART or RCA connectors." Hsieh at [0002]. "One objective of the invention is therefore to pro-vide a bidirectional HSDI transceiver and a method for supplying a bi-directional communication process on a HSDI device, to solve the above-mentioned problems." Hsieh at [0004]. "FIG. 1 illustrates a diagram of an HSDI transceiver with bi-directional HSDI functionality according to an exemplary embodiment of the invention." Hsieh at [0015]. "Briefly summarized, an HSDI transceiver with bi-directional functionality can switch its function to make itself compatible to a typical HSDI source device/HSDI sink device, or form a bi-directional HSDI structure coupled with another HSDI transceiver with bi-directional functionality. It can extend the combinations and the usage of the HSDI device applications. When a DVD recorder and a digital television both have bi-directional HSDI functionality, TV signals can be received and processed by the tuner in the digital TV and transformed into HSDI signals by the HSDI device in the digital TV. The HSDI signals are then transported to the DVD recorder as a video input and an audio input. In this way, the DVD recorder does not need to be provided with a

		tuner while recording a TV program. The cost of the DVD recorder is hence significantly decreased. Moreover, a user can use a mobile phone or a remote computer to control the computer at home through the Internet to tum on a TV and switch the HSDI device inside the TV to act as a source device. By utilizing the bi-directional structure of the TV and the computer at home, the TV can transport TV signals to the computer. Once the computer has transferred the HSDI TV signal into a TS bit stream, it can further transmit the TS bit stream to the user through the Internet, allowing the user to watch TV programs in any location." Hsieh at [0035]. "If the specific HSDI device supports bi-directional functionalities, as shown in FIG. 2, the first multiplexer 106 of the HSDI transceiver 100 is connected to the first multiplexer 206 of the specific HSDI device 200 by a TMDS channel (or a wireless interface in another embodiment) to transport the HSDI signals bi-directionally between the HSDI transceiver 100 and the specific HSDI device 200, the controller 108 of the HSDI transceiver 100 is connected to the controller 208 of the specific HSDI device 200 by a CEC line (or a wireless interface), and the second multiplexer 112 of the HSDI trans-ceivers 100 is connected to the second multiplexer 212 of the specific HSDI device 200 by a display data channel (DDC) line (or a wireless interface) to transport the EDID of the sink device." Hsieh at [0020].

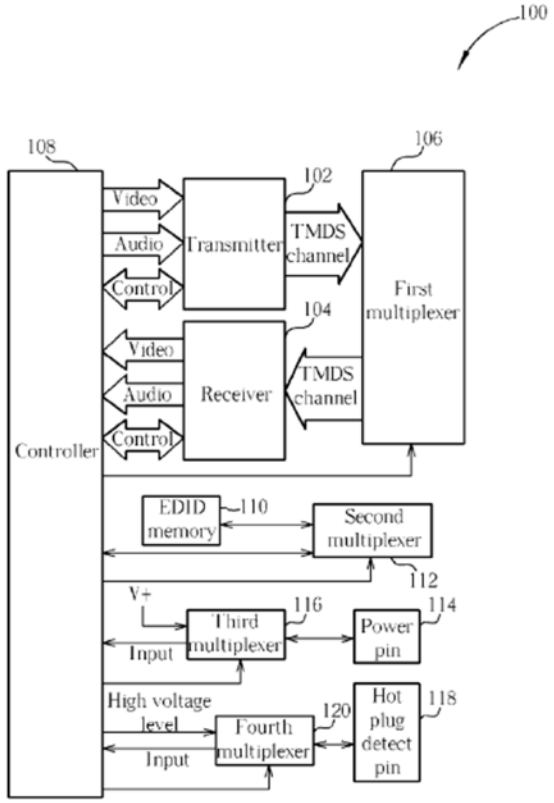
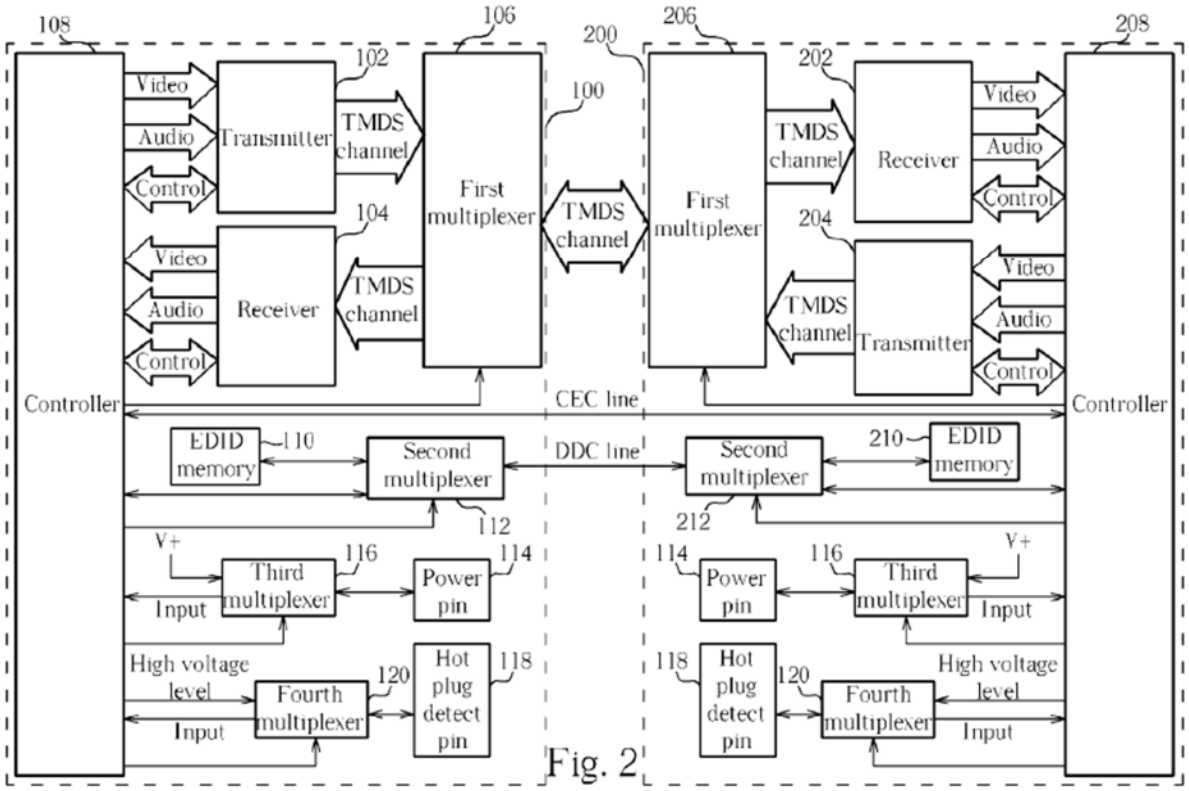


Fig. 1

Hsieh at Fig. 1.

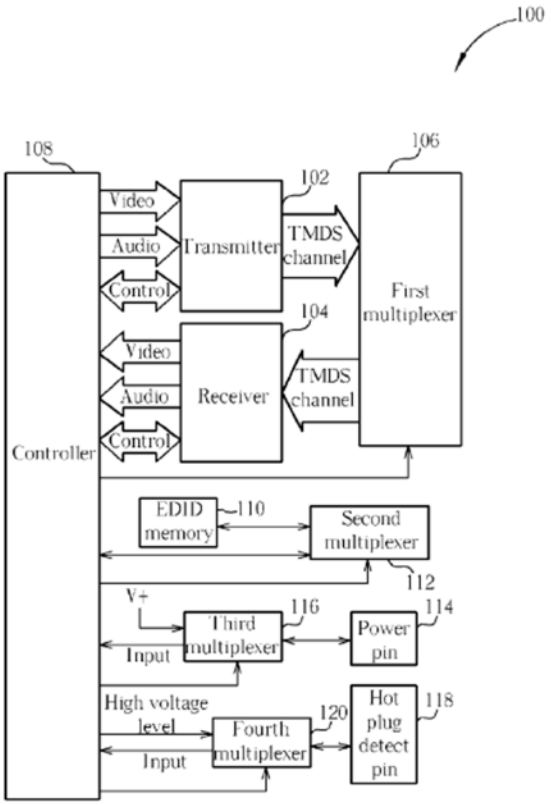
		 Fig. 2 Hsieh at Fig. 2. To the extent that Plaintiff contends that Hsieh does not explicitly or inherently disclose this element, or render obvious this element, this element is obvious in combination with one or more references and/or with the knowledge of a person of ordinary skill in the art, as set forth in Defendant's Invalidity Contentions.
8(a)	communication logic to couple to a connector, the communication logic	Hsieh in view of Iwamoto discloses and/or renders obvious this limitation. *See* exemplary disclosures and corresponding discussion for claim element 1(c) and 1(d).

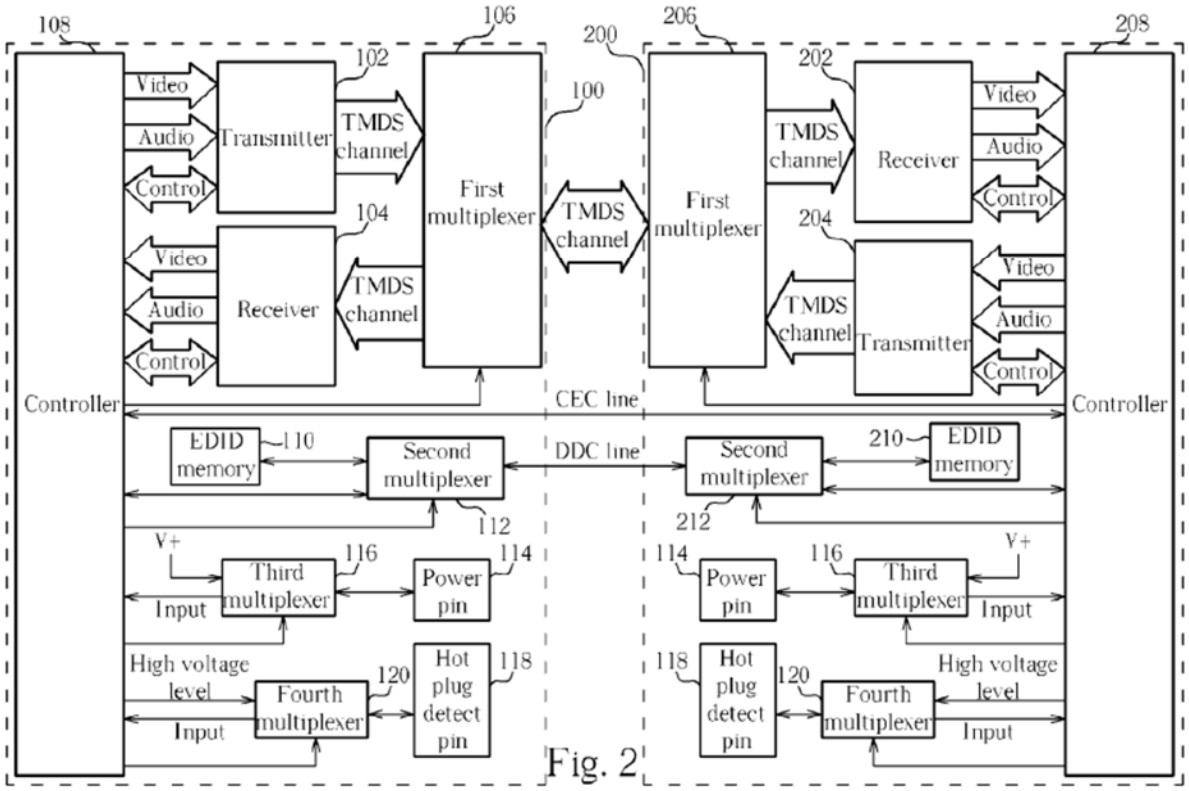
	including circuitry configured to implement:	
8(a)(1)(i)	an AV sink operation mode for the communication logic to receive AV data provided to the AV device at the connector and to receive power from a first supply voltage provided to the AV device via a channel of the connector,	Hsieh discloses and/or renders obvious this limitation. *See* exemplary disclosures and corresponding discussion for claim element 1(e).
8(a)(1)(ii)	the AV sink operation mode being a default mode of operation for the AV device, and	Hsieh discloses and/or renders obvious this limitation. *See* exemplary disclosures and corresponding discussion for claim element 1(a).
8(a)(2)	an AV source operation mode for the communication logic to send AV data from the AV device via the connector and to provide a second supply voltage at the channel of the connector; and	Hsieh discloses and/or renders obvious this limitation. *See* exemplary disclosures and corresponding discussion for claim element 1(g).

8(b)(1)	control logic including circuitry to configure the communication logic to initialize the AV device to operate in the default AV sink operation mode in response to a power-on-reset or powering up of the AV device,	Hsieh discloses and/or renders obvious this limitation. *See* exemplary disclosures and corresponding discussion for claim element 1(a).
8(b)(2)	to continue operating the AV device in the AV sink operation mode in response to determining that the first supply voltage is provided at the channel of the connector, and to configure the communication logic to transition the AV device from the AV sink operation mode to the AV source operation mode in response to determining that the first supply voltage is not provided at the	Hsieh in view of Iwamoto discloses and/or renders obvious this limitation. *See* exemplary disclosures and corresponding discussion for claim element 1(d), 1(f), and 1(c).

	channel of the connector.	
Claim 11		
11(a)	The device of claim 8, further comprising: detector logic to detect, while the communication logic is in the default operation mode, a coupling of the AV device to another AV device via the connector; and	Hsieh in view of Iwamoto discloses, expressly or inherently, the device of claim 8 under any proposed construction, and further discloses and/or renders obvious limitation 11(a). *See* exemplary disclosures and corresponding discussion for claim 8 and claim element 1(b).
11(b)	wherein the communication logic is further configured to perform an AV data exchange with the other device in response to the detection.	Hsieh discloses and/or renders obvious this limitation. *See* exemplary disclosures and corresponding discussion for claim element 1(e) and 1(g).
Claim 14		
14[p]	A system comprising:	To the extent the preamble is limiting, Hsieh discloses this element and/or renders it obvious either alone or in combination with other references and/or the knowledge of one of ordinary skill in the art. *See, e.g.*: "The HSDI structure, such as High-Definition Mul-timedia Interface (HDMI), is a digital audio/video interface capable of transmitting uncompressed data streams. HSDI is compatible with Digital Rights Management technology and provides an interface between any compatible digital

		audio/ video source device (e.g. a set-top box, a DVD recorder, or a PC) and a compatible digital audio/video sink device, such as a digital television. Therefore, it has become a modern replacement for conventional analog standards such as SCART or RCA connectors." Hsieh at [0002]. "One objective of the invention is therefore to pro-vide a bidirectional HSDI transceiver and a method for supplying a bi-directional communication process on a HSDI device, to solve the above-mentioned problems." Hsieh at [0004]. "FIG. 1 illustrates a diagram of an HSDI transceiver with bi-directional HSDI functionality according to an exemplary embodiment of the invention." Hsieh at [0015]. "Briefly summarized, an HSDI transceiver with bi-directional functionality can switch its function to make itself compatible to a typical HSDI source device/HSDI sink device, or form a bi-directional HSDI structure coupled with another HSDI transceiver with bi-directional functionality. It can extend the combinations and the usage of the HSDI device applications. When a DVD recorder and a digital television both have bi-directional HSDI functionality, TV signals can be received and processed by the tuner in the digital TV and transformed into HSDI signals by the HSDI device in the digital TV. The HSDI signals are then transported to the DVD recorder as a video input and an audio input. In this way, the DVD recorder does not need to be provided with a tuner while recording a TV program. The cost of the DVD recorder is hence significantly decreased. Moreover, a user can use a mobile phone or a remote computer to control the computer at home through the Internet to tum on a TV and switch the HSDI device inside the TV to act as a source device. By utilizing the bi-directional structure of the TV and the computer at home, the TV can transport TV signals to the computer. Once the computer has transferred the HSDI TV signal into a TS bit stream, it can further transmit the TS bit stream to the user through the Internet, allowing the user to watch TV programs in any location." Hsieh at [0035]. "If the specific HSDI device supports bi-directional functionalities, as shown in FIG. 2, the first multiplexer 106 of the HSDI transceiver 100 is connected to the first multiplexer 206 of the specific HSDI device 200 by a TMDS channel (or a wireless interface in another embodiment) to transport the HSDI signals bi-directionally between the HSDI transceiver 100 and the specific HSDI device 200, the controller 108 of the HSDI transceiver 100 is connected to the controller 208 of the specific HSDI device 200 by a CEC line (or a wireless interface), and the second multiplexer 112 of the

		HSDI trans-ceivers 100 is connected to the second multiplexer 212 of the specific HSDI device 200 by a display data channel (DDC) line (or a wireless interface) to transport the EDID of the sink device." Hsieh at [0020].  Fig. 1 Hsieh at Fig. 1.

		 Fig. 2 Hsieh at Fig. 2. To the extent that Plaintiff contends that Hsieh does not explicitly or inherently disclose this element, or render obvious this element, this element is obvious in combination with one or more references and/or with the knowledge of a person of ordinary skill in the art, as set forth in Defendant's Invalidity Contentions.
14(a)	a connector;	Hsieh discloses and/or renders obvious this limitation. *See* exemplary disclosures and corresponding discussion for claim element 1(c).

14(b)	communication logic of an audio/video (AV) device coupled to the connector, the communication logic including circuitry configured to implement:	Hsieh in view of Iwamoto discloses and/or renders obvious this limitation. *See* exemplary disclosures and corresponding discussion for claim element 1(c) and 1(d).
14(b)(1)	an AV sink operation mode for the communication logic to receive AV data provided to the system at the connector and to receive power from a first supply voltage provided to the system at a channel of the connector, the AV sink operation mode being a default mode of operation for the system, and	Hsieh discloses and/or renders obvious this limitation. *See* exemplary disclosures and corresponding discussion for claim element 1(a) and 1(e).
14(b)(2)	an AV source operation mode for the communication logic to send AV data from the system via the connector and to provide a second	Hsieh discloses and/or renders obvious this limitation. *See* exemplary disclosures and corresponding discussion for claim element 1(g).

	supply voltage at the channel of the connector; and	
14(c)	control logic including circuitry to configure the communication logic to initialize the AV device to operate in the default AV sink operation mode in response to a power-on-reset or powering up of the AV device, to continue operating the AV device in the AV sink operation mode in response to determining that the first supply voltage is provided at the channel of the connector, and to configure the communication logic to transition the AV device from the AV sink operation mode to the AV source operation mode in response to	Hsieh in view of Iwamoto discloses and/or renders obvious this limitation. *See* exemplary disclosures and corresponding discussion for claim element 1(a), 1(c), 1(d), and 1(f).

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	determining that the first supply voltage is not provided at the channel of the connector.	