

that a person of ordinary skill in the art would understand that Kashi includes such pin ordering, Dr. Russ provided no rationale why such pin ordering had to be included in the reference. (SIB at 115.) The Staff went on to assert that by stating a person of ordinary skill could choose pin ordering based upon compatibility considerations, Dr. Russ admitted that such pin ordering is not necessarily present in the reference. (*Id.*)

Analysis

Samsung argues that all of the asserted claims of the ‘501 patent are anticipated by U.S. Patent No. 7,836,216 (“Kashi”) to Kashi et al., titled “Connector System For Supporting Multiple Types of Plug Carrying Accessory Devices.” (RX-897, cover page.) In support, Samsung relies primarily on the testimony of its expert, Dr. Russ, who testified in detail that Kashi anticipates the asserted claims of the ‘501 patent. (*See* RX-3450C (Russ DWS) at Q&A 432, 435-453.)

Kashi issued on November 16, 2010, from an application filed on August 23, 2005. (RX-897, cover page.) The application was published on March 1, 2007. (*Id.*; RX-638.) The Kashi application and the Kashi patent are essentially the same.²¹ (compare RX-638 with RX-897.) The August 23, 2005, effective filing date of Kashi is prior to the May 2006 date of invention that Apple asserts for the ‘501 patent. Thus, Kashi is prior art under 35 U.S.C. § 102(e).

²¹ The published application was cited by the examiner during prosecution of the ‘501 patent. (JX-12 at 183.) Although Samsung is asserting the Kashi patent and not the Kashi application as anticipatory prior art, I see no reason why in light of the relationship and essential similarity between the two references that the additional burden due a reference that was considered by the patent examiner not apply to the Kashi patent in this instance. However, even if Samsung’s burden of proving anticipation by the Kashi patent was not especially heavy, the evidence presented by Samsung, as discussed in more detail, *infra*, is certainly not clear and convincing in any regard.

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Each of the asserted claims of the ‘501 patent require a “ground connector ... positioned between the microphone connector and either the left or right connector.” Dr. Russ admits that Kashi does not explicitly disclose the ground pin located between the microphone pin and either of the audio pins, but nevertheless testified that Kashi discloses this limitation, stating that “[b]ecause Kashi teaches a jack that can reconfigure its contacts, a person of ordinary skill would understand Kashi to include all 24 possible configurations for four-prong jacks with four unique connectors (that is, $4 \times 3 \times 2 \times 1 = 24$), including the ones claimed in the ‘501 patent, to ensure backward compatibility.” (RX-3450C (Russ DWS) at Q&A 444-445.) According to Dr. Russ, Kashi “teaches a system that can dynamically reassign the signals of each pin in the jack” and that although Kashi does not list all 24 possible combinations of pins, a person of ordinary skill in the art would be aware of such combinations and “choose pin ordering based on compatibility considerations.” (*Id.* at Q&A 445.)

Anticipation is proven by showing that a single reference discloses each and every limitation of a claim as arranged in the claim either expressly or inherently. *Therasense, Inc. v. Becton, Dickinson and Co.*, 593 F.3d 1325, 1332 -1333 (Fed. Cir. 2010) (“For a claim to be anticipated, each claim element must be disclosed, either expressly or inherently, in a single prior art reference, and the claimed arrangement or combination of those elements must also be disclosed, either expressly or inherently, in that same prior art reference.”); *Bettcher Industries, Inc. v. Bunzl USA, Inc.*, 661 F.3d 629, 652 (Fed. Cir. 2011) (“Under 35 U.S.C. § 102, anticipation exists when a single piece of prior art satisfies, either expressly or inherently, every limitation of the claimed invention.”) Dr. Russ admits that Kashi does not expressly disclose the claimed configuration with the “ground connector ... positioned between the microphone

connector and either the left or right connector.” Thus, Dr. Russ, and Samsung by extension, must be arguing that Kashi inherently discloses the claimed limitation.

To prove that an element is inherently disclosed in a reference, the evidence must clearly and convincingly show that the missing element is necessarily present in the reference. *In re Cruciferous Sprout Litig.*, 301 F.3d 1343, 1349 (Fed. Cir. 2002) (“Inherency can be established when “prior art necessarily functions in accordance with, or includes, the claimed limitations.”). “Inherency, however, may not be established by probabilities or possibilities. The mere fact that a certain thing may result from a given set of circumstances is not sufficient.” *Cont’l Can Co. USA, Inc. v. Monsanto Co.*, 948 F.2d 1264, 1269 (Fed. Cir. 1991) (quoting *In re Oelrich*, 666 F.2d 578, 581 (CCPA 1981)).

Although Dr. Russ testifies that one of ordinary skill in the art would understand that the claimed configuration with the “ground connector ... positioned between the microphone connector and either the left or right connector” is included in Kashi, Dr. Russ has not opined that the reference must disclose such an ordering, nor has Dr. Russ provided a rationale as to why Kashi must disclose such an ordering. (*See* RX-3450C (Russ DWS) at Q&A 444-445.) In fact, in stating that “[a] person of ordinary skill would *choose* pin ordering based on compatibility considerations,” Dr. Russ really suggests that such a pin ordering is not necessarily present in the reference. (*Id.* (emphasis added).) That is to say that if the alleged pin ordering is determined by choice, then it may or may not be present, as its presence depends according to Dr. Russ on compatibility considerations. Considering the foregoing, I find that Samsung has failed to meet its burden of showing by clear and convincing evidence that Kashi necessarily discloses the “ground connector ... positioned between the microphone connector

and either the left or right connector.” Regardless, as discussed in more detail below, the evidence suggests strongly that Kashi does not contemplate moving the ground connector from the sleeve position (*i.e.*, the position farthest from the tip), much less necessarily doing so.

In each of the thirteen figures in Kashi that depicts a connector arrangement the ground connector is always shown at the sleeve position. (*See* RX-897 at Figs. 3A-3C, 4, 7, 10A, 10B, 11B, 11C, 12B, 13A-13C; *see also id.* at 11:54-60 (“[w]hen inserted, the signal on pin 1 (corresponding to signal line 703 . . .) is interpreted as left channel audio output. The signal on pin 2 (corresponding to signal line 702 . . .) is interpreted as right channel audio output. The signal on pin 3 (corresponding to signal line 704 . . .) is used to carry the microphone signal. Pin 4 is grounded”).) Moreover, Kashi does not disclose moving the ground signal from the connector at the sleeve position to any other position, let alone a position that satisfies the ‘501 patent. (CX-2599C (Phinney RWS) at Q&A 101.) For example, Figure 7 in Kashi depicts several connectors in a jack labeled 701, 702, 703, and 704, with connector 701 statically connected from the sleeve position to a ground source. (RX-897, at Fig. 7; *see also id.* at 9:39-40 (“with signal line 701 corresponding to ground”).) Kashi discloses reconfiguring connectors 702, 703, and 704, but never discloses reconfiguring the ground connector 701. (*Id.* at 10:53-55 (“If the detected device is a stereo speaker, for example, the audio output 762 and 763 may be routed to signal lines 702 and 703”); *id.* at 10:63-67 (“If the measured signal lines 722, 723, and 724 confirm the presence of the microphone, then multiplexer 730 drives one of the signal lines 703 (EXT_MIC1_BIAS) or signal line 704 (EXT_MIC2_BIAS) to be the external microphone signal 780.”).) In fact, the evidence shows that none of Kashi’s “Signal Line Configuration Examples” in the specification discloses assigning a signal other than ground to the sleeve

position or assigning ground to any position other than at the sleeve. (*Id.* at 11:8-12:20.) Given Kashi's disclosure of reconfiguring all of the connectors *but* the ground connector, the evidence suggests that Kashi did not intend for the ground connector to be in any other position than at the sleeve position. Accordingly, I find that Samsung has failed to meet its burden of showing of showing by clear and convincing evidence that Kashi necessarily discloses the "ground connector ... positioned between the microphone connector and either the left or right connector."

Samsung argues that Kashi discloses that any connector position may be assigned to ground since Kashi discloses that "signal lines 505" can be configured "whether they carry audio data, microphone data, or nothing." (*See* RX-3450C (Russ DWS) at Q&A 452 (quoting RX-897 at 5:58-62).) Contrary to Samsung's suggestion, however, the evidence shows that in Kashi ground is not the referred to "signal line" as it does not carry any of those signals, including "nothing." Kashi discloses numerous embodiments in which receptacle contacts actually carry nothing, *i.e.*, they are unused. (RX-897 at Figs. 11C, 13B, and 13C.) In those embodiments, the evidence shows that ground is always depicted at the sleeve position. (*Id.*) Thus, I find Samsung's argument not persuasive.

Samsung also argues that Apple's reliance on the iPad 2 for domestic industry demonstrates that Kashi practices the claimed connector configuration, because both the iPad 2 and Kashi allegedly disclose a similar dynamic assignment of pin ordering. (*See* RX-3450C (Russ DWS) at Q&A 454.) While the iPad 2 is capable of

in accordance with claim 1. (*See* CX-2599C (Phinney RWS) at Q&A 102.)

By contrast, in every mode disclosed in Kashi the ground signal is assigned to the sleeve position and is never disclosed as being reconfigurable. (*See* RX-897 at Figs. 10B, 12A, 12B, 13A-13C.)

Thus, I also find this argument of Samsung not persuasive.

For the reasons discussed above, I find that Samsung has failed to show by clear and convincing evidence that Kashi discloses the claimed jack configuration with the “ground connector ... positioned between the microphone connector and either the left or right connector.” Because Samsung has failed to show that Kashi discloses this limitation of each of the asserted claims either expressly or inherently, I find that Samsung has failed to prove that Kashi anticipates the asserted claims of the ‘501 patent.

b. iPod Video

The Parties’ Positions

Apple argues the iPod Video does not anticipate because it does not contain or disclose “microphone detection circuitry operative to determine whether the received plug is the microphone type or the non-microphone type; and provide a signal indicative of whether the received plug is the microphone type of the non-microphone type.” Apple alleges Samsung does not prove the circuitry makes the determination whether iPod Video’s jack has received a headphone accessory or the specialized video cable that is capable of outputting a video signal. Apple points out that before iPod Video is able to output a video signal via this cable, a user must manually change a setting on the device. (CIB at 195 citing: CX-2599C (Phinney), Q&As 145-46; *see also* CX-725 at 36.) Therefore, instead of using circuitry to determine plug type and that provide a signal indicative of that type, the iPod Video requires users to know what they

plug in and for the users to change a setting. Apple asserts Samsung attempts to overcome this fact by “employ[ing] unadopted and untenable claim constructions in an attempt to show that this irrelevant prior art practices these limitations.” (CIB at 194 and CRB at 88) Specifically, Apple alleges Samsung’s expert employs a construction of “microphone connector” so broad as to read out the word microphone (CIB 195 citing: Tr. at 1827:22-1828:4) while also admitting the iPod video does not literally meet the definition of a microphone connector (CIB 194 citing: Tr. at 1827:9-22; 1835:18-1837:17).

In addition, Apple notes that Samsung also attempts to improperly redefine certain types of plugs defined in the patent as 4-pole and 3-pole plugs and essentially offers absurd constructions of an AV cable as a microphone type of plug (CRB at 88-89). Apple also asserts that: (1) because the claims of the ‘501 patent require detection circuitry make the determination, not a user, the iPod Video cannot anticipate the ‘501 patent; (2) Samsung cannot and has not shown the iPod Video comprises a “microphone connector electronically coupled to CODEC circuitry” ; and (3) Without an electrical connection between the microphone connector and the CODEC there is no anticipation because that is what the ‘501 patent requires. (*Id.*)

Samsung argues that claim 1 of the ‘501 patent is anticipated by the iPod Video portable media player that is able to differentiate between a headphone plug and a plug with video output capabilities and which was in public use as early as October 12, 2005. (RIB at 239.) Samsung avers that both Apple and the Staff mistakenly focus on the microphone connector signal, while the entire purpose of the ‘501 patent is to detect the presence of a microphone signal on an accessory. (RRB at 95.) Samsung notes the microphone detection circuitry of the ‘501 patent does not and cannot detect the presence of a microphone signal or any other specific signal.

Rather, the detection circuitry can only tell whether there is something other than ground connected to the microphone connector. (RRB at 95-96.) Moreover, even though the word signal is not present in Claim 1 of the '501 patent, Apple and the Staff argue against anticipation because the iPod video connector carries a video signal and thus erroneously read in a limitation from written description of the patent into claim 1. The bottom line for Samsung is its argument that the microphone connector refers to the connector connected to the fourth pole of the plug. (RIB at 240-241.)

The Staff argues Samsung fails to meet its burden of establishing the iPod Video includes a microphone connector that is electrically coupled to CODEC circuitry and microphone detection circuitry. (SIB at 117.) More specifically, the Staff alleges that all Dr. Russ (Samsung's expert) has done is allege the iPod Video device inherently includes a CODEC but does not opine on whether the claimed coupling is present in the device. Instead, the Staff points out that the iPod Video does not contain a microphone connector but does contain a video connector. (*Id.*, citing: RX-3450C, Q&A 625.) Moreover, the Staff contends the evidence establishes that a video signal associated with a video connector is different from a microphone signal associated with a microphone connector (*Id.*, citing: Tr. 1849:3-6 (noting that "a video signal has a different format, uses different voltage levels and performs a different function than a microphone signal").) Thus, Respondent has failed to meet its burden of proof.

Analysis

The iPod Video is a portable MP3 player that includes a jack for a headphone accessory (CX-2599C (Phinney) at Q&A 144). If a specific type of video cable is inserted into the headphone jack, the iPod Video has the capability to output a video signal to an external monitor like a

television (*Id.*). The jack does contain a video connector at the sleeve position to output video signal.

Claim 1 of the '501 patent provides:

1. A system for detecting which type of plug is received by a portable electronic device, the system comprising:

a jack to receive a plug selected from at least a microphone type and a non-microphone type, wherein the jack comprises a microphone connector electrically coupled to CODEC circuitry and microphone detection circuitry, a ground connector coupled to a ground source, a right connector coupled to the CODEC circuitry, and a left connector coupled to the CODEC circuitry, and wherein the ground connector is positioned between the microphone connector and either the left connector or the right connector; the microphone detection circuitry operative to: determine whether the received plug is the microphone type or the non-microphone type; and provide a signal indicative of whether the received plug is the microphone type or the non-microphone type.

As noted by the Staff (SIB at 102), there are or should be no disputed claim terms for the '501 patent, *i.e.*, I find the claims construction relevant to my analysis includes: (1) "CODEC circuitry"— "coder/decoder capable of converting a digital audio signal into an analog audio signal and capable of converting an analog audio signal into a digital audio"; (2) "microphone detection circuitry"— "circuitry that determines whether a received plug is a microphone type or a non-microphone type;" (3) "left connector"— "a connector that carries an audio signal component"; and (4) "right connector"— "a connector that carries an audio signal component." (Order No. 16 - CX-2352C.) As Apple alleges (CIB at 195) the only term used in claim 1 is "microphone connector." Hence, there is no support for construction of claim 1 excluding the term "microphone connector" advocated by Samsung.

My analysis of the parties' arguments leads me to conclude the most relevant excerpts from claim 1 pertaining to allegations of anticipation by the iPod video are: "the jack comprises a

microphone connector electrically coupled to CODEC circuitry and microphone detection circuitry” and “the microphone detection circuitry operative to: determine whether the received plug is the microphone type or the non-microphone type; and provide a signal indicative of whether the received plug is the microphone type or the non-microphone type.” Thus, for the iPod Video to anticipate, it must contain a microphone jack with a microphone connector that is electrically connected to both the CODEC and microphone detection circuitry. Then, the iPod Video’s detection circuitry must be able to determine whether what is plugged into it is a microphone plug or other and provide a signal indicating what kind of plug has been plugged into the jack.

I find Samsung falls far short of establishing the iPod Video includes a microphone connector that is electrically coupled to CODEC circuitry and microphone connection circuitry or that it can detect what kind of plug has been inserted and signal accordingly. I agree with the Staff that all Dr. Russ has actually accomplished is to allege the iPod Video device inherently includes a CODEC, not that the claimed coupling is present in the iPod Video. (SIB at 117 and See CX-2599C (Phinney) at Q&A 149.) Moreover, as also argued by the Staff (*Id.*), Dr. Russ acknowledges the device includes a video connector but also fails to include the claimed “microphone connector”. Hence, while Dr. Russ may claim the circuitry is “inherent” I find no credible testimony the iPod Video contains an electrical coupling to the detection circuitry required by the plain language of Claim 1 of the ‘501 patent ((RX-3450 (Russ) Q&A 611 et al, specifically Q&As 624, 627, 628 and see also 630). Instead, I find Dr. Phinney’s contrary testimony to be the only credible testimony on this point (CX-2599C, Q&As 148-149 in particular, but Q&As 145-147 are relevant.)

Another flaw in Dr. Russ' testimony is that he confuses what is inherent in the iPod Video's operability with what a person of ordinary skill in the art would expect (*e.g.*, RX-3450, Q&As 624, 627, and 628). Simply put, since Apple did not configure the iPod Video as he assumes and I have found it is not, then he is wrong (*See* CX-2599C).

The logic behind Apple's argument is compelling. Because the only way an iPod Video can process a video signal (non-microphone type signal), as opposed to a microphone type signal, is through intervention of the user, it is axiomatic that there is no electrical connection occurring between the CODEC and the detection circuitry capable of detecting that a non-microphone (video) plug was inserted in the iPod Video. (CX-2599C (Phinney) at 41, Q&As 145-46; *see also* CX-725 at 36.) Accordingly, there is no way the iPod Video meets the requirement in Claim 1 for "microphone detection circuitry operative to: determine whether the received plug is the microphone type or the non-microphone type; and provide a signal indicative of whether the received plug is the microphone type or the non-microphone type."

2. Obviousness

a. The TI CODEC in combination with the iPod Video

The Parties' Arguments

Samsung alleges that consistent with the PTO finding every element other than connector order was found in the prior art, Dr. Phinney and Apple further admit that other prior art contains *every* element of the asserted claims except for connector order. (*See* CX-2599C, Q&A 124).

Samsung asserts the prior art consists of an actual CODEC with an accompanying user guide made and sold by Texas Instruments, called the TI CODEC. (RIB at 246). The TI CODEC is a "a low power, high-performance audio codec" that features "Auto-Detection of Jack

Insertion, Headset Type, and Button Press.” (RX-0420, RDX-28C-1.) The TI CODEC is used with a jack constructed to receive at least a non-microphone type and a microphone type of plug (RIB at 246), and was known, used, in public use, or on sale no later than May of 2005. (RX-3450C Q&As 497-525, RX-3241, RX-0420.)

Samsung notes Dr. Russ testified the TI CODEC contains every limitation of every asserted claim except for the claimed connector order. (RX-3450C, Q&As 497-525.) Samsung asserts Dr. Phinney agrees and stated the only basis for validity in light of this art is that “it would not have been obvious to one of skill in the art to move the position of the ground connector from the end of the plug to between two other connectors.” (CX-2599 at Q&A 124.)

Samsung disputes that the connection order has any significant meaning, for the ground can only go in one of four positions, which is a finite choice or a person of ordinary skill to choose from (RIB at 247 and 252). Samsung also asserts that Apple admits there was to be backward capability with the existing iPod Video and other products was the only reason for the claimed connector order of the ‘501 patent (RIB at 248-251). Because Apple admits that market forces drove the connector choice, Samsung, citing *KSR Int’l. Co. v. Teleflex Inc.*, 550 U.S. 398 (2007), alleges applicable precedent requires a finding of obviousness because market forces drove the ‘501 connector order as a predictable variation. (RIB at 251 and RRB at 99- 102.) In summary, Samsung argues:

The evidence and admissions by Apple closely track the telltale signs compelling a finding of obviousness: (1) there are a finite number of places to put ground – four; (2) the connector order was obvious to try (RX-3450C, Q 398 at 157); (3) the variations were predictable – only a few possibilities; (4) the results were predictable – compatibility; (5) market forces like backwards compatibility drove the choice of connector order; (6) backwards compatibility with prior art was the actual motivating factor for the connector order in the ‘501 patent; and (7) there is no technical advantage for the connector order is described in the ‘501

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patent, as Apple's inventor admits (Johnson Tr. 861:17-24).

If there was a case for obviousness, this is it.

(RIB at 254). Samsung further pursues its obvious argument by alleging the TI CODEC along with the iPod Video makes the '501 patent obvious. (RIB at 259-260.) Samsung alleges the iPod Video constituted sufficient motivation for the '501 as admitted by Apple's witnesses.

Apple's summarized its position in its Reply Brief as follows:

Samsung argues strenuously and at length that the specific connector ordering disclosed in the '501 patent would have been obvious. (RIB at 246-54.) Samsung rests its entire obviousness case on this proposition, but as the Staff aptly states, "none of the references, alone or in combination, teaches or suggests the claimed positioning of the connectors" and as Samsung's expert admitted, the connector ordering claimed in the '501 patent is "[n]ot necessarily" obvious. (SIB at 119; RX-3450C at 206, Q489.) Even Samsung, scouring the Earth for prior art for months, could not find a single audio reference that showed ground in any position but the sleeve. On this basis alone, Samsung cannot meet its burden for proving obviousness. (SIB at 118-19; CIB at 203-04.)

(CRB at 89)

The core of Apple's position is that no one ever used the connector order shown in the '501 patent before the '501 patent and Apple's use of it was an entirely new idea, one that flew in the face of what persons of ordinary skill in the art knew about the placement of ground conductors before the '501 patent. In fact, the choice in the '501 patent was so unique and contrary to universal practice and accepted engineering methodology, that placement of the ground connector could be called "whacky" or "strange" in the testimony of Dr. Phinney. Apple argues that: "Even Kashi, which discloses reconfiguring connector order and depicts numerous possibilities for connector ordering, never depicts, explains or teaches the connector ordering of the '501 patent. (RX-897, Figs. 7, 10B, 11C, 12B, 13A-13C.)" (CRB at 89-90.) Therefore,

Apple argues Samsung failed to meet its burden to show that any combination with the TI CODEC renders the '501 patent obvious.

The Staff's position is consistent with Apple's. The Staff agrees with Apple that Dr. Phinney's detailed explanation as to why it would not be obvious to move the ground connection is more convincing than Dr. Russ's conclusion regarding moving the ground for compatibility purposes (SIB at 118-119).

Analysis

In analyzing obviousness under the '501 patent, I am moved to reiterate that the clear and convincing evidence standard is a purposefully difficult standard. Among other things, the clear and convincing standard does not permit me to decide a case based upon guesses, inferences based upon attorney argument, false syllogisms (a lack of common sense), or testimony/evidence that is not internally credible. Thus, in applying the Graham Factors to the facts of the '501 patents and the prior art that Samsung alleges make the '501 patent obvious, I have done so with close attention to what clear and convincing evidence means.

One of the most credible and compelling pieces of testimony brought forth during the entire hearing was Dr. Phinney's testimony concerning the placement the ground position in the '501 patent. His rather earnest testimony started as follows:

Q. Can you explain to us why in your opinion it would not have been obvious to move the ground position with regard to the TI CODEC reference?

A. Yeah, to express my opinion on that point, moving the ground position from the sleeve, is really, really wacky. I think it's a very strange choice. ...

(Tr. At 2243:15-2245:21.) Continuing at the end of this testimonial excerpt, Dr. Phinney cogently explained the engineering reasons and problems associated with placing the ground

where the '501 patent required. (See Tr. 2245:21-2248:10.) Dr. Phinney made it clear he had never seen such a choice before and that it would introduce engineering problems as well.

The difficulty Dr. Phinney's compelling testimony creates for Samsung is that it establishes the '501 connector variation (ground position) was far from predictable for a person of ordinary skill in the art. Instead, Dr. Phinney established Apple's '501 solution was the antithesis of predictable, especially for engineers, who he called very conservative. (*Id.*) Since I find his testimony to be credible, I find Samsung cannot establish, by clear and convincing evidence, that the '501 ground position was a predictable variation, for any reason, by a person of ordinary skill in the art and thus all of its arguments related to market forces it alleges stem from *KSR Int'l. Co. v. Teleflex Inc.*, 550 U.S. 398 (2007), necessarily fail.

In addition to Dr. Phinney's testimony, Samsung's own expert torpedoed its obviousness contentions. As pointed out by the Staff, Dr. Russ stated the connector ordering in the '501 is not necessarily obvious (SIB at 119; RX-3450 at Q&A 489). From there, Dr. Russ attempted to salvage the unsalvageable by alleging, in the most conclusory and unsupported of ways, that: (1) once connector ordering is taught, a person of ordinary skill would choose the one they need; (2) there was no explanation given in the '501 patent for the choice; and (3) previous art would support any choice. (*Id.*) Dr. Russ's testimony begs the question that Samsung cannot answer. Specifically, if Dr. Russ is correct, why can't (as Apple notes) Samsung cite even one instance (product, etc.) where the ground terminal was located where shown in the '501 patent? The reason is simple, for as

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compellingly testified to by Dr. Phinney, Apple's '501 concept was revolutionary ("whacky") and against all the current wisdom. This takes the '501's connector placement outside of the experience of those of ordinary skill in the art and accordingly, the TI CODEC reference could not have made it obvious. Therefore, I reject Samsung's argument that the '501 ground connector position was predictable as hindsight that is contradicted by the record. *Eurand, Inc. v. Mylan Pharms., Inc. (In re Cyclobenzaprine Hydrochloride Extended-Release Capsule Patent Litig.)*, 676 F.3d 1063, 1070-71 (Fed. Cir. 2012).

My analysis of Samsung's arguments leads me to conclude that apart from some incidental conclusory testimony by Dr. Russ, Samsung advances no evidence that deals with the essential revolutionary nature of the '501 connector order. Instead, Samsung skips straight to arguing Apple was solely motivated by market forces (the desire for backward compatibility). (RIB at 248-254.) Even though Samsung does show Apple had compatibility reasons for its '501 connector order, Samsung failed to present credible evidence that: (1) the connector order was not innovative; or (2) how or why someone of ordinary skill in the art would have been motivated to choose such a radical solution. Instead, Samsung offers unsupported attorney argument that because backwards compatibility was the motivation underlying the '501 connector order choice, only market forces drove the '501 patent and because market forces demanded the result, the solution was predictable. (*Id.*) Nevertheless, I found the facts establish just the opposite, that the connector order was revolutionary and innovative despite the need for backward compatibility.

In arguing that compatibility is the reason for the connector ordering of the ‘501 patent, Samsung also misses the obvious, *i.e.*, as Apple logically argues, at the time of the ‘501 invention only Apple had an economic reason to pursue compatibility with other Apple products; the hypothetical person of ordinary skill had no incentive to do so. (RIB at 249-51; RX-3450C (Russ) Q&A 411; CX-2431C (Johnson) Q&As 39-46.) Moreover, Samsung alleged it adopted the ‘501 connector ordering because third-party cellular carriers asked for it after the successful launch of the iPhone (an event after the ‘501 patent), not because the connector order in the ‘501 patent was obvious (RX-3630C (Lee) Q&As 6-7; CX-1 at 5). Thus, none of TI CODEC, Goyal, or Enjalbert, references, all of which Samsung admits do not disclose the claimed ground connector positioning, can render the ‘501 patent obvious. (RIB at 246; RX-3450C (Russ) Q&As 488; 296-97, and 645.

b. Goyal alone or Goyal in combination with Kashi, iPod Video, Mizukami, or Jeong references

The Parties’ Arguments

The parties did not brief the “Goyal alone or Goyal in combination with Kashi, iPod Video, Mizukami, or Jeong references” using the same organization or order. Nevertheless, I have considered all the arguments raised by the parties. Specifically, I have considered: (1) Samsung’s arguments as presented in its Post Hearing and Post Hearing Reply Briefs (RIB at 246-264 and RRB at 93-106); (2) Apple’s arguments as presented in its Post Hearing and Post Hearing Reply Briefs (CIB at 202-209 and CRB at 89 – 92); and (3) the Staff’s arguments as presented in its Post Hearing Brief (SIB at 117-121).

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Samsung contends that the following pieces of alleged prior art, alone and in combination with each other and/or the references already discussed above, render the asserted claims of the ‘501 patent obvious: U.S. Patent No. 7,450,726 to Goyal; U.S. 2006/0034465 A1 patent application to Jeong; and U.S. Patent No. 6,069,960 to Mizukami. Samsung also alleges that, based on the record, Apple’s only basis for distinguishing the TI CODEC and Mizukami art must be rejected as a matter of law. (RIB at 254.)

Samsung challenges Dr. Phinney’s opinion that the Mizukami and the TI CODEC did not render the ‘501 obvious because combining audiovisual (A/V) technology with mobile phones negated any motivation to combine and avers this is his only reason. Samsung argues this argument is contrary to *KSR* since the Supreme Court held variations could be prompted in different fields. Samsung also argues Dr. Phinney’s logic was rejected by the PTO during prosecution of the patent (RIB at 255-56). Samsung argues that for Apple to argue a person of ordinary skill in the art would not look to both A/V and cell phones ignores “the clear and convincing statement of the PTO.” (*Id.*) Samsung further argues that the Kashi prior art also supports rejection Dr. Phinney’s “sole basis” argument and require he also look to A/V apparatus art when addressing cell phone issues (which he does not recall doing) and thus defeats his “sole basis” argument. (RIB at 257.)

Samsung also attacks the legal basis of Dr. Phinney’s conclusion that he would not have combined Mizukami with TI CODEC because under questioning from his own attorney, Dr. Phinney explained that he was opining that a person of skill in the art would not have combined Mizukami, which disclosed typical camcorder style wiring, with the TI CODEC because a digital A/V player was not pervasive in the late ‘90s – when Mizukami was invented.

(RIB at 257-258.) Thus, Samsung alleges Dr. Phinney's sole basis for his opinion, is based on the incorrect legal standard and must be rejected. His opinion based on the state of the prior art at the time of the prior art is wrong and contrary to precedent. (RIB at 258.) Instead, Samsung alleges Dr. Phinney should have considered whether a person of ordinary skill in the art would have combined Mizukami and TI CODEC at the time of the invention of the '501 patent – 2007 – not at the time of the invention of the prior art Mizukami.

Samsung argues Goyal is prior art and that it renders every element of the '501 patent obvious. (RIB at 260.) Samsung alleges, allegedly contrary to Apple's assertion, that the Goyal reference does disclose an analog to digital converter coupled to the [m]ic power amplifier, which is in turn coupled to a microphone connector. (RIB at 260.) Samsung alleges a person of ordinary skill in the art would have understood the Goyal disclosures include what amounts to CODEC circuitry and that Apple's attempt to justify its position on the basis of the meaning of the word "coupling" is erroneous, as its speculation that there could be intervening switches, which are not mentioned in Goyal. (RIB at 261.) Continuing this argument, Samsung alleges Goyal discloses a right/left connector is inherently coupled to the CODEC circuitry because the stored digital signals must be converted to analog signals. (*Id.*) Moreover, Samsung alleges, the Goyal jack supports "any type of headset with 3-wires or 4-wires" and it "can be used as a common jack to connect all kinds of headsets." (*Id.*) This means, according to Samsung, that it would be obvious to a person of ordinary skill in the art at the time of the '501 invention that Goyal taught to wire a jack in any order to support any plug configuration. (RIB at 261-262.) Therefore, Samsung alleges:

Goyal in combination with various references that indisputably have the claimed ordering renders obvious "the ground connector positioned between the

microphone connector and either the left or right connector.” Goyal may also be combined with the iPod Video and Kashi references discussed above in order to meet the connection order limitation. Likewise, Goyal can be combined with the Jeong and Mizukami references, both of which also contained the claimed connection order in the form of video-out cables like the iPod Video. (*Id.*, Q 399-401 at 157-58). A person of ordinary skill would be motivated to combine Goyal with these references for the same reason that the inventors of the ‘501 patent were motivated to include this limitation in the claim – to achieve backward compatibility with existing devices.

(RIB at 262.)

Apple’s argument to these accusations of Samsung is not materially different from those it made in response to the TI CODEC or iPod Video reflected immediately above. (CIB at 206-206.) Apple emphasizes that even Samsung admits Goyal does not disclose “the ground connector . . . positioned between the microphone connector and either the left or right connector,” which is a ‘501 requirement. (CIB at 203.) Given the universal practice of ground connector placement testified to by Dr. Phinney, Apple reiterates its argument that it would not have been obvious to a person of ordinary skill at the time of the invention of the ‘501 patent to place the connector anywhere else but at the sleeve position, nor move it from that standard position between the other connectors since all prior art taught away from that. (*Id.*)

Apple candidly admits the only reason the ground connector was placed where it was in the ‘501 patent was so that accessories for the Apple products practicing the ‘501 patent could be used with Apple’s existing MP3 players. (CIB at 203-204.) Apple argues that simply because the ground connector could be in this position does not mean it would have been obvious to a person of skill in the art. Apple cites *In re Gordon*, 733 F.2d 900, 902 (1984) (“The mere fact that the prior art could be so modified would not have made the modification obvious unless the prior art suggested the desirability of the modification.”) as support for its position and reiterates:

... there was no engineering reason to place ground in this position and no reason for anyone other than Apple to even consider doing it, placing “the ground connector . . . between the microphone connector and either the left or right connector” would not have been obvious to a person of ordinary skill in the art. (Tr. at 2243:15-2248:10.)

(CIB at 204.)

Apple notes Goyal fails to disclose “a microphone connector electrically coupled to CODEC circuitry,” “a right connector coupled to CODEC circuitry,” or “a left connector coupled to CODEC circuitry.” (*Id.*) Although Samsung argues inherency, Apple states Samsung failed to show that coupling of the connectors to CODEC circuitry is necessarily present in Goyal or that a CODEC is an inherent requirement of Goyal’s circuitry. Apple argues:

Figure 7 shows only the output of a microphone amplifier, labeled 780, without showing connection to a CODEC. (RX-772 at Fig. 7.) Moreover, even if Goyal did inherently disclose a CODEC, it is not inherent that the jack connectors are electrically coupled to this CODEC—especially in the manner described in the ‘501 patent. Figures 1 and 7 disclose blocks, which may include intervening switches or other mechanical components that would not meet the plain and ordinary meaning of electrically coupled to one of ordinary skill in the art. (*Id.* at Figs. 1, 7; *see also* CX-2599C (Phinney) at 32-33, Q111-12.) Because Goyal does not disclose anything about connection to a CODEC, one of skill in the art cannot reach any conclusions about what connections necessarily exist in Goyal. *See Agilent Techs., Inc. v. Affymetrix, Inc.*, 567 F.3d 1366, 1383 (Fed. Cir. 2009) (“The very essence of inherency is that one of ordinary skill in the art would recognize that a reference unavoidably teaches the property in question.”); *see also Hitzeman v. Rutter*, 243 F.3d 1345, 1355 (Fed Cir. 2001) (“an inherent property must necessarily be present in the invention . . . and it must be so recognized by persons of ordinary skill in the art”).

(CIB at 207-208.)

Apple closes its argument by disputing that Goyal in combination with ROKR E2²², iPod Video, Kashi, Jeong, or Mizukami renders the '501 patent obvious. Apple alleges Samsung also has failed to meet its burden regarding Goyal in combination with Kashi because neither discloses the ground connector in the third from the tip position required by the '501 patent.

In its reply, Apple replied specifically to additional allegations by Samsung in its Reply Brief. (CRB at 91.) For example, Apple alleges Samsung's argument that a statement by the Examiner during prosecution regarding two different pieces of prior art, Sano and Kashi, establishing a motivation to combine TI CODEC and Mizukami or iPod Video has no merit and is also new. (RIB at 255-57.) Specifically, Apple states:

Samsung argues that the "PTO rejected the argument that one was an A/V apparatus and other was a mobile phone." (*Id.* at 256.) However, there is no evidence that Apple made any such argument during the prosecution. A statement by a patent examiner is certainly not binding on Apple. Moreover, a statement about a combination of Sano and Kashi simply has no relation to Mizukami's video device, because Sano is "a jack interface for audio devices" and Kashi "discloses the device is a mobile telephone." (RIB at 256; JX-12 at 183.) In any event, the examiner allowed the patent over this combination of prior art.

Samsung also mischaracterizes Dr. Phinney's testimony on this topic in an attempt to create a motivation to combine. (RIB at 257-59.) Dr. Phinney did not base his opinion that there would be no motivation to combine these references on the state of art in the 1990s. The testimony Samsung points to merely demonstrates why a person of ordinary skill in the art *at the time of the invention of the '501 patent*, armed with the disclosure of the TI CODEC (which was intended for phones, not video), would not be motivated to look back to the older camcorder invention of Mizukami, which did not disclose a CODEC, and take from its disclosure of a connector ordering of left, video, ground, right. (Tr. at 2251:14-2252:19, 2258:2-22.) These are two distinct technologies that

²² As Samsung admits (RIB at 264), evidence of the ROKR E2 was excluded (Tr. 1818:18-1819:4.). It appears Apple made this argument in an abundance of caution. I will not rule on this argument because the evidence is not part of the record and Samsung cannot possibly meet its burden.

Samsung has provided no evidence would ever be combined. On the other hand, Apple has provided ample evidence that one of skill in the art would not look to the video world to solve a problem in the audio world. (*Id.* at 2257:11-2258:22; *see also* CX-2599C (Phinney) at 31-32, Q106-07; 34-35, Q118-20; 37, Q129-31.) Finally, Dr. Russ does not address the combination of TI CODEC with iPod Video *at all*. Regardless, Apple has shown that such a combination would not render the '501 patent obvious because it would not disclose the connector ordering required by the '501 patent. (CIB at 207; CX-2599C (Phinney) at 37, Q129.)

The Staff's arguments are consistent with its previous arguments.

Analysis

The arguments of the Staff and Apple are materially more persuasive and supported than are Samsung's. Consistent with my previous findings concerning Samsung's obviousness arguments in this determination, I find Samsung has not established the '501 patent is obvious by clear and convincing evidence because of the references discussed in this section of this determination. Again, one of the reasons I so hold is because of what I perceive to be Samsung's lack of understanding concerning the burden of proof. More specifically, Samsung seems to think it is Apple's burden to prove the '501 patent is not obvious rather than understand it must prove, by clear and convincing evidence, why the '501 patent is obvious. While Samsung does attack Apple, it does not present credible evidence of why the '501 patent is obvious and ignores the compelling evidence offered by Dr. Phinney concerning the truly revolutionary ("whacky" or "strange") nature of moving the ground connector location, which was the opposite of existing wisdom and which challenged the basic conservative engineering assumptions underlying connector placement within a jack and would cause engineering problems. In addition, I find the testimony Samsung offers on motivation and obviousness to be either equivocal or based upon

attorney argument and much less credible than that offered by Dr. Phinney. (*E.g.*, see b., immediately above.)

Consistent with the foregoing, I reject Samsung's argument that the sole basis of Dr. Phinney's opinion regarding Mizukami and TI CODEC was that one would not look to A/V for cell phone technology. This would require me to ignore Dr. Phinney's credible testimony concerning the inherently revolutionary nature of the ground connector location in the '501, a fact Samsung makes a habit of ignoring. Samsung's argument regarding *KSR* is unhelpful. In *KSR* the Supreme Court was holding that variations can be prompted from many sources, if there is a logical reason to do so, *i.e.*, if they lead to predictable variations. The key here is that Dr. Phinney testified it was not logical to consult other sources under the circumstances of this invention and the prior art. In so doing, he was plainly relying upon and considering the radical change represented by the '501, which, in no way, exists in any device identified by Samsung, whether it is A/V device or a cell phone.

In addition, the PTO's opinion (RX-0876 at 1:60-65; 2:1) is not legally binding upon Apple or me, adequately explained, logical, nor convincing and thus I reject it as being applicable to obviousness in this case. Perhaps most tellingly, I find no indication the PTO was contemplating the truly revolutionary nature of the connector change explained by Dr. Phinney. Nor, as Apple argues, is there any evidence Apple agreed with the PTO. Instead, the PTO opined A/V art had to be looked at and did not specifically address the particular issue with the ground connector location. Furthermore, even taken together, neither the Kashi nor Sano examples of prior art discussed by the PTO disclosed or taught the ground connector location of

the ‘501. Therefore, I find the ‘501 patent is not obvious because of the Goyal alone or Goyal in combination with Kashi, iPod Video, Mizukami, or Jeong references cited in this section.

c. Enjalbert alone or Enjalbert in combination with Kashi, iPod Video, Mizukami, or Jeong references

The Parties’ Arguments

The parties did not brief the “Enjalbert alone or Enjalbert in combination with Kashi, iPod Video, Mizukami, or Jeong references” using the same organization or order. Nevertheless, I have considered all the arguments raised by the parties. Specifically, I have considered:

(1) Samsung’s arguments as presented in its Post Hearing and Post Hearing Reply Briefs (RIB at 246-264 and RRB at 93-106); (2) Apple’s arguments as presented in its Post Hearing and Post Hearing Reply Briefs (CIB at 202-209 and CRB at 89 – 92); and (3) the Staff’s arguments as presented in its Post Hearing Brief (SIB at 117-121).

Samsung explains that Enjalbert is directed toward “[a] detector for detecting the connection of an accessory including a microphone and/or the state of a switch associated with the microphone for a mobile device” such as “phones.” (RIB at 262.). Samsung alleges Enjalbert was filed on October 6, 2006, which is before the ‘501 patent and thus it is prior art under 35 U.S.C. § 102(e). Samsung alleges Apple argues Enjalbert does not disclose or obviate “the ground connector positioned between the microphone connector and either the left or right connector” nor disclose a “CODEC.” (*Id.*)

Samsung disputes Timothy Johnson, the primary inventor of the ‘501 patent, statement alleging an earlier conception date. (RIB at 263.) Samsung alleges it was improper for Apple to change the conception date and that the evidence does not support an earlier conception date. (*Id.*) In addition, Samsung reiterates its contention that the iPod Video already invented the

concept of the connection order. (*Id.*)

Apart from challenging the conception date, Samsung reiterates its allegation that it would be obvious to a person of ordinary skill in the art at the time of the '501 invention to wire the jack in any order in order to support any plug configuration and that it was market forces that drove the compatibility.

Samsung also argues Enjalbert may be combined with the iPod Video, Kashi, Jeong, and Mizukami references to derive the connection order limitation. Samsung alleges backwards compatibility would serve as sufficient motivation for a person of ordinary skill would be motivated by backward compatibility and argues *Friskit, Inc. v. Real Networks, Inc.*, 306 F. App'x 610, 617-18 (Fed. Cir. 2009)²³ supports its position. (RIB at 263.)

According to Samsung, Enjalbert also explicitly discloses an audio IC, which functions as a CODEC. (CIB at 264.) From there, Samsung argues that CODEC circuitry and coupling to that circuitry, is inherent in all digital electronic devices like those disclosed in Enjalbert. (*Id.*)

Apple notes Enjalbert discloses a detector for determining the connection of an accessory plug and the state of a microphone switch with a ground connector in the classic sleeve position, not at the third from the tip found in the '501 patent. (CIB at 207.) Apple alleges it and the Staff agree that Samsung has failed to meet its burden in explaining or proving how a combination of the Enjalbert with the iPod Video, Kashi, Jeong, and Mizukami renders the relevant limitation obvious. (CIB at 208.) Apple also alleges that Samsung's expert, Dr. Russ, does opine a person of ordinary skill in the art would be motivated to combine Enjalbert with the ROKR E2 but

²³ This citation is to an unpublished case. The pages cited discuss secondary indicia of non-obviousness, and do not address motivation to combine.

cannot prove when the ROKR E2 was on the market.²⁴

Apple attacks as conclusory and insufficient Dr. Russ's opinions that other combinations with Enjalbert would make obvious the location of the ground between the microphone and audio signal, but notes the '501 patent does not teach that in any event. (*Id.*)

Apple's combined its argument on reply with the same references discussed in b., immediately above (CRB at 90-91) and which were discussed in the preceding section.

The Staff contends the evidence has convincingly shown placing the ground in any other position besides the sleeve position would not have been obvious. (SIB at 119.) The Staff quotes Dr. Phinney's testimony concerning why it would not be obvious and concludes Samsung has not met its burden by clear and convincing evidence. (SIB at 11-120).

Analysis

Apple's arguments are significantly more persuasive than are Samsung's. As with my previous findings concerning Samsung's obviousness arguments, I find Samsung has not established the '501 patent is obvious by clear and convincing evidence because of the references discussed in this section of this determination. Again, one of the reasons I so hold is because of what I perceive to be Samsung's lack of understanding concerning the burden of proof. More specifically, Samsung seems to think it is Apple's burden to prove the '501 patent is not obvious rather than understand it must prove, by clear and convincing evidence, why the '501 patent is obvious. While Samsung does attack Apple, it does not present credible evidence of why the

²⁴ Apple is correct and that is relevant to why evidence concerning the ROKR E2 was excluded. The Staff notes Samsung did not prove relevant technical details through Dr. Russ either. (SIB at 116.)

'501 patent is obvious and ignores the compelling evidence offered by Dr. Phinney concerning the truly revolutionary (“whacky” or “strange”) nature of moving the ground connector location, which was the opposite of existing wisdom and which challenged the basic conservative engineering assumptions underlying connector placement within a jack and would cause engineering problems. In addition, I find the testimony Samsung offers on motivation and obviousness to be equivocal and much less credible than that offered by Dr. Phinney. (*E.g.*, see b., immediately above.)

In general, I find Samsung’s arguments and proof are conclusory and are insufficient to sustain its burden of proof. Samsung’s arguments presume the location of the ground connector was predictable. Rather than prove the location was predictable, Samsung provided conclusions or equivocal evidence, which falls far short of proving obviousness by clear and convincing evidence. Finally, Apple’s main defense, which is that the location of the ground connector was revolutionary and unpredictable is far compelling, defeats all the arguments Samsung makes under this sub section. Accordingly, I find the ‘501 patent is not obvious because of the Enjalbert alone or Enjalbert in combination with Kashi, iPod Video, Mizukami, or Jeong references cited in this section.

d. Secondary Considerations of Obviousness for the 501 Patent

The Parties’ Arguments

Apple alleges Samsung failed to rebut Apple’s evidence of objective indicia of non-obviousness. Specifically, Samsung failed to rebut the evidence of commercial success and copying of the ‘501 patent by Samsung.

Apple alleges Samsung studied Apple's products, to include x-raying the jacks in Apple's products, and that it only designed its headphone jacks in the '501 Accused Products to meet the connector ordering of the '501 patent, after those studies were done. (CIB at 9, citing RX-3449C (Lee) Q&As 26-27; *see also* RX-3093C.) In addition, before establishing standards for operation of its headphone jacks, Samsung tested headsets bundled with various products, including the iPhone. At this point Samsung created an internal recommendation to standardize its operation of headset detection circuitry to ensure headset compatibility, specifically with the iPhone headset, in a way that includes the microphone detection improvements patented by the '501 patent. (*Id.*, citing CX-973 at 7-8; *see also* CX-2599C (Phinney) at 9-10, Q25.) Apple argues that this conduct constitutes copying and that it is strong evidence of objective indicia of non-obviousness.

Samsung first argues that what it did with the products containing the '501 patent jacks was not copying, but was rather bench marking. (RIB at 215.) Samsung then argues that Apple has not proven a nexus between commercial success and the relevant invention within those products. (*Id.*)

Analysis

I have already found that Apple's iPhone, iPhone 3G, iPhone 3GS, iPhone 4, iPhone 4S, iPad, iPad 2, and iPod touch practice the '501 patent under the technical prong. What is more, it is unassailable that these products have been commercially successful, even if they are no longer commercially successful individually because they are no longer sold. As noted by the Staff (SIB at 120), "... if the marketed product embodies the claimed features, and is coextensive with them, then a nexus is presumed and the burden shifts to the party asserting obviousness to

present evidence to rebut the presumed nexus.” *See Brown & Williamson Tobacco Corp. v. Philip Morris, Inc.*, 229 F.3d 1120, 1130 (Fed. Cir. 2000); *see also J.T. Eaton & Co. v. Atlantic Paste & Glue Co.*, 106 F.3d 1563, 1571 (Fed. Cir. 1997). I find Samsung has not provided any probative evidence sufficient to rebut the presumed nexus.

I also find that a reasonable person could conclude Apple has provided sufficient proof of copying by the preponderance of the evidence. As Samsung correctly argues, companies do benchmark and study their competitors’ products. However, based upon the evidence cited by Apple, I find Samsung went beyond benchmarking and set an internal standard consistent with the ‘501 patent. From there, I find Samsung produced products that infringe the ‘501 patent. Therefore, the evidence of record is sufficient to support a conclusion of copying by the preponderance of the evidence.

Based upon the foregoing, I find there are relatively strong indicia of non-obviousness with regard to the ‘501 patent that further strengthen Apple’s already successful arguments that the patent is not obvious.

X. U.S. Patent No. 7,789,697

A. Introduction

U.S. Patent No. 7,789,697 (“the ‘697 patent”) is titled “Plug Detection Mechanisms.” (JX-005, cover page.) The patent issued on September 7, 2010, to Fiennes and was assigned to Apple, Inc. (*Id.*) The ‘697 patent has an effective filing date of May 29, 2008, and claims priority to U.S. Provisional Application No. 60/934,234, filed Jun. 11, 2007. (*Id.*)

The ‘697 patent is directed to a plug detect apparatus for detecting the presence of a plug. The plug has at least a first plug contact for insertion into a receptacle configured to accept the

plug. (*Id.* at 1:32-47.) The plug detect apparatus also includes a first receptacle contact located in the receptacle. The first receptacle contact is configured to communicate with the first plug contact. (*Id.*) The plug detect apparatus also includes a detect contact also located in the receptacle. (*Id.*) The plug's presence within the receptacle creates a signal path through the plug and between the detect contact and the first receptacle contact. (*Id.* at 1:32-47.)

B. Asserted Claims

Apple argues that Samsung infringes claims 13 and 14 of the '697 patent. The asserted claims read as follows:²⁵

12. An electronic device capable of detecting the presence of a plug of an accessory component, wherein the plug includes a first plug contact, the electronic device comprising:

a receptacle configured to accept the plug;

a first receptacle contact disposed in the receptacle, wherein the first receptacle contact is configured to communicate with the first plug contact;

a detect contact disposed in the receptacle relative to the first receptacle contact so that the presence of the plug within the receptacle creates a plug signal path through the plug and between the detect contact and the first receptacle contact, wherein the detect contact and the first receptacle contact both contact the same first plug contact when the plug is present in the receptacle; and

detection circuitry coupled to the detect contact and the first receptacle contact to detect that the signal path is a low or a high impedance path.

13. The electronic device of claim 12, wherein the electronic device further comprises:

²⁵ Although independent claim 12 is not asserted, asserted claims 13 and 14 depend from claim 12, and thus I have reproduced the text of claim 12 for completeness.

a first input/output component; and

control circuitry coupled to the detect contact, wherein the control circuitry is configured to instruct the electronic device to utilize the first input/output component when a detect signal on the detect contact has a first value, and wherein the control circuitry is configured to instruct the electronic device to utilize the accessory component when the detect signal has a second value.

14. The electronic device of claim 13, wherein the plug signal path is configured to make the detect signal have the second value.

C. Level of Ordinary Skill in the Art

Apple proposes that a person of ordinary skill in the art at the time of the invention of the ‘697 patent would have had “at least a bachelor’s degree in electrical engineering or the equivalent, and at least one to two years of work experience in the field.” (CX-2429C (Phinney DWS) at Q&A 43.) Samsung proposes that a person of ordinary skill at the time of the invention of the ‘697 patent, would have had “at least the equivalent of a first college degree in digital electronics, electrical engineering, computer engineering, computer science, or a related technical degree, as well as one to two years of post-degree experience in the engineering of computer systems and/or consumer electronics.” (RX-3450C (Russ DWS) at Q&A 65.) For all intents and purposes the two proposals are the same and the parties do not argue otherwise. Having reviewed the two proposals I have decided to adopt Samsung’s proposal as it is more specifically worded. Thus, I find that one of ordinary skill in the art at the time of the ‘697 patent would have had “at least the equivalent of a first college degree in digital electronics, electrical engineering, computer engineering, computer science, or a related technical degree, as well as one to two years of post-degree experience in the engineering of computer systems and/or consumer electronics.”

D. Claim Construction

The parties did not dispute the construction of any limitations of the asserted claims of the '697 patent. Pursuant to Order No. 16, the following undisputed claim constructions shall apply: (1) "detection circuitry" shall be construed in accordance with its plain and ordinary meaning; (2) "control circuitry" shall be construed in accordance with its plain and ordinary meaning; (3) "debris" shall be construed in accordance with its plain and ordinary meaning; (4) "detect contact" shall be construed to mean "a contact in the accessory jack of an electronic device that is used to detect a plug"; (5) "communicate with" shall be construed with "establish electrical contact with"; (6) "signal path" shall be construed in accordance with its plain and ordinary meaning; (7) "gap in the signal path" shall be construed to mean "an open circuit in the signal path"; (8) "detect signal" shall be construed to mean "a signal that indicates presence or absence of a plug"; and (9) "first receptacle contact" shall be construed to mean "a contact in the receptacle of an electronic device that is different from the detect contact." (CX-2352C at 33.)

E. Infringement

Apple divides its infringement contentions into two categories based on whether the '697 Accused Products use: (1) "GND-detection" circuitry to detect the presence of a plug (*e.g.*, Samsung Galaxy Tab 7.0 SCH-I800); or (2) "L-detection" circuitry to detect the presence of a plug (*e.g.*, Samsung Galaxy S II SGH-T989).²⁶ (CX-2429C (Phinney DWS) at Q&A 70, 75, 88.)

²⁶ Samsung appears to divide this category into two subgroups, comprising GND-detection products with comparators and GND-detection products without comparators. For purposes of infringement of the '697 patent claims, however, the evidence has shown that this distinction is unnecessary. In particular, Samsung has acknowledged that the distinction is irrelevant for purposes of determining whether the products infringe the '697 patent under Apple's

GND-detection products use ground and detect contacts that are aligned with the third plug contact. (*Id.* at Q&A 70.) L-detection products use left audio and detect contacts that are aligned with the plug contact at the tip position. (*Id.*)

Apple has identified for each category of products a representative product that it relies on for purposes of its infringement analysis. (*Id.*) Those products are identified above in parentheses. Samsung has not contested that the products relied on by Apple are representative.

Neither Apple nor its expert, Dr. Phinney, addressed the ‘697 Design Around Product. (*See generally*, CIB; *see also* Tr. 930:16-932:6.) Thus, I find that Apple has failed to prove by a preponderance of the evidence that the ‘697 Design Around Product infringes the asserted claims of the ‘697 patent. In any event, the evidence shows that the ‘697 Design Around does not practice claim 12 and thus does not infringe dependent claims 13 and 14.

Samsung’s expert, Dr. Russ, and Samsung employee, Jae-Ryong Lee, convincingly testified that Samsung has designed a new earjack plug detection system that does not have the “detect contact” as required by claims 12 and 13. (RX-3637C (Russ RWS) at Q&A 749-754.) In particular, the evidence shows that the ‘697 Design Around does not have a “first receptacle contact” that is different from the “detect contact.” (RX-3630C (Lee RWS) at Q&A 18-23, 33-36; RX-3637C (Russ RWS) at Q&A 735, 740-54; RX-2480C (Lee Dep.) at 191:2-192:19, 193:1-12, 193:14-17, 195:11-196:6, 196:20-198:1, 198:4-201:19, 203:6-206:18, 206:20-207:1, 226:10-228:18, 230:16-233:2; RX-2483C (Lee Dep.) at 113:2-20; RX-3052C; RX-3053C; JX-0036C).

infringement theory. (RX-3637C (Russ RWS) at Q&A 711-712; CX-2429C (Phinney DWS) at Q&A 85.)

Instead of a dedicated “detect contact” and “first receptacle contact” coupled to detection circuitry to detect impedance between the two, the evidence shows that the Design Around Product

Similarly, the evidence shows that the ‘697 Design Around does not meet the limitation of claim 12 requiring “the detect contact and the first receptacle contact both contact the same first plug contact.”

1. Products employing GND-detection circuitry to detect the presence of a plug

Apple has identified the Samsung Galaxy Tab 7.0 SCH-I800 as the representative device on which it bases its infringement contentions for this category of accused products. (CX-2429C (Phinney DWS) at Q&A 75.) Other of the ‘697 Accused Products that fall within this category are: Conquer 4G SPH-D600; Continuum SCH-I400; Craft SCH-R900; Exhibit 4G SGH-T759; Fascinate SCH-I500; Flight II SGH-A927; Galaxy Player 4.0 YP-G1CWY; Galaxy Precedent SCH-M828C; Galaxy Prevail SPH-M820; Galaxy S 4G SGH-T959V; Galaxy Tab 10.1 GTP7510/M16; Galaxy Tab 10.1 SCH-I905; Galaxy Tab 7.0 SGH-I987; Galaxy Tab 7.0 SGH-T849; Galaxy Tab 7.0 SGH-T869; Galaxy Tab 7.0 SPH-P100; Galaxy Tab 8.9 SGH-I957; Gravity SGH-T589; Indulge SCH-R910; Indulge SCH-R915; Infuse 4G SGH-I997; Mesmerize SCH-I500; Nexus S SPH-D720 (Sprint); Nexus S SPH-D720 (TMobile/AT&T); Replenish SPH-M580; Showcase SCH-I500; Transform SPH-M920; and Vibrant SGH-T959. (*Id.* at Q&A 73.)

Dr. Phinney testified in detail that the Galaxy Tab 7.0 SCH-I800 infringes the asserted claims of the ‘697 patent. (CX-2429C (Phinney DWS) at Q&A 74-77, 94-112.) In support, Dr. Phinney relied on his review of publicly available source code and the testing of numerous Samsung products, as well as Samsung’s interrogatory responses, including Samsung’s identification of the operating system, jack, and CODEC used in each accused device. (*Id.* at Q&A 30-33.)

Samsung argues only that the Galaxy Tab 7.0 SCH-I800 fails to satisfy the limitations of claim 12 requiring “detection circuitry ... to detect that the signal path is ... a high impedance path” and “detection circuitry coupled to the detect contact and the first receptacle contact.” (RIB at 186-188.)

- a. **Does the Galaxy Tab 7.0 SCH-I800 “detect that the signal path is ... a high impedance path”?**

The Parties’ Positions

Apple argues that the invention of the ‘697 patent is simple and straightforward-- a mechanism to detect whether a plug is or is not in the jack of an electronic device. (CRB at 92.) Apple argues that Samsung’s insistence that the signal path of the ‘697 patent exists only when a plug is in the jack, and consequently Samsung’s position that the invention must detect both high and low impedance when the plug is in the jack, makes no sense at all because in that case the invention would never detect when a plug is removed. (*Id.* at 93.) Apple argues that this renders the claim meaningless and contrary to every teaching of the specification which states that the invention is to determine when a plug is in the jack and when a plug is not in the jack. (*Id.*)

Apple argues that the “plug signal path through the plug” recited in claim 12 is a subset of that singular “signal path” of the claims. (*Id.*) Apple argues that the plug does not create the

signal path. (*Id.* at 94.) Apple argues that the signal path exists by virtue the placement of the detect contact relative to the first receptacle contact. (*Id.*) Apple argues that the plug creates something more specific, a signal path “through the plug.” (*Id.*) Apple argues that a signal path through the plug does not exist without the plug so it makes perfect sense that the claim states that the plug creates a path through the plug. (*Id.*)

Apple argues that one of ordinary skill in the art would understand that “the signal path,” which may be a low or high impedance path, is not limited to the “plug signal path” created by the presence of a plug. (CIB at 219.) Apple argues that although “a plug signal path” appears in claim 12 before the term “the signal path” that does not necessarily mean that the earlier term narrows the scope of the later term. (*Id.*) Apple argues that the signal path contains a gap between the first receptacle contact and the detect contact when no plug is inserted. (*Id.*) Apple argues that when the plug is in the receptacle, the gap is filled by the plug and thus the path is called a plug signal path. (*Id.*) Apple argues that when the plug is in the receptacle the path is characterized as a low impedance path, as current can flow unimpeded around the circuit through the plug. (*Id.*) However, Apple argues that when no plug is inserted, the adjectives “plug” and “low impedance” no longer characterize the path. Instead, Apple argues that the same path remains, but now with “high impedance.” (*Id.*)

Apple argues that the claims and specification also support its interpretation. (CRB at 95.) Apple argues that nowhere does the patent say that the signal path of the invention exists only when the plug is inserted. (*Id.*) Apple argues that the specification only describes the “signal path through the plug.” (*Id.*) Apple also argues that that the specification explicitly teaches that the signal properties between the detect contact and one of the associated jack

contacts are protected both when the plug is in the receptacle and when the plug is not in the receptacle. (*Id.* at 96.) Apple further contends that dependent claims 13 and 26 support its argument that the signal path exists both when there is a plug in receptacle and when there is not the plug in the receptacle. (*Id.*)

Samsung argues that Apple has failed to show that “the plug signal path” required by claim 12 is present in any of the accused products for the detection circuitry to detect a high impedance path. (RIB at 186.) Samsung argues that the words “the signal path” refer to the plug signal path. (*Id.*) Samsung argues that claim 12 defines “the signal path” earlier in the claim when it states that “the presence of the plug within the receptacle creates a plug signal path through the plug and between the detect contact and the first receptacle contact.” (*Id.*) Samsung argues that Apple’s expert Dr. Phinney admitted several times that there was only one signal path claimed in claim 12. (*Id.*) Samsung argues that according to the plain language of the claim the presence of the plug creates a plug signal path and that it is this plug signal path that is required to detect high impedance. (*Id.*)

Samsung argues that the accused products are missing the claimed plug signal path, the path created by the presence of a plug, to detect a high impedance path. (*Id.*) Samsung asserts that Apple concedes that when there is a high impedance path in the accused products there is no plug in the receptacle. (*Id.*) Thus, Samsung argues because there is no plug in the receptacle, there is no “plug signal path” created by the plug to detect high impedance as required by claim 12. (*Id.*)

The Staff argues that the accused products do not practice the claim limitation “detection circuitry coupled to the detect contact and the first receptacle contact to detect that the signal

path is a low or a high impedance path.” (SIB at 91.) The Staff argues that claim 12 explicitly defines the signal path as not being in existence until the plug is inserted into the receptacle. (*Id.*) Thus, the Staff argues that when the plug is not within the receptacle, there is no signal path. (*Id.*) The Staff argues that Apple’s expert Dr. Phinney acknowledged that the claimed invention only identifies one signal path. (*Id.*) The Staff argues that because the only signal path does not exist when the plug is absent from the receptacle, the detection circuitry cannot detect whether there is a “high impedance path” when the plug is absent as the “path” does not exist at that time. (*Id.* at 91-92.) The Staff argues that Dr. Phinney’s testimony confirms that fact. (*Id.*)

Analysis

Claim 12 unambiguously states that “the presence of the plug within the receptacle *creates a plug signal path through the plug* and between the detect contact and the first receptacle contact.” (JX-005 at 9:22-25 (emphasis added).) No other signal path is disclosed in claim 12, as even Apple’s expert, Dr. Phinney agreed. In particular, Dr. Phinney testified:

In your expert opinion sitting here today as you understand the claimed invention, how many signal paths are identified?

A. One

Q. Just one path?

A. Yes.

(Tr. 987:25-988:5.) Thus, when claim 12 refers to the “the signal path” in the limitation “detection circuitry ... to detect that the signal path is ... a high impedance path” it must be referring back to “a plug signal path.”

This conclusion comports with the common claim drafting convention that the first incarnation of a limitation in a claim be prefaced with the article “a” or “an” and any subsequent recitation of that term be referred to with the article “the” or “said.” *See Baldwin Graphic*

Systems, Inc. v. Siebert, Inc., 512 F.3d 1338, 1343 (Fed. Cir. 2008) (citing MPEP § 2173.05(e) (8th ed. 2005)); *see also NTP, Inc. v. Research in Motion, Ltd.*, 418 F.3d 1282, 1306 (Fed. Cir. 2005). Under this well established convention, it is clear that the term “a plug signal path” provides the antecedent basis for the latter reference to the term “the signal path” in claim 12. Apple relies on *Am. Med. Sys., Inc. v. Biolitec, Inc.*, to argue that earlier claim terms that lack the modifying article “the” do not necessarily narrow the scope of later, similar terms. 618 F.3d 1354 (Fed. Cir. 2010). (*See* CIB at 219.) In *Am. Med. Sys., Inc.* the Court found that the term “photoselective vaporization of tissue” in the preamble was not a limitation, but merely a descriptive name, and as such did not provide antecedent basis for the later-used term “the tissue.” Unlike in *Am. Med. Sys., Inc.*, here the term “a plug signal path” is found in the body of the claim and not in the preamble. Moreover, unlike the term “photoselective vaporization of tissue” in *Am. Med. Sys., Inc.*, the term “a plug signal path” is undisputedly a limitation of the claim. Consequently, I find Apple’s reliance on *Am. Med. Sys., Inc.* misplaced and thus find Apple’s argument not persuasive.

In addition to the claim language itself, the specification also supports the conclusion that “the signal path” refers back to “the plug signal path” as the specification consistently describes the signal path as going through the plug. For example, the specification states:

[A]s shown in FIG. 3B, when plug 122 is inserted into and present within receptacle 112 of jack 102, a circuit signal path may be created through plug 122 (e.g., through plug contact 124b) and between detect contact 116b and jack contact 114b.

(JX-005 at 5:24-28.) Likewise, the specification describes the “[t]he circuit signal path” as being “created through plug 122 and between detect contact 116b and a functional jack contact 114b.” (*Id.* at 5:37-39.) Even the portion of the specification that Apple points to for the

proposition that the signal path does not require a plug actually says the exact opposite, stating that the plug completes the signal path. (*See id.* at 5:19-23 (“plug 122 ... can be used to complete the signal path or circuit between detect contact 116B and receptive jack contact 114.”)) If the plug “completes” the path then there must not have been a path between detect contact 116B and jack contact 114 when there was no plug in the receptacle.

Apple also points to a passage from the specification discussing “additional circuitry components” that may be incorporated into the invention to minimize signal noise and protect proper signal properties when no plug is present in the receptacle to support its argument that the signal path exists even when there is no plug in the receptacle. (CIB at 217-218 (citing JX-005 at 5:19-23).) I disagree. The entire passage on which Apple relies never once mentions “signal path” or “plug signal path.” Apple’s argument is strictly conjecture.

As discussed above, the term “a plug signal path” in claim 12 provides antecedent basis for the later reference to “the signal path.” Thus, in order to show that the Galaxy Tab 7.0 SCH-I800 satisfies the limitation of claim 12 requiring “detection circuitry ... to detect that the signal path is ... a high impedance path” Apple must show that the detection circuitry in the Galaxy Tab 7.0 SCH-I800 is able to detect that the signal path (*i.e.*, the plug signal path through the plug and between the detect contact and first receptacle contact) is high impedance.

The undisputed evidence is that the Galaxy Tab 7.0 SCH-I800

(CX-2429C (Phinney DWS) at Q&A 77; RX-3637C (Russ RWS) at Q&A 717-718.) The evidence also shows that removing the plug from the receptacle creates an open air gap between the detect contact and the first receptacle contact. (*See* RX-3637C (Russ RWS) at Q&A 717; Tr. 907:14-19.) Consequently, when the plug is

removed from the receptacle there is no longer a plug signal path through the plug and between the detect contact and the first receptacle contact. Therefore, the Galaxy Tab 7.0 SCH-I800 cannot satisfy the limitation of claim 12 requiring that the detection circuitry detect that the plug signal path is a high impedance path, b

Thus, I find that Apple has failed to show that the Galaxy Tab 7.0 SCH-I800 satisfies all of the limitations of claim 12. Because asserted claims 13 and 14 depend from claim 12, I also find by extension that claims 13 and 14 are not infringed for the same reason. 35 U.S.C. § 112 ¶ 4 (“A claim in dependent form shall be construed to incorporate by reference all the limitations of the claim to which it refers.”). Accordingly, I find Apple has failed to prove by a preponderance of the evidence that the Galaxy Tab 7.0 SCH-I800 and the other devices in this category infringe the asserted claims of the ‘697 patent.

b. Does the Galaxy Tab 7.0 SCH-I800 include “detection circuitry coupled to the detect contact and the first receptacle contact”?

The Parties’ Positions

Apple argues that although there is a gap between the contacts when the plug is removed there is still coupling within the meaning of the ‘697 patent both across that gap and through ground. (CRB at 97.) Apple argues that there is a very small, but measurable amount of current that flows across the contacts when the plug is removed. (*Id.*) Apple argues that the fact that the amount of current is very small is irrelevant because in the context of the ‘697 patent there is no need for any larger flow of current. (*Id.*) In the context of the ‘697 patent, Apple argues that there need only be enough current for the detection circuitry to detect high impedance in the signal path. (*Id.*) Apple argues that if there is enough current for the detection circuitry to detect

high impedance in the signal path that is sufficient coupling for purposes of the claimed device.

(Id.)

Apple also argues that there is coupling of the first receptacle contact and the detection circuitry through a return path for current. (CIB at 220.) Apple argues that I should reconsider my ruling at the hearing to exclude the testimony of Dr. Phinney discussing this contention, because contrary to my ruling the contention was in fact disclosed in Apple's pre-hearing brief.

(Id.)

Samsung argues that Apple cannot show that the "detection circuitry" in any of the accused Samsung products is "coupled to the first receptacle contact to detect that the signal path ... is a high impedance path." (RIB at 187.) Samsung argues that claim 12 is directed to "detection circuitry" that detects the impedance between the detect contact and the first receptacle contact. *(Id.)* Samsung argues that it is not enough under claim 12 to merely have detection circuitry coupled to the first receptacle contact when there is a low impedance path. *(Id.)* Samsung argues that according to claim 12 the detection circuitry must also be coupled to the detect contact and the first receptacle contact when there is a high impedance path. Samsung argues that apple made no such showing. *(Id.)* Samsung argues that in fact Apple's expert confirmed that there is an open air gap separating the detection circuitry from the first receptacle contact when there is no plug present in the receptacle. *(Id. at 188.)* Thus, Samsung argues that when there is high impedance the detection circuitry is only coupled to the detect contact and as such cannot detect anything about the "first receptacle contact." *(Id.)*

The Staff argues that the parties do not dispute that claim 12 requires that the signal path exist when the plug is absent from the receptacle. (SIB at 90.) The staff argues that Apple's

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expert acknowledged that there is an open air gap between the first receptacle contact and the detection circuitry when no plug is present in the receptacle. (*Id.*) Thus, the Staff argues the evidence has shown that in the accused products the first receptacle contact is not coupled to the detection circuitry of the accused products when the plug is not in the receptacle. (*Id.*)

Analysis

The evidence shows that the Galaxy Tab 7.0 SCH-I800 includes detection circuitry

This arrangement is illustrated in the figure below, which I have annotated in accordance with Dr. Phinney's and Dr. Russ's testimony to show the pertinent components. (*See* CX-2429C (Phinney DWS) at Q&A 103; RX-3637C (Russ RWS) at Q&A 717; CX-0931 at S-ITC-000124883; CX-1075C at 2; *see also* RDX-51C at 2.)

There is no disagreement between the parties that claim 12 requires detection circuitry coupled to the detect contact and the first receptacle contact to detect a high impedance path. As Dr. Phinney admits, the Galaxy Tab 7.0 SCH-I800 detects high impedance when the plug is not inserted into the receptacle. Thus, to prove infringement, Apple must show, *inter alia*, that when there is no plug in the receptacle, the detection circuitry in the Galaxy Tab 7.0 SCH-I800 is coupled to the detect contact and the first receptacle contact.

(See RX-3637C (Russ RWS) at Q&A 717; CX-1075C at 2; RDX-51C at 2.) At the hearing even Apple's expert, Dr. Phinney, admitted as much testifying:

(Tr. 907:14-19

cannot be said that the detection circuitry is “coupled” to the first receptacle contact as claim 12 requires. (RX-3637C (Russ RWS) at Q&A 717; RX-3450 (Russ DWS) at Q&A 98-99.)

To find otherwise would be to read the term “coupled” out of the claim. Thus, I find Apple has failed to show that the Galaxy Tab 7.0 SCH-I800 satisfies each of the limitations of independent claim 12. Likewise, because claims 13 and 14 depend from claim 12, Apple has also failed to show that the Galaxy Tab 7.0 SCH-I800 satisfies each of the limitations of asserted dependent claims 13 and 14. 35 U.S.C. § 112 ¶ 4 (“A claim in dependent form shall be construed to incorporate by reference all the limitations of the claim to which it refers.”). Accordingly, I find for this additional reason that Apple has not proven by a preponderance of the evidence that the Galaxy Tab 7.0 SCH-I800 and the other devices in the category infringe the asserted claims of the ‘697 patent.

Apple argues that the detection circuitry is coupled to the first receptacle contact through the signal path. (CX-2429C (Phinney DWS) at Q&A 103

Apple argues that even when the plug is not present in the Galaxy Tab 7.0 SCH-I800 the detection circuitry is still coupled through the signal path to the first receptacle contact because the signal path exists whether or not the plug is present. (CIB at 217.) I find Apple’s argument not persuasive.

Contrary to Apple's argument, claim 12 does not state that the detection circuitry is coupled *through the signal path* to the first receptacle contact. Claim 12 requires "detection circuitry coupled to ... the first receptacle contact." Nothing in the claim language or specification insinuates that the coupling is through the signal path. Moreover, even if there was a signal path between the detect contact and the first receptacle contact when the plug is not in the receptacle, the evidence is quite clear

(RX-3637C (Russ RWS) at Q&A 717; Tr. 907:14-19.) Thus, even if the signal path exists, it cannot couple.

Apple also argues that there may be some stray electrons floating between the detect contact and the first receptacle contact that act to couple the detection circuitry to the first receptacle contact. (Tr. 919:15-921:24.) I find this argument without merit as it relies on an interpretation of the term "coupled" that is not in accordance with the plain and ordinary meaning of that term as would be understood in the context of the '697 patent by one of ordinary skill in the art. (See Tr. 919:15-921:24; RX-3637C (Russ RWS) at Q&A 692-694.) Moreover, even Dr. Phinney admits that the amount of electrons would be so negligible as to be ignored by engineers. (Tr. 919:6-921:24.)

Apple further argues that finding, as I have done, *supra*, that a device like the Galaxy Tab 7.0 SCH-I800 with its first receptacle contact coupled to ground does not meet the "coupled" limitation of claim 12 would impermissibly read a preferred embodiment out of the invention. (CIB at 216.) I disagree. The embodiment to which Apple refers is described in the specification of the '697 patent as follows:

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For example, as shown in FIG. 3B, when plug 122 is inserted into and present within receptacle 112 of jack 102, a circuit signal path may be created through plug 122 (e.g., through plug contact 124b) and between detect contact 116b and jack contact 114b. This can cause a signal on detect contact 116b to go low (i.e., less than or equal to a predetermined signal value) if, for example, jack contact 114b is a ground jack contact (e.g., a contact coupled to ground). This low signal can then be detected by a control unit of device 100, as described in more detail herein below with respect to FIG. 5.

(JX-005 at 5:24-5:31.) I note that contrary to Apple's argument there is no indication in the specification that this embodiment is a preferred embodiment of the invention. Moreover, contrary to Apple's argument, this embodiment does not even address the functionality of the detection circuitry when there is no plug in the receptacle. The description of the embodiment in the specification only discusses detecting a low impedance path. Thus, finding that the Galaxy Tab 7.0 SCH-I800 does not satisfy the "coupled" limitation when there is high impedance, and no plug in the receptacle, cannot read out this embodiment of the invention as Apple suggests.

At the hearing in this investigation, Apple attempted to interject a new argument that the first receptacle contact was coupled to the detection circuitry in the Galaxy Tab 7.0 SCH-I800 though a return path for current. Because I found that argument not fairly disclosed in Apple's pre-hearing brief I struck the argument and Dr. Phinney's testimony about it. (*See* Tr. at 1325:5-1437:3; *see also* Ground Rule 9.2.) Apple now seeks in its initial-post hearing brief reconsideration of that Order. (*See* CIB at 220-221.)

I find Apple's request for reconsideration wholly improper. If Apple wished to seek reconsideration it should have done so through a separate motion in compliance with my Ground Rules. I explicitly stated at the hearing that "I don't particularly want to see, obviously, any argument about this in the post-trial brief about that third path." (Tr 1436:1-3.) Yet, in complete contravention to what I said, Apple presents two pages of briefing on this issue. I find this very

close to sanctionable behavior. By including an argument I struck in their post-hearing brief, Apple forced Samsung out of an abundance of caution to have to respond to said argument causing Samsung to squander valuable pages in its post-hearing brief dealing with a dead issue. Moreover, because I struck the testimony, Samsung was deprived of its right at the hearing to cross-examine Dr. Phinney on his theory. Apple's request for reconsideration is DENIED.

2. Products employing L-detection circuitry to detect the presence of a plug

Apple has identified the Samsung Galaxy S II SGH-T989 as the representative device on which it bases its infringement contentions for this category of accused products. (CX-2429C (Phinney DWS) at Q&A 88.) Other of the '697 Accused Products that fall within this category are: Epic 4G Touch SPH-D710; and Galaxy S II Skyrocket SGH-I727. (*Id.* at Q&A 86.)

Dr. Phinney testified in detail that the Samsung Galaxy S II SGH-T989 infringes the asserted claims of the '697 patent. (CX-2429C (Phinney DWS) at Q&A 86-93, 113-130.) In support, Dr. Phinney relied on his review of publicly available source code and the testing of numerous Samsung products, as well as Samsung's interrogatory responses, including Samsung's identification of the operating system, jack, and CODEC used in each accused device. (*Id.* at Q&A 30-33.)

Samsung argues, as it did with regard to the Galaxy Tab 7.0 SCH-I800, that the Samsung Galaxy S II SGH-T989 fails to satisfy the limitations of claim 12 requiring "detection circuitry ... to detect that the signal path is ... a high impedance path" and "detection circuitry coupled to the detect contact and the first receptacle contact." (RIB at 186-188.)

a. Does the Galaxy S II SGH-T989 “detect that the signal path is ... a high impedance path”?

The undisputed evidence is that the Galaxy S II SGH-T989

Consequently, when the plug is removed from the receptacle there is no longer a plug signal path through the plug and between the detect contact and the first receptacle contact. (RX-3637C (Russ RWS) at Q&A 725, 728.) Therefore, the Galaxy S II SGH-T989 cannot satisfy the limitation of claim 12 requiring that the detection circuitry detect that the plug signal path is a high impedance path,

Thus, I find that Apple has failed to show that the Galaxy S II SGH-T989 satisfies all of the limitations of claim 12. Because asserted claims 13 and 14 depend from claim 12, I also find by extension that the Galaxy S II SGH-T989c does not satisfy all of the limitations of claims 13 and 14 for the same reasons espoused with regard to claim 12. 35 U.S.C. § 112 ¶ 4 (“A claim in dependent form shall be construed to incorporate by reference all the limitations of the claim to which it refers.”). Accordingly, I find Apple has failed to prove by a preponderance of the evidence that the Galaxy S II SGH-T989 and the other devices in this category infringe the asserted claims of the ‘697 patent.

Apple raises the same arguments it did with regard to the Galaxy Tab 7.0 SCH-I800 and the other products employing GND-detection circuitry as it does with regard to the Galaxy S II SGH-T989, that there is a signal path even when the plug is not inserted in the receptacle. Thus,

for the same reasons discussed, *supra*, with regard to the Galaxy Tab 7.0 SCH-I800, I find Apple's arguments regarding the Galaxy S II SGH-T989 not persuasive.

b. Does the Galaxy S II SGH-T989 include “detection circuitry coupled to the detect contact and the first receptacle contact”?

The evidence shows that the plug detection apparatus of the Galaxy S II SGH-T989

This arrangement is illustrated in the figure below, which I have annotated in accordance with Dr. Phinney's and Dr. Russ's testimony to show the pertinent components. (See CX-2429C (Phinney DWS) at Q&A 122; RX-3637C (Russ RWS) at Q&A 728; JX-038C at S-ITC-001583107; *see also* RDX 44C at 13.)

As is readily apparent from the diagram above,

(*See* RX-3637C (Russ RWS) at Q&A 717; CX-1075C at 2;

RDX-51C at 2.)

it cannot be said that the detection circuitry is “coupled” to the first receptacle contact as claim 12 requires. (RX-3637C (Russ RWS) at Q&A 717; RX-3450 (Russ DWS) at Q&A 98-99.) Thus, I find Apple has failed to show that the Galaxy S II SGH-T989 satisfies each of the limitations of independent claim 12. Likewise, because claims 13 and 14 depend from claim 12, Apple has also failed to show that the Galaxy S II SGH-T989 satisfies each of the limitations of asserted dependent claims 13 and 14. 35 U.S.C. § 112 ¶ 4 (“A claim in dependent form shall be construed to incorporate by reference all the limitations of the claim to which it refers.”). Accordingly, I find for this additional reason that Apple has not proven by a

preponderance of the evidence that the Galaxy S II SGH-T989 and the other devices in the category infringe the asserted claims of the '697 patent.

Apple raises the same arguments it did with regard to the Galaxy Tab 7.0 SCH-I800 and the other products employing GND-detection circuitry as it does with the Galaxy S II SGH-T989, that the detection circuitry is coupled to the first receptacle contact through the signal path even when there is no plug inserted in the receptacle. Thus, for the same reasons discussed, *supra*, with regard to the Galaxy Tab 7.0 SCH-I800, I find Apple's arguments regarding the Galaxy S II SGH-T989 not persuasive.

F. Technical Prong of the Domestic Industry Requirement

The Parties' Positions

Apple argues that its products, including the iPhone 3GS, iPhone 4, the iPhone 4S, iPad, iPad 2, and iPod Touch, practice asserted claims 13 and 14 of the '697 patent by detecting a low or high impedance across the signal path between the first receptacle contact and the detect contact. (CIB at 223.) Apple asserts that as with Samsung's non-infringement arguments, Samsung's primary argument with regard to technical prong is that Apple's domestic products do not meet the limitation of the detection circuitry coupled to the detect contact and first receptacle contact to detect that the signal path is a low or high impedance path when a plug is not present. (*Id.* at 224.) Apple argues that Samsung's argument is incorrect. (*Id.*) Apple argues that in the iPhone 4, Apple argues that

(*Id.*) With regard to the iPad 2, Apple argues that the

(*Id.*) Thus, Apple argues that for the same reasons Samsung’s non-infringement arguments fail, its arguments regarding the iPhone 4 and iPad 2 not practicing the ‘697 patent must also fail. (*Id.*)

Samsung argues that Apple has failed to show that its domestic industry products, the iPhone 4 and the iPad 2, practice the ‘697 patent. (RIB at 195.) Samsung argues that Apple has failed to show that the claimed “plug signal path” is present in its domestic products when there is a high impedance path (i.e., when there is no plug present). (*Id.*) Samsung also argues that Apple has failed to show that the “detection circuitry” in its accused products is “coupled to the first receptacle contact.” (*Id.* at 196.) Samsung argues that Apple’s domestic products operate in a manner analogous to its accused products that implement . (*Id.* at 195-196.) Thus, Samsung argues that for the same reasons its products do not infringe the asserted claims of the ‘697 patent, Apple’s domestic products do not practice claim 12 of the ‘697 patent. (*Id.*)

Staff argues that neither the iPhone 4 nor the iPad 2 practices asserted claims 13 and 14 of the ‘697 patent and that Apple has not satisfied the technical prong of domestic industry requirement for the ‘697 patent. (SIB at 94.) The Staff asserts that Apple’s expert Dr. Phinney acknowledged that the iPhone 4 uses circuitry. (SIB at 93.) Thus, the Staff contends that the same arguments it made with respect to Samsung’s accused products employing

circuitry effectively apply to a determination as to whether the Apple’s iPhone 4 practices claims 13 and 14 of the ‘697 patent. (*Id.*) With regard to the iPad 2, the Staff argues that although

for the iPhone 4 because both employ circuitry.

(*Id.* at 94.) Thus, the Staff argues that its comments regarding the iPhone 4 apply equally to the iPad 2.

Analysis

Apple alleges that each of its Domestic Industry products (*i.e.*, the iPhone 3GS, iPhone 4, iPhone 4S, iPad, iPad 2, and iPod touch) practices claims 13 and 14 of the ‘697 patent, as each and every claim limitation is present in the Domestic Industry products. (CX-2429C (Phinney DWS) at Q&A 44-67.) The Domestic Industry products use two different types of detection circuitry. (*Id.* at Q&A 46, 47.) Dr. Phinney testified that the

and that the iPhone 4 was

representative of those products. (*Id.* at Q&A 47.) Dr. Phinney also testified that

and that the iPad 2 was

representative of those products. (*Id.*)

The differences in detection circuitry between the iPhone 4 and the iPad 2 do not impact my overall analysis of whether the Domestic Industry Products practice the ‘697 patent. Thus, I will address Apple’s argument that the iPhone 4 practices the ‘697 patent together with Apple’s argument that the iPad 2 practices the ‘697 patent.

Dr. Phinney testified in detail that the iPhone 4 and iPad 2 practice the asserted claims of the ‘697 patent. (CX-2429C (Phinney DWS) at Q&A 48-67.) In support, Dr. Phinney relied on his analysis of schematic circuit diagrams, driver code, and component datasheets for the Domestic Industry Products. (*Id.* at Q&A 26.)

Samsung argues that Apple failed to show that the iPhone 4 and iPad 2 satisfy the limitations of claim 12 requiring “detection circuitry ... to detect that the signal path is ... a high impedance path” and “detection circuitry coupled to the detect contact and the first receptacle contact.” (RIB at 195-196.)

1. Do the iPhone 4 and iPad 2 “detect that the signal path is ... a high impedance path”?

The undisputed evidence is that the iPhone 4 and iPad 2 detect high impedance when the plug is removed from the receptacle. (CX-2429C (Phinney DWS) at Q&A 53, 61; RX-3637C (Russ RWS) at Q&A 687, 701.) The evidence also shows that removing the plug from the receptacle creates an open air gap between the detect contact and the first receptacle contact. (See RX-3637C (Russ RWS) at Q&A 689, 701; Tr. 919:6-921:24.) Consequently, when the plug is removed from the receptacle there is no longer a plug signal path through the plug and between the detect contact and the first receptacle contact. (See Tr. 917:8-918:11, 919:1-5; RX-3637C (Russ RWS) at Q&A 680, 683-89, 692-98, 701-04.) Therefore, the iPhone 4 and iPad 2 cannot satisfy the limitation of claim 12 requiring that the detection circuitry detect that the plug signal path is a high impedance path, because when there is high impedance there is no plug signal path. Thus, I find that Apple has failed to show that the iPhone 4 or iPad 2 satisfy all of the limitations of claim 12. Because asserted claims 13 and 14 depend from claim 12, I also find by extension that the iPhone 4 and iPod 2 do not satisfy all of the limitations of claims 13 and 14 for the same reasons espoused with regard to claim 12. 35 U.S.C. § 112 ¶ 4 (“A claim in dependent form shall be construed to incorporate by reference all the limitations of the claim to which it refers.”). Accordingly, I find Apple has failed to prove by a preponderance of the evidence that the iPhone 4 or iPad 2, and the other devices in those categories, practice any of the

claims of the '697 patent and thus has failed to satisfy the technical prong with regard to the '697 patent.

Apple argues, as it does in the infringement context, that there is a signal path even when the plug is not inserted in the receptacle. Thus, for the same reasons discussed, *supra*, with regard to the Galaxy Tab 7.0 SCH-I800 and Galaxy S II SGH-T989, I find Apple's arguments not persuasive.

2. Do the iPhone 4 and iPad 2 include "detection circuitry coupled to the detect contact and the first receptacle contact"?

iPhone 4

The evidence shows that in the iPhone 4 the first receptacle contact is

(Id.)

This arrangement is illustrated in the figure below, which I have annotated in accordance with Dr. Phinney's and Dr. Russ's testimony to show the pertinent components. (See CX-2429C (Phinney DWS) at Q&A 49-51; RX-3637C (Russ RWS) at Q&A 681-683; CX-180C at APL-ITC796-0000442976; CX-200C at APL-ITC796-0000528397; *see also* RDX-44C at 2, 3; CDX-634C; CDX-635C.)

iPad 2

The evidence shows that the first receptacle contact in the iPad 2

This arrangement is illustrated in the figure below, which I have annotated in accordance with Dr. Phinney's and Dr. Russ's testimony to show the pertinent components. (See CX-2429C

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(Phinney DWS) at Q&A 59-61; RX-3637C (Russ RWS) at Q&A 699-700; CX-175C at APL-ITC796-0000422607; CX-680C at APL-ITC796-0000403355, APL-ITC796-0000403360; *see also* RDX-44C at 10; CDX-640C; CDX-641C.)

Analysis

As is readily apparent from the diagrams above,

(RX-3637C (Russ RWS) at Q&A

686,689, 690, 698, 701.) Thus, I find Apple has failed to show that the iPhone 4 or iPad 2 satisfy

each of the limitations of independent claim 12. Likewise, because claims 13 and 14 depend from claim 12, Apple has also failed to show that the iPhone 4 or iPad 2 satisfy each of the limitations of asserted dependent claims 13 and 14. 35 U.S.C. § 112 ¶ 4 (“A claim in dependent form shall be construed to incorporate by reference all the limitations of the claim to which it refers.”). Accordingly, I find for this additional reason that Apple has not proven by a preponderance of the evidence that the iPhone 4 or iPad 2, and the other devices in those categories, infringe the asserted claims of the ‘697 patent.

Apple argues, as it does in the infringement context, that the detection circuitry is coupled to the first receptacle contact through the signal path even when there is no plug inserted in the receptacle. Thus, for the same reasons discussed, *supra*, with regard to the Galaxy Tab 7.0 SCH-I800 and Galaxy S II SGH-T989, I find Apple’s arguments not persuasive.

G. Validity

1. Anticipation

a. Kawano

Samsung argues that all of the asserted claims of the ‘697 patent are anticipated by Japanese published unexamined application: HII-288766 (“Kawano”) to Kawano, titled “Plug Insertion Detector.” (RX-3086 at 1.) In support, Samsung relies primarily on the testimony of its expert, Dr. Russ, who testified in detail that Kawano anticipates the asserted claims of the ‘697 patent. (See RX-3450C (Russ DWS) at Q&As 60-63; 87, 116-142.)

Kawano was published in 1999, which is more than one year prior to the June 11, 2007 effective filing date of the ‘697 patent. (See RX-3086 at 1; JX-005, cover page.) Thus, Kawano is prior art under 35 U.S.C. § 102(b).

Apple argues that Kawano fails to disclose the claimed “electronic device” or “first receptacle contact disposed in the receptacle.” Apple does not contest that Kawano discloses the claimed “detection circuitry coupled to the detect contact and the first receptacle contact to detect that the signal path is ... a high impedance path.” However, in light of the positions the parties took on this issue in the infringement context, I will address the issue in the validity context.

(1) Does Kawano disclose “detection circuitry coupled to the detect contact and the first receptacle contact to detect that the signal path is ... a high impedance path”?

Figure 1a of Kawano clearly illustrates that when the plug is removed from the receptacle, the detection circuitry, which Dr. Russ identifies as the pullup resistor to Vcc labeled R, is coupled to the detect contact, but not to the first receptacle contact, which is coupled only to ground. (RX-307 at Fig. 1a; RX-3450C (Russ DWS) at Q&A 155-157.) In fact, Samsung’s expert Dr. Russ admits there is an open circuit between the detect contact and first receptacle contact in Kawano when the plug is removed. (RX-3450C (Russ DWS) at Q&A 155, 157.) However, unlike his non-infringement opinions, here Dr. Russ concludes that even though there is an open circuit when the plug is removed, the detect contact and first receptacle contact are still both coupled to the detection circuitry. (Compare RX-3637C (Russ RWS) at Q&A 717 with RX-3450C (Russ DWS) at Q&A 156.) I give zero weight to Dr. Russ’s litigation driven, contradictory opinion. Thus, I find as I did in the infringement context that when the plug is removed from the receptacle there is neither a signal path that is a high impedance path nor detection circuitry coupled to both the detect contact and first receptacle contact. According, I find Samsung has failed to show by clear and convincing evidence that Kawano discloses each

and every limitation of the asserted claims and thus I find Kawano does not anticipate the asserted claims of the '697 patent.

(2) Does Kawano disclose “an electronic device”?

The Parties' Arguments

Apple argues that claims 12, 13 and 14 all relate to “an electronic device.” (CIB at 226.) Apple argues that the term “an electronic device” is recited both in the preamble of claim 12 as well as the body of claim 13 and thus is a limitation of the asserted claims. (*Id.*) Apple argues that Kawano discloses a terminal adaptor for a video camera, not an electronic device. (*Id.*) Apple argues that the terminal adaptor of Kawano cannot operate on its own and therefore cannot be an electronic device. (*Id.*) Apple argues that the video camera of Kawano is not an electronic device itself capable of detecting the presence of a plug because it does not include a receptacle configured to accept a plug. (*Id.* at 227.) Apple argues that while Kawano relates to plug detection, it does so through the use of a separate accessory, a terminal adaptor, whereas the '697 patent teaches incorporating plug detection technology into a single electronic device such as a mobile phone or notebook computer. (*Id.* at 226.)

Samsung argues that the term “electronic device” in the preamble to claim 12 is not a limitation. (RIB at 184.) Samsung argues that without any evidence that the term “an electronic device” recites essential structure or steps in claim 12, Apple argues that it must be a limitation otherwise claim 12 would be superfluous in light of claim 1. (*Id.* at 185.) Samsung argues that there are other differences between claim 12 and claim 1, and thus Apple’s argument must fail. (*Id.*)

Samsung argues that if the preamble is found to be limiting then Kawano teaches the preamble because it discloses a terminal adaptor assembled onto a video camera and circuitry in a combined device to detect the presence of a plug. (RIB at 199.) Samsung argues that Apple provides no explanation as to why a video camera is not an electronic device. (*Id.*) Samsung argues that the specification defines electronic device broadly as an electronic device or combinations thereof. (*Id.*) Samsung argues that a video camera with its adaptor would be such an electronic device. (*Id.*) Samsung contends that Apple's expert Dr. Phinney argued that the video camera in Kawano was not an electronic device because it did not include a receptacle configured to accept a plug, but instead required the user to attach the plug adaptor that included the receptacle to the video camera. (*Id.*) Samsung argues that Kawano explicitly teaches that the user assembles the video camera and adaptor together to form the device that accepts the plug. (*Id.* at 199-200.)

Analysis

The term "an electronic device" is recited in the preamble of claim 12. Typically, the preamble is not limiting. *Allen Eng'g Corp. v. Bartell Indus., Inc.*, 299 F.3d 1336, 1346 (Fed. Cir. 2002) (internal citation omitted). However, the preamble may be a limitation if "it recites essential structure or steps" or is "necessary to give life, meaning, and vitality" to the claim. *Catalina Mktg. Int'l, Inc. v. Coolsavings.com, Inc.*, 289 F.3d 801, 808 (Fed. Cir. 2002), *quoting Pitney Bowes, Inc. v. Hewlett-Packard Co.*, 182 F.3d 1298, 1305 (Fed. Cir. 1999).

Apple has asserted claims 13 and 14 of the '697 patent against Samsung in this investigation. Claim 13 specifically requires, *inter alia*, that "the control circuitry is configured to instruct ***the electronic device*** to utilize the first input/output component ..." and "the control

circuitry is configured to instruct *the electronic device* to utilize the accessory component ...” (JX-005 at 9:34-40 (emphasis added).) Here, “the electronic device” is claimed structure that derives antecedent basis from the term “an electronic device” in the preamble of independent claim 12. Thus, the preamble is necessary to give meaning to the claim. Accordingly, I find that the term “an electronic device” is a limitation of asserted claims. Samsung’s argument to the contrary is without merit.

In any event, Apple only accuses claims 13 and 14 of the ‘697 patent, not claim 12. Claim 13 specifically requires control circuitry “configured to instruct the electronic device.” Thus, in the context of claim 13 there can be no doubt that “the electronic device” is a limitation of the claim.

Having determined that “an electronic device” is a limitation, the question becomes whether Kawano discloses “an electronic device.” Apple argues that the disclosed “terminal adaptor” in Kawano is “an accessory component” and not “an electronic device” as those terms are used in the ‘697 patent. Samsung on the other hand contends that the disclosure of the terminal adaptor plugged into the video camera in Kawano constitutes the claimed “electronic device.”

The ‘697 patent describes “an electronic device” as:

any electronic device, such as, but not limited to, a music player, video player, still image player, game player, other media player, music recorder, video recorder, camera, other media recorder, radio, medical equipment, calculator, cellular telephone, other wireless communication device, personal digital assistant, remote control, pager, laptop computer, desktop computer, printer, or combinations thereof. In some cases, the electronic device may perform a single function (e.g., an electronic device dedicated to receiving and transmitting telephone calls) and, in other cases, the electronic device may perform multiple functions (e.g., an electronic device that plays music, displays video, stores pictures, and receives and transmits telephone calls).

In some case, electronic device 100 may generally be any portable, mobile, hand-held, or miniature electronic device with a jack capable of receiving and detecting a plug of an accessory device so as to allow a user to use the accessory in conjunction with the electronic device.

(JX-005 at 2:39-57.) The ‘697 patent describes “an accessory component” as:

any component that can be coupled to and used in conjunction with electronic device 100, such as, but not limited to, audio speakers, headphones, a video display, microphone, or combinations thereof. In some cases, the accessory component may perform a single function (e.g., an accessory dedicated to capturing audio signals and passing them on to electronic device 100) and, in other cases, the accessory component may perform multiple functions (e.g., an accessory that captures audio signals to pass on to the electronic device, as well as an accessory that receives audio signals from the electronic device and amplifies them for a user).

(*Id.* at 3:3-14.)

The invention of Kawano is a terminal adaptor, which is equipped with a microphone / headphone terminal, and is connected to a device, such as a video camera, to detect when a plug is inserted into the terminal adaptor. (*See* RX-3086 at 3, Fig. 2.) The ‘697 patent specifically lists a “video camera” as a type of electronic device, while describing an accessory component as “any component that can be coupled to and used in conjunction with” an electronic device. Kawano describes the terminal adaptor as “used by connecting to a video camera.” (*Id.* at 3.) Similarly, Kawano describes “the terminal adaptor 12” as “connected to the video camera 14 via connector 13” (*Id.* at 6.)

In light of the specification of the ‘697 patent, I find that the terminal adaptor disclosed in Kawano is more akin to the claimed “accessory component” in the ‘697 patent than the claimed “electronic device.” Because the terms “electronic device” and “accessory component” are separate limitations of the asserted claims they are presumed to have different meanings, and

thus, I find the terminal adaptor of Kawano is not an electronic device. (*See* CX-2599C (Phinney RWS) at Q&A 26, 29.) For the same reason, the disclosure in Kawano of the terminal adaptor connected to the video camera does not satisfy the limitation of the asserted claims requiring an electronic device.

Even if the disclosed terminal adaptor in Kawano was considered an electronic device, the terminal adaptor does not include control circuitry, which is required by claim 13. Thus, in no event does the disclosed terminal adaptor satisfy the limitations of the asserted claims of the ‘697 patent. Likewise, in no event does the disclosed video camera in Kawano satisfy the limitations of the asserted claims as it does not include either a “receptacle configured to accept a plug” or “detection circuitry.”

Accordingly, I find that Samsung has failed to show by clear and convincing evidence that Kawano discloses each and every limitation of the asserted claims and thus has failed to prove that Kawano anticipates claims 13 or 14 of the ‘697 patent.

(3) Does Kawano disclose “a first receptacle contact disposed in the receptacle”?

The Parties’ Arguments

Apple argues that Kawano does not disclose the limitation requiring “a first receptacle contact disposed in the receptacle.” (CIB at 227.) Apple argues that element 3d in Figures 1(a) and 1(b) of Kawano does not satisfy the first receptacle contact limitation because it is not disposed in the receptacle as the claim requires. (*Id.*) Apple argues that element 3d of Kawano is a ring, as indicated by the rectangular symbol. (*Id.*) Apple argues that the ring is located at the receptacle’s exterior, protruding from the housing of the terminal adaptor 12. (*Id.*) Apple argues the one of ordinary skill in the art looking at the Figures of Kawano would understand the

rectangular symbol as the side view of a ring used to mate with a plug, located on the exterior of the receptacle. (*Id.*)

Samsung argues it is clear from Kawano that the contacts are “disposed in” the receptacle. (RIB at 200.) Samsung argues that the figure show that each contact a, b, c, and d is inside the receptacle. (*Id.* at 201.) Samsung argues that, in fact, in the top picture the label 3d is pointing to the contact (the horizontal line that continues through the rectangle), which is well within the receptacle. (*Id.*) Samsung argues that Apple and the Staff’s position that the first receptacle contact in Figure 2 of Kawano is located at the receptacle’s exterior is based on a factual misreading of the patent. (RRB at 82.) Samsung argues that because element 11 is the receptacle, not the contact, it is a receptacle that protrudes slightly from the adapter housing, not the contact protruding from the receptacle. (*Id.*) Samsung argues that the rectangle cannot be read a limit Kawano to contacts not entirely in the receptacle because this is exactly how one of ordinary skill in the art draws jacks with contacts entirely in the receptacle. (*Id.* at 83.)

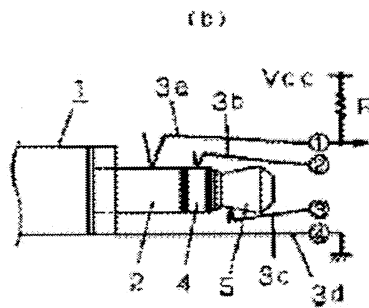
The Staff argues that the ring element 3d depicted in Kawano is at least partially disposed outside of the receptacle contrast to the contacts shown in the ‘697 patent which are completely disposed within the receptacle. (SIB at 95.) Staff argues that the figures in Kawano show that element 3d extends beyond the receptacle. (*Id.*) The Staff argues that the claim language indicates that the contact be “disposed in” the receptacle, not “partially in” the receptacle. (*Id.* at 96.) The Staff argues that in the ‘697 patent, the contacts are completely disposed within the receptacle. (*Id.*) The Staff argues that Samsung has not met its burden of establishing by clear and convincing evidence that the Kawano anticipates the claims of the ‘697 patent. (*Id.*)

Analysis

Claim 12 requires “a first receptacle contact disposed in the receptacle.” Although Samsung expert Dr. Russ contends that the claim does not require that the contact be completely disposed within the receptacle, the claim language indicates that the contact be “disposed in” the receptacle, not “partially in” the receptacle. (JX-005 at 9:14-30.) Moreover, the specification of the ‘697 patent depicts the contacts as completely disposed within the receptacle. (*See e.g.*, JX-005, Fig. 3.) Thus, I find one of ordinary skill in the art at the time of the invention would construe the phrase “disposed in” to require that the first receptacle contact be disposed entirely in the receptacle.

The evidence shows that element 3d is a ring contact as illustrated by the rectangular symbol on the left of the receptacle in Figure 1. (*See* CX-2599C (Phinney RWS) at Q&A 30, 31; RX-3086, Figs. 1, 2; *see also*, CX-721C; CX-722C; JX-0031.) The evidence shows that a ring contact is used to mate with a plug and that one of ordinary skill in the art would understand that a ring contact such as the one disclosed in Kawano extends at least partially outside of the receptacle. (*See* CX-2599C (Phinney RWS) at Q&A 30, 31; *see also*, CX-721C; CX-722C; JX-0031.) In fact, the evidence shows that Kawano depicts the rectangular symbol as protruding from the housing of the terminal adapter 12. (*See* CX-2599C (Phinney RWS) at Q&A 30; RX-3086, Fig. 2.) Thus, I find for the reasons above that Samsung has failed to show by clear and convincing evidence that Kawano discloses “a first receptacle contact disposed in the receptacle.” Accordingly, I find for this additional reason that Samsung has failed to prove that Kawano anticipates claims 13 or 14 of the ‘697 patent.

Samsung argues that element 3d refers to the horizontal line that is connected to ground. (See RIB at 201.) I find Samsung's argument not persuasive. Kawano specifically explains that "3d" is the pin that "makes contact with GND part 2 when 3 pole plug 1 is inserted." (RX-3086 at 10.) As is clearly shown in Figure 1b, below, it is the rectangle (*i.e.*, the ring contact) that contacts region 2 of the plug, not the horizontal line as Samsung contends.



b. Samsung's YP-T7J

Samsung argues that all of the asserted claims of the '697 patent are anticipated by the YP-T7J prior art Samsung MP3 player. In support, Samsung relies primarily on the testimony of its expert, Dr. Russ, who testified in detail that the YP-T7J anticipates the asserted claims of the '697 patent. (See RX-3450C (Russ DWS) at Q&A 169-196.)

The evidence shows that the YP-T7J was sold in the United States no later than February 2006, which is more than one year prior to the June 11, 2007, effective filing date of the '697 patent. (RX-3449C (Lee DWS) at Q&A 37; RX-3003C; RX-3097C; JX-005, cover page.) Thus, the YP-T7J is prior art under 35 U.S.C. § 102(b).

Apple argues that the YP-T7J fails to disclose the claimed "accessory component" or "control circuitry." Apple does not contest that Kawano discloses the claimed "detection circuitry coupled to the detect contact and the first receptacle contact to detect that the signal

path is ... a high impedance path.” However, in light of the positions the parties took on this issue in the infringement context, I will address the issue in the validity context.

- (1) **Does the YP-T7J disclose “detection circuitry coupled to the detect contact and the first receptacle contact to detect that the signal path is ... a high impedance path”?**

The schematic diagram of the YP-T7J clearly illustrates that when the plug is removed from the receptacle,

Thus, I find as I did in the infringement context that when the plug is removed from the receptacle there is neither a signal path that is a high impedance path nor detection circuitry coupled to both the detect contact and first receptacle contact. According, I find Samsung has failed to show by clear and convincing evidence that the YP-T7J discloses each and every limitation of the asserted claims and thus I find the YP-T7J does not anticipate the asserted claims of the ‘697 patent.

- (2) **Does the YP-T7J include “an accessory component”?**

The Parties’ Arguments

Apple argues that the YP-T7J does not disclose the required “plug of an accessory component.” (CIB at 228.) Apple argues that the YP-T7J includes a line-in jack to record from an external, separate electronic device, such as a CD player. (*Id.*) Apple argues that this external

electronic device would not be considered an accessory component as required by the claims or by one of skill in the art. (*Id.*) Apple argues that the '697 patent makes clear that accessory components are "audio speakers, headphones, a video display, microphone, or combination thereof." (*Id.* at 228-229.) Apple argues that these items are all useful as accessories to Electronic Devices that are not useful on their own like a CD player is. (*Id.* at 229.) Apple argues that the CD player that is used with the YP-T7J that Samsung labels as an accessory component is clearly not an accessory as required by the '697 patent, but rather a standalone electronic device. (*Id.*)

Samsung argues that the YP-T7J has a jack on the bottom that accepts a plug that can be connected to any audio source. (RIB at 204.) Samsung argues that the YP-T7J uses a signal path created through the plug between two contacts to determine whether a plug is present in the jack. (*Id.*) Samsung contends that Apple only disputes that the YP-T7J does not disclose an accessory component. (*Id.*) Samsung contends that Apple's argument is premised on the idea that the YP-T7J user manual shows a connector to a CD player and that a CD player is not an accessory component. (*Id.*) Samsung argues that the '697 patent explicitly teaches that such a CD player is in fact an accessory component within the meaning of the claims. (*Id.*) Samsung argues that Apple's interpretation that a CD player is more like an "electronic device" than an "accessory component" select all cut misreads the patent which does not strictly create a dichotomy between electronic devices and accessories. (*Id.*) Samsung argues that the '697 patent clearly states that anything used with the electronic device is considered an accessory component. (*Id.* at 205.) Samsung also argues that the specification describes an accessory component as something the capture sound and outputs it to the electronic device, just like a CD

player does. (*Id.*) Samsung also argues that the user manual does not limit the YP-T7J to a CD player, but states that any external audio source can be utilized. (*Id.*) Samsung argues that because the jack in the YP-T7J was used with numerous types the accessory components, the claim is met regardless of whether the CD player example in the user manual would itself be an accessory component. (*Id.* at 206.)

The Staff argues that the CD player disclosed in the manual for the YP-T7J is not an accessory component as required by claims 13 and 14 of the '697 patent. (SIB at 96.) The Staff argues that the '697 patent indicates that a CD player is an electronic device and not an accessory component. (*Id.*) Thus, the Staff argues Samsung failed to meet its burden of establishing by clear and convincing evidence that the claims are anticipated. (*Id.*)

Analysis

The asserted claims of the '697 patent require both “an electronic device” and “an accessory component.” The manual for the YP-T7J states that the YP-T7J can be connected to an external audio source through a cable running from the out port / line out of “the external audio source to the ENC port on the YP-T7J.” (RX-3104 at 11.) This is illustrated in the manual as a portable CD player connected via a line cable to the ENC port of the YP-T7J. (*Id.*) Samsung asserts that the YP-T7J is the claimed “electronic device” and the portable CD player / external audio source is the claimed “accessory component.” The parties dispute whether the disclosed portable CD player / external audio source is the claimed “accessory component.”

The '697 patent describes “an electronic device” as:

any electronic device, such as, but not limited to, a music player, video player, still image player, game player, other media player, music recorder, video recorder, camera, other media recorder, radio, medical equipment, calculator, cellular telephone, other wireless communication device, personal digital

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assistant, remote control, pager, laptop computer, desktop computer, printer, or combinations thereof. In some cases, the electronic device may perform a single function (e.g., an electronic device dedicated to receiving and transmitting telephone calls) and, in other cases, the electronic device may perform multiple functions (e.g., an electronic device that plays music, displays video, stores pictures, and receives and transmits telephone calls).

In some case, electronic device 100 may generally be any portable, mobile, hand-held, or miniature electronic device with a jack capable of receiving and detecting a plug of an accessory device so as to allow a user to use the accessory in conjunction with the electronic device. ... Alternatively, electronic devices of the invention that include a jack capable of receiving and detecting a plug of an accessory ... may not be portable at all.

(JX-005 at 2:39-57, 2:67-3:2.) The '697 patent describes "an accessory component" as:

any component that can be coupled to and used in conjunction with electronic device 100, such as, but not limited to, audio speakers, headphones, a video display, microphone, or combinations thereof. In some cases, the accessory component may perform a single function (e.g., an accessory dedicated to capturing audio signals and passing them on to electronic device 100) and, in other cases, the accessory component may perform multiple functions (e.g., an accessory that captures audio signals to pass on to the electronic device, as well as an accessory that receives audio signals from the electronic device and amplifies them for a user).

(*Id.* at 3:3-14.)

The '697 patent describes an accessory component as "any component that can be coupled to and used in conjunction with electronic device 100." While it is true that the user manual for the YP-T7J discloses the CD player coupled to and used in conjunction with the YP-T7J, I find that the evidence fails to establish clearly and convincingly that the CD player is a component as that term is used in the context of the '697 patent. Rather, the disclosed CD player/external audio source is more akin to "an electronic device" as it is a "device with a jack capable of receiving and detecting a plug of an accessory." (See JX-005 at 2:39-57, 2:67-3:2.) In fact, the evidence shows that one of ordinary skill in the art at the time of the invention would

understand the disclosed CD player/external audio source to be an electronic device and not an accessory component within the context of the '697 patent. (See CX-2599C (Phinney RWS) at Q&A 42.) Thus, contrary to Samsung's argument, the user manual for the YP-T7J does not disclose an electronic device coupled to an accessory component, but instead shows one electronic device coupled to another electronic device. (*Id.*) Accordingly, I find that Samsung has failed to show by clear and convincing evidence that the YP-T7J includes, or the YP-T7J manual discloses, the claimed accessory component. Because the YP-T7J does not disclose each and every limitation of the asserted claims, I find for this additional reason that the YP-T7J does not anticipate the asserted claims of the '697 patent.

- (3) **Does the YP-T7J include “control circuitry ... configured to instruct the electronic device to utilize the first input/output component when a detect signal ... has a first value, and ... utilize the accessory component when the detect signal has a second value”?**

The Parties' Arguments

Apple argues that the YP-T7J does not include the claimed “control circuitry ... configured to instruct” the device to use its internal microphone versus the CD player as required by the '697 patent claims. (CIB at 229.) Apple argues that its expert Dr. Phinney conducted testing, which the user manual confirms, and found that user input and not control circuitry is required to cause the YP-T7J to use the internal microphone instead of an external input. (*Id.*) Apple argues that in order to switch from recording from an external source to recording from an internal FM tuner or microphone, the user must restart the recording process. (*Id.*) Apple argues that there is no circuitry that performs this as required by the '697 patent, let alone circuitry that performs it based on plug detection. (*Id.*) Apple argues that the '697 patent describes the audio

directing function of the control circuitry without reference to user input. (*Id.*) Apple argues that the YP-T7J's circuitry does not perform automatic routing of audio signals between a first input output component and an accessory component and therefore does not meet the claim of control circuitry configured to instruct the electronic device to utilize either component. (*Id.*)

Samsung argues that if a user presses record while a plug is present in the lower jack, the control circuitry instructs the device to use the external audio source. (*Id.* at 207.) Samsung argues that if a user presses record while no plug is present in lower jack, that role circuitry instructs the device to use the internal microphone. (*Id.*) Samsung contends a claim 30 requires control circuitry to instruct the device to utilize the first input/output component when a detect signal on the detect contact as a first value and configured to instruct the electronic device to utilize the accessory component when the detect signal has a second value. (*Id.*) Samsung argues that the YP-T7J circuitry does exactly that by setting a variable in memory indicative of whether the record source is the built in microphone for audio source connected to the jack, based on whether are not there is a plug in the jack. (*Id.*) Samsung contends that Apple attempts to avoid this evidence by changing the claim language and asserting that the circuitry must be operative to "switch" from one circuit to the other to argue that the YP-T7J does not have the right switch. (*Id.*) Samsung argues that the claims do not require a specific switch nor do they say that there must be immediate or automatic switching from one circuit to the other as soon as the plug is inserted or removed. (*Id.*) Samsung also contends that Apple does not apply this "immediate switching" limitation consistently, arguing that if immediate switching or acquired in Apple's own products would not meet the claim limitation. (*Id.* at 107-208.)

The Staff does not address this argument. (*See* SIB at 96.)

Analysis

Claim 13 requires “control circuitry ... configured to instruct the electronic device to utilize the first input/output component when a detect signal ... has a first value, and ... utilize the accessory component when the detect signal has a second value.” Samsung relies on the YP-T7J’s internal microphone as the claimed “first input/output component” and the disclosed CD player / external audio source as the “accessory component.” Although I have found, *supra*, that the disclosed CD player/external audio source is not an “accessory component,” I will assume *arguendo* that it is for purposes of analyzing whether the YP-T7J includes the claimed control circuitry.

The evidence shows

Apple argues that the YP-T7J does not have the claimed control circuitry because “the circuitry does not perform automatic routing of audio signals between a first input/output component and an accessory component.” (RIB at 229.) Claim 13, however, does not require that the claimed control circuitry perform automatic routing. In fact, there is nothing in claim 13 that requires the control circuitry to route anything. The plain language of the claim requires only that the control circuitry be configured to instruct the electronic device to utilize either the internal microphone (*i.e.*, the first input/output component) or the accessory component based on the value of the detect contact. Here, the evidence shows that YP-T7J includes control circuitry that reads and stores the value of the detect contact signal (*i.e.*, LINE_DET / GPIO_E4) and that it is this value that instructs the software code running on the YP-T7J to use either the internal microphone or accessory component. Thus, I find Apple’s argument not persuasive.

Accordingly, for the reasons discussed above, I find the evidence clearly and convincingly shows that the YP-T7J includes “control circuitry ... configured to instruct the electronic device to utilize the first input/output component when a detect signal ... has a first value, and ... utilize the accessory component when the detect signal has a second value.” Nevertheless, because I have found, *supra*, that the YP-T7J does not disclose “an accessory component” or “detection circuitry coupled to the detect contact and the first receptacle contact to detect that the signal path is ... a high impedance path,” Samsung has still failed to prove that the YP-T7J anticipates the asserted claims of the ‘697 patent.

c. Osada

Samsung argues that claim 12 is anticipated by Japanese Unexamined Patent Publication 2003-297501 (“Osada”) and that Osada in combination with other prior art references render

claims 13 and 14 obvious. (RIB at 208-209.) The evidence shows that Osada was published on October 17, 2003, which is more than one year prior to the June 11, 2007 effective filing date of the '697 patent. (*See* RX-3115 at 1; JX-005, cover page.) Thus, Osada is prior art under 35 U.S.C. § 102(b).

Claim 12 is not asserted in this investigation and therefore the determination of whether claim 12 is anticipated by Osada is outside the scope of this investigation. Samsung admits that it is only arguing that asserted claims 13 and 14 are obvious in light of Osada. Thus, I will reserve any discussion of Osada for my analysis of Samsung's obviousness arguments, *infra*.

2. Obviousness

a. Kawano in combination with Nakajima, YP-K3, YP-T7J or SMK

The Parties' Positions

Apple argues that like Kawano, Nakajima is not an electronic device. (CRB at 103.) Rather, apple argues it is an analog portable cassette player with no additional circuitry. (*Id.*) Apple argues that Dr. Russ admits that like the YP-T7J, Nakajima and the YP-K3 do not disclose a first input/output component. (*Id.*) Apple also argues that the SMK jacks disclose various jack designs, but no related circuitry. (*Id.*) Apple argues that the only motivation to combine that Samsung offers is that Kawano, Nakajima, YP-T7J, and YP-K3 are devices that include jacks and therefore, they could have included SMK jacks. (*Id.*) Apple argues that Samsung fails to meet its burden to prove why one of ordinary skill in the art would be motivated to include absentee jacks in these devices beyond the fact that they could have purchased them at the time. (*Id.*) Apple also argues that no combination put forth by Samsung demonstrates an electronic

device with a first receptacle contact disposed in the receptacle having a first input output component and control circuitry configured to instruct. (*Id.*)

Samsung contends that Apple's only arguments are that Kawano is video camera/adaptor is not "an electronic device" and that Kawano may not teach spring contacts that apply of force to clean debris. (RIB at 211.) Samsung argues that during the hearing, however, Apple's expert abandoned this later position. (*Id.*) Samsung argues that should Kawano be found not to teach an electronic device that Kawano along with nearly any other prior art discussed would render the '697 patent obvious. (*Id.*) Samsung asserts that almost every other piece of prior art has electronic device combined with his plug receptacle, and also discloses bring contacts this pose 100% entirely within the receptacle. (*Id.*) Samsung notes that the YP-K3 and the YP-T7J are single unibody electronic devices at incorporated a jack. (*Id.*) Samsung argues that Nakajima and the SMK jacks teach the use of jacks in such an electronic device. (*Id.*) Samsung argues that was motivation to combine Kawano with any or all of the references and actual devices. (*Id.* at 212.) Samsung argues for example that the SMK devices are actual jacks or available on the open market before the '697 patent Samsung asserts that these SMK jacks were marketed in a press release stating "a make-switch system adopted for plug detection improves contact reliability due to its self-cleaning effect." (*Id.*) Samsung argues that a person of ordinary skill intending to build the plug detection system disclosed in Kawano would have been motivated to purchase and SMK jack for the implementation in order to have a plug in receptacle that clean debris. (*Id.*) The Samsung argues that because the SMK jacks were marketed as an improvement one of ordinary skill in the art would have been motivated to combine Kawano and the SMK jacks. (*Id.*) Samsung argues that Apple never contended that buying and using that

SMK jacks would have been beyond the skill of a person of ordinary skill in the art. (*Id.*)

Samsung further argues that to the extent there is a benefit to the contact arrangement in the YP-K3 and YP-T7J, there would have been motivation to combine Kawano with the YP-K3 and YP-T7J. (*Id.* at 213.)

Analysis

(1) Kawano and Nakajima

Samsung argues that the asserted claims of the ‘697 patent are invalid as obvious in light of Kawano in view of Japanese Unexamined Patent Publication S62-58991 (“Nakajima”) to Nakajima. (RX-3108.) Nakajima was published on April 11, 1987, which is before the June 11, 2007 effective filing date of the ‘697 patent. (*Id.*) Thus, Nakajima is prior art under 35 U.S.C. § 102 (b).

As discussed, *supra*, Kawano fails to disclose: an electronic device, a first receptacle contact disposed in the receptacle, detection circuitry to detect a high impedance path, and detection circuitry coupled to the detect contact and the first receptacle contact when there is high impedance (*i.e.*, when the plug is removed).

Samsung does not assert that Nakajima discloses either detection circuitry to detect a high impedance path or detection circuitry coupled to the detect contact and first receptacle contact when the plug is removed. As can be plainly discerned from Figure 1 of Nakajima, removal of the plug from the receptacle would create an open air gap between the detect contact 4 and first receptacle contact 5 and thus there would be no “signal path” that is a high impedance path. (*See* RX-3108 at Fig. 1; RX-3450C (Russ DWS) at Q&A 312.) Additionally, because there would be an open air gap between the detect contact and the first receptacle

contact, the detection circuitry would not be considered “coupled” to the first receptacle contact 5, which would be coupled only to ground. (See RX-3108 at Fig. 1.) Accordingly, I find that neither Kawano nor Nakajima disclose “detection circuitry coupled to the detect contact and the first receptacle contact to detect that the signal path is ... a high impedance path” and thus I find the combination of Kawano and Nakajima cannot render obvious the asserted claims of the ‘697 patent.²⁷

I further find that Samsung has failed to sufficiently articulate a motivation to combine Kawano with Nakajima. Dr. Russ testified on behalf of Samsung that he believed there would be motivation for one of ordinary skill in the art to combine Nakajima and Kawano because “to a person of ordinary skill looking to design an earjack, Nakajima and Kawano together, among other references, comprise the state of the art of earjack technology.” (RX-3450C (Russ DWS) at Q&A 306.) I find this testimony conclusory and inadequate to support a *prima facie* showing of obviousness. Dr. Russ’s general testimony regarding the state of the art of earjack technology does not provide sufficient rationale for a motivation to combine and Dr. Russ does not provide an explanation as to why the mere fact that the two references may both comprise the state-of-the-art of earjack technology would motivate one of ordinary skill in the art to combine the references. Accordingly, for this additional reason I find Samsung has failed to prove by clear and convincing evidence that the asserted claims of the ‘697 patent are obvious in light of Kawano in view of Nakajima.

²⁷ I observe that neither Apple nor Samsung are in the position of addressing this issue since resolution of it is inconsistent with either their infringement or validity contentions.

(2) Kawano and YP-K3

Samsung argues that the asserted claims of the '697 patent are invalid as obvious in light of Kawano in view of Samsung media player YP-K3. The evidence shows that YP-K3 was known, used and/or on sale no later than March 2, 2007, which is before the June 11, 2007, effective filing date of the '697 patent. (RX-3450C (Russ DWS) at Q&A 234-41; RX-3449 (Lee DWS) at Q&A 32; RX-3111C; RX-3112C at 21-22; RX-3239 at 3; RX-3242 at 3.) Thus, the YP-K3 is prior art under 35 U.S.C. § 102 (a).

As discussed, *supra*, Kawano fails to disclose: an electronic device, a first receptacle contact disposed in the receptacle, detection circuitry to detect that the signal path is a high impedance path, and detection circuitry coupled to the detect contact and the first receptacle contact when there is high impedance (*i.e.*, when the plug is removed).

Samsung does not assert that the YP-K3 discloses either detection circuitry to detect that the signal path is a high impedance path or detection circuitry coupled to the detect contact and first receptacle contact when the plug is removed. As can be plainly seen in the schematic of the earphone jack of the YP-K3, removal of the plug creates an open air gap between the detect contact 5b and first receptacle contact 5 and thus there is no "signal path" that is a high impedance path. (See RX-3098 at 5; RX-3450C (Russ DWS) at Q&A 253.) Additionally, because there is an open air gap between the detect contact 5b and the first receptacle contact 5, the detection circuitry, which Dr. Russ identifies as including at least the pullup resistor to Vdd labeled R103 and the signal EAR_DET, would not be considered "coupled" to the first receptacle contact 5 when the plug is removed from the receptacle. (RX-3098 at 5.) Accordingly, I find that neither Kawano nor the YP-K3 disclose "detection circuitry coupled to

the detect contact and the first receptacle contact to detect that the signal path is ... a high impedance path” and thus I find the combination of Kawano and the YP-K3 cannot render obvious the asserted claims of the ‘697 patent.

I further find that Samsung has failed to articulate a motivation to combine Kawano with the YP-K3. Samsung presents no testimony explaining why one of ordinary skill in the art would be motivated by the YP-K3 to integrate the terminal adaptor of Kawano into an electronic device. The fact that the YP-K3 is a single unibody electronic device that incorporates a jack does not suffice as motivation to alter Kawano. Moreover, Kawano specifically teaches the terminal adapter as a separate component because “[a]s video cameras get miniaturized, the space is gone that provides terminals which enable plugs such as a headphone plug and a microphone plug to be inserted and connected.” (RX-3086 at 3.) Thus, Kawano teaches against integrating the terminal adaptor in an electronic device. Accordingly, for this additional reason I find Samsung has failed to prove by clear and convincing evidence that the asserted claims of the ‘697 patent are obvious in light of Kawano in view of YP-K3.

(3) Kawano and YP-T7J

Samsung argues that the asserted claims of the ‘697 patent are invalid as obvious in light of Kawano in view of Samsung media player YP-T7J.

I have already found in my analysis of Samsung’s anticipation allegations, *supra*, that neither Kawano nor the YP-T7J disclose “detection circuitry coupled to the detect contact and the first receptacle contact to detect that the signal path is ... a high impedance path.” Thus, I find the combination of Kawano and YP-T7J cannot render obvious the asserted claims of the ‘697 patent.

I further find that Samsung has failed to articulate a motivation to combine Kawano with the YP-T7J. Samsung presents no testimony explaining why one of ordinary skill in the art would be motivated by the YP-T7J to integrate the terminal adaptor of Kawano into an electronic device. The fact that the YP-T7J is a single unibody electronic device that incorporates a jack does not suffice as motivation to alter Kawano. Moreover, Kawano specifically teaches the terminal adapter as a separate component because “[a]s video cameras get miniaturized, the space is gone that provides terminals which enable plugs such as a headphone plug and a microphone plug to be inserted and connected.” (RX-3086 at 3.) Thus, Kawano teaches against integrating the terminal adaptor in an electronic device. Accordingly, for this additional reason I find Samsung has failed to prove by clear and convincing evidence that the asserted claims of the ‘697 patent are obvious in light of Kawano in view of YP-T7J.

(4) Kawano and SMK

Samsung argues that the asserted claims of the ‘697 patent are invalid as obvious in light of Kawano in view of the LGY2109-0200F jack and the LGY2209-0101F jack (collectively, “SMK Devices”) manufactured by SMK. The evidence shows that the LGY2109-0200F jack was announced as available for purchase at least as of January 11, 2007, which is before the June 11, 2007, effective filing date of the ‘697 patent. (RX-0623; RX-3450C (Russ DWS) at Q&A 328.) Thus, the LGY2109-0200F jack is prior art under 35 U.S.C. § 102 (a). The evidence shows the LGY2209-0101F jack was sold as early as September 4, 2004, which is at least one year before the June 11, 2007, effective filing date of the ‘697 patent. (RX-3398C at 6, 17; RX-3450C (Russ DWS) at Q&A 328.) Thus, the LGY2209-0101F jack is prior art under 35 U.S.C. § 102 (b).

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As discussed, *supra*, Kawano fails to disclose: an electronic device, a first receptacle contact disposed in the receptacle, detection circuitry to detect that the signal path is a high impedance path, and detection circuitry coupled to the detect contact and the first receptacle contact when there is high impedance (*i.e.*, when the plug is removed).

Samsung does not assert that the SMK Devices disclose an electronic device and thus the combination of Kawano and the SMK Devices still fails to teach the claimed “electronic device.” Because the combination of Kawano and the SMK Devices does not disclose each of the limitations of the asserted claims, Samsung has failed to prove by clear and convincing evidence that the asserted claims of the ‘697 patent would have been obvious in light of Kawano in view of the SMK Devices.

Samsung also does not assert that the SMK Devices disclose detection circuitry to detect that the signal path is a high impedance path or detection circuitry coupled to the detect contact and the first receptacle contact when the plug is removed from the receptacle and thus the combination of Kawano and the SMK Devices still fails to teach the claimed “detection circuitry coupled to the detect contact and the first receptacle contact to detect that the signal path is ... a high impedance path.” Because the combination of Kawano and the SMK Devices does not disclose each of the limitations of the asserted claims, I find for this additional reason that Samsung has failed to prove by clear and convincing evidence that the asserted claims of the ‘697 patent would have been obvious in light of Kawano in view of the SMK Devices.

I further find that Samsung has failed to sufficiently articulate a motivation to combine Kawano with the SMK Devices. The only reason Dr. Russ provides that one would have looked to integrate one of the SMK Devices into the invention of Kawano is because “*if a person were*

actually looking for a debris-removing or self-cleaning effect in the jack they applied the teachings of Kawano to, they would have learned that such a jack was available from the advertisement SMK published.” (RX-3450C (Russ DWS) at Q&A 341 (emphasis added).) I find Dr. Russ’s testimony to be complete conjecture as Dr. Russ fails to explain in the first instance why one would want to alter the jack in Kawano or be looking for a debris-removing / self-cleaning jack. Accordingly, for this additional reason I find Samsung has failed to prove by clear and convincing evidence that the asserted claims of the ‘697 patent are obvious in light of Kawano in view of the SMK Devices.

b. YP-T7J in combination with SMK or YP-K3

The Parties’ Positions

Apple argues that like Kawano, Nakajima is not an electronic device. (CRB at 103.) Rather, apple argues it is an analog portable cassette player with no additional circuitry. (*Id.*) Apple argues that Dr. Russ admits that like the YP-T7J, Nakajima and the YP-K3 do not disclose a first input/output component. (*Id.*) Apple also argues that the SMK jacks disclose various jack designs, but no related circuitry. (*Id.*) Apple argues that the only motivation to combine that Samsung offers is that Kawano, Nakajima, YP-T7J, and YP-K3 are devices that include jacks and therefore, they could have included SMK jacks. (*Id.*) Apple argues that Samsung fails to meet its burden to prove why one of ordinary skill in the art would be motivated to include absentee jacks in these devices beyond the fact that they could have purchased them at the time. (*Id.*) Apple also argues that no combination put forth by Samsung demonstrates an electronic device with a first receptacle contact disposed in the receptacle having a first input output component and control circuitry configured to instruct. (*Id.*)

Samsung argues that to the extent Apple argues that the jack in the YP-T7J is not constructed for debris clearing, the SMK devices are, and the YP-T7J in light of the SMK renders the asserted claims of the '697 patent obvious. (RIB 213.) Samsung argues that the same reason one of ordinary skill in the art be motivated to combine Kawano and the SMK Devices they be motivated to combine the YP-T7 J and the SMK Devices. (*Id.*) Samsung argues that the YP-T7J is a portable media player and the SMK catalog was directed to "small portable equipment." (*Id.*) Samsung argues that in designing its products, Samsung had its choice and jack manufacturers, including SMK. Samsung also argues that as some key market its products to clear debris and detect the presence of a plug. (*Id.*)

Samsung contends that Apple's only argument to why the YP-T7J does not anticipate is that the YP-T7J does not utilize an accessory component. (*Id.*) Samsung argues that if such is true, then the YP-T7J and YP-K3 Samsung devices would render the claims obvious. (*Id.*) Samsung argues that Apple does not deny that Samsung's YP-K3 utilizes the same plug detection scheme as the YP-T7J and that the YP-K3 uses headphones, which are an accessory component. (*Id.*) Samsung argues that since the YP-T7J and the YP-K3 were both portable music players manufactured by Samsung, if that was truly an advantage to using headphones instead of an external audio source, a person of ordinary skill would have been motivated to combine the YP-T7J's ability to instruct the device whether to utilize an internal or external input source with the YPK3's headphones. (*Id.* at 214.)

Analysis

(1) YP-T7J and SMK

As discussed, *supra*, the YP-T7J fails to disclose: an accessory component, detection circuitry to detect that the signal path is a high impedance path, and detection circuitry coupled to the detect contact and the first receptacle contact when there is high impedance (*i.e.*, when the plug is removed).

Samsung argues only that “to the extent Apple argues that the jack in YP-T7J is not constructed for debris clearing, the SMK devices are.” (RIB at 213.) However, the asserted claims of the ‘697 patent do not require a jack capable of debris clearing. Thus, I find Samsung has failed to provide any valid reason why one of ordinary skill in the art would be motivated in the first instance to change out the ENC jack on the YP-T7J, much less why one would be motivated to combine a SMK Device with the YP-T7J. Accordingly, I find Samsung has failed to prove by clear and convincing evidence that the asserted claims of the ‘697 patent would have been obvious in light of the YP-T7J in view of the SMK Devices.

Samsung does not assert that the SMK Devices disclose an accessory component, detection circuitry to detect that the signal path is a high impedance path, and detection circuitry coupled to the detect contact and the first receptacle contact when there is high impedance. Thus, the combination of the YP-T7J and the SMK Devices still fails to disclose these limitations of the asserted claims of the ‘697 patent. Accordingly, for this additional reason, I find Samsung has failed to prove by clear and convincing evidence that the asserted claims of the ‘697 patent are obvious in light of the YP-T7J in view of the SMK Devices.

(2) YP-T7J and YP-K3

As discussed, *supra*, the YP-T7J fails to disclose: an accessory component, detection circuitry to detect that the signal path is a high impedance path, and detection circuitry coupled to the detect contact and the first receptacle contact when there is high impedance (*i.e.*, when the plug is removed).

Samsung argues that the YP-K3 discloses an accessory component in the form of headphones. However, Samsung provides no explanation as to why one of ordinary skill in the art would be motivated to combine the headphones of the YP-K3 with the YP-T7J. Samsung has taken the position that the ENC jack on the YP-T7J is the claimed receptacle. The manual for the YP-T7J states that the YP-T7J can be connected to an external audio source through a cable running from the out port / line out of “the external audio source to the ENC port on the YP-T7J.” (RX-3104 at 11.) Headphones are not an “external audio source.” Moreover, the YP-T7J includes a separate microphone / earphone jack explicitly for headphone use. (RX-3104 at 5.) Thus, I find Samsung has failed to show that there would be any motivation to use the headphones of YP-K3 in the ENC jack of the YP-T7J. Moreover, in light of the disclosure that the ENC jack is for external audio sources, it is entirely unclear whether using headphones in the ENC jack would even work. Accordingly, I find Samsung has failed to show by clear and convincing evidence that the asserted claims of the ‘697 patent would have been obvious in light of the YP-T7J in view of the YP-K3.

Samsung does not assert that the YP-K3 discloses detection circuitry to detect that the signal path is a high impedance path and detection circuitry coupled to the detect contact and the first receptacle contact when there is high impedance. Thus, the combination of the YP-T7J and

the SMK Devices still fails to disclose these limitations of the asserted claims of the '697 patent. Accordingly, I find Samsung has failed to show by clear and convincing evidence that the asserted claims of the '697 patent would have been obvious in light of the YP-T7J in view of the YP-K3.

c. Osada in combination with Kawano, Motorola V Phones, YP-T7J, or YP-K3

The Parties' Positions

Apple argues that Samsung has not shown any motivation to combine Osada, which discloses an optical jack, with the audio jacks in these other pieces of alleged prior art and the '697 patent. (CIB at 236.) Apple argues that a person of ordinary skill in the art would of understood the Osada invention to be directed towards the problem of optical beam alignment that is faced in every type of connector used for transmitting optical signals. (*Id.*) Apple argues that because Osada is directed to solving the particular problems of a different interconnection technology (connectors for optical signals) than the other prior art (connectors for electrical signals) there would have been no motivation to combine these references. (CRB at 104.) Apple argues that other than stating that all the devices are consumer electronics Samsung has made no argument that there is any motivation to combine. (*Id.*) Apple argues that Samsung's generic argument cannot meet its high burden to show obviousness. (*Id.*)

Apple argues that Samsung has failed to show that either Osada or the Motorola V phones contain the detection circuitry coupled to the detect contact and the first receptacle contact limitation. (CRB at 103.) Apple argues that the staff correctly points out that Dr. Russ has not analyzed circuitry or code that runs on the processor of the Motorola V phones and therefore cannot show circuitry coupled to the detect contact and all, let alone circuitry that is

configured to instruct the device to switch between an accessory and a first input/output component. (*Id.* at 103-104.)

Samsung argues that Osada in light of Kawano, Motorola V phones, the YP-T7J, or the YP-K3 renders the asserted claims obvious. (RIB at 214.) Samsung argues that Osada discloses each of the limitations of claim 12. (*Id.* at 208-209.) Samsung argues that Osada discloses a plug detection apparatus that detects the presence or absence of a plug based on the impedance between two contacts. (*Id.*) Samsung argues that “[r]egardless of which element may be found “missing,” Osada, Kawano, Motorola V Phones, YP-T7J or YP-K3 would render the asserted claims of the ‘697 patent obvious.” (*Id.* at 214.) Samsung argues there is motivation to combine Osada with Kawano, the Motorola V phones, the YP-T7J, and the YP-K3. (*Id.*) Samsung argues that “to the extent there is any benefit to utilizing the control circuitry described in claim 13, it would have been obvious for a person of ordinary skill in the art to combine Osada with the disclosures in Kawano in these devices.” (*Id.* at 214-215.)

The Staff argues that although Dr. Russ concludes that it would have been obvious to combine the connector of Osada with other references to implement the features of claim 13, Dr. Russ simply states that “assuming that the feature [of claim 13] was desirable, it would be obvious for a person of ordinary skill in the art to look to electronic devices with jacks like the one in Osada to find a solution.” (SIB at 98.) The Staff argues that Dr. Russ’ conclusory statement is insufficient to support an obviousness theory. (*Id.*)

Analysis

Samsung argues that the asserted claims are obvious in light of Osada in view of Kawano, Motorola V Phones, YP-T7J or YP-K3. (RIB at 214-215.) Samsung devotes two scant

paragraphs in its initial-post hearing brief to arguing this plethora of obviousness combinations. Samsung argues that “[r]egardless of which elements may be found ‘missing,’ Osada, Kawano, Motorola V Phones, YP-T7J or YP-K3 would render the asserted claims of the ‘697 patent obvious.” (RIB at 214.) I find Samsung’s argument concerning “Osada in combination with Kawano, Motorola V Phones, YP-T7J, or YP-K3” to be entirely conclusory and note that Samsung cites no expert testimony in support of its contention. Moreover, I find Samsung fails to provide even a rudimentary explanation as to why one of ordinary skill in the art would be motivated to make these obviousness combinations. Samsung merely states that “to the extent there is any benefit to utilizing the control circuitry described in claim 13, it would have been obvious for a person of ordinary skill to combine Osada with the disclosures in Kawano and these devices.” (*Id.* at 214-215.) I find this statement to be insufficient articulation of a motivation to combine and again note that Samsung cites no support for its assertion. Accordingly, for the reasons above, I find Samsung has failed to even set forth a *prima facie* case of obviousness based on Osada in view of Kawano, Motorola V Phones, YP-T7J or YP-K3. Certainly, I find in no event can Samsung’s cursory attempt at proving obviousness be considered clear and convincing.

d. Secondary consideration of nonobviousness

The Parties’ Positions

Apple argues that the absence of a *prima facie* case of obviousness is reinforced by the strong evidence of objective indicia of non-obviousness including its commercial success and the copying ‘697 patent by Samsung. (CIB at 237.) Apple argues that the evidence shows that Samsung’s mechanical research and development team extensively analyze the apple iPhone 4,

including the specifications for the 3.5 mm receptacle. (*Id.*) Apple argues that Samsung also identified a sliding type receptacle is a design for local contacts the clear foreign substances from a receptacle. (*Id.*) Apple argues that this contact point design, which eliminated certain problems Samsung had experienced with false positive headset detection, is the subject of the '697 patent. (*Id.* at 237-238.) Apple argues that when Samsung experienced difficulties with its products erroneously dropping phone calls when the headset was removed slowly, Samsung's Development Group structurally analyzed the receptacle in the Apple iPhone and implemented the left-detection mechanism used in the iPhone. (*Id.* at 238.) Apple argues that Samsung's attempt to emulate the headphone jacks in Apple's devices is a clear indication that the '697 patent is not obvious. (*Id.*)

Samsung argues that Apple's failed to disclose any evidence supporting secondary considerations of non-obviousness for the '697 patent. (RIB at 215.) Samsung argues that Apple's expert did not even attempt to argue that the commercial success of its products can be attributed to either of these patents. (*Id.*) Samsung argues that as for evidence of alleged copying, Apple has not shown the requisite nexus between documents that merely reference the ear jacks of Apple's products and the actual invention claimed in the '697 patent. (*Id.*) Samsung argues that the documents introduced by Apple do not demonstrate copying, but rather a comparative analysis involving Apple products. (*Id.*) Samsung argues that such industry standard benchmarking is done by every technology company, including Apple. (*Id.*) Thus, Samsung argues that the documents cited by Apple are not evidence of copying and cannot therefore be objective evidence of non-obviousness. (*Id.*)

Analysis

I found hereinabove that Samsung has failed to set forth any sort of *prima facie* case of invalidity based on anticipation or obviousness. Thus, Apple's contentions regarding secondary considerations of non-obviousness are not of any particular relevance. Moreover, I have found hereinabove that neither the iPhone 4 nor iPad 2 (Apple's representative '697 Domestic Industry products) practice claim 12 of the '697 patent. Thus, there is no basis to attribute the success of Apple's products to the '697 patent.

3. 35 U.S.C. § 112

The Parties' Positions

Apple argues that Samsung does not make it clear or credible section 112 invalidity argument. (CRB at 104.) Apple argues that Samsung's expert misstates the law of indefiniteness and therefore applies facts to the wrong law, which cannot support a finding of invalidity. (*Id.*) Apple contends that Samsung's only argument is that there is no support in the specification for when a signal is a "high impedance path" or how to detect such a path. (*Id.*) Apple contends that Samsung uses this allegation to support invalidity due to lack of written description, lack of enablement, and indefiniteness. (*Id.*)

Apple argues the term is not indefinite because one of skill in the art would know what a high impedance path is and how such a path is detected. (*Id.*) Apple argues that Samsung's own expert testified that he understood that high impedance path to correspond to the state in which the plug is absent from the jack. (*Id.*) Apple argues that Samsung admits that the '697 patent discloses an example of a high impedance path. (*Id.*) Apple argues that the patent claims themselves disclose the creation of a high impedance path and are directed to the detection of a

plug based on impedance level. (*Id.*) Apple argues that Dr. Russ admits that the ‘697 patent discloses circuitry that can distinguish between a closed circuit and an open circuit. (*Id.* at 105.) Apple argues that the patent explains that whether a signal is low is determined by reference to a predetermined value. (*Id.*)

Samsung argues that although claim 12 of the ‘697 patent claims an electronic device for detecting the presence of a plug comprising “detection circuitry coupled to the detect contact and the first receptacle contact to detect that the signal path is a low or high impedance path,” no written description is provided in the specification for what signal path is a “high impedance path” for how to detect such a path. (RIB at 217.) Samsung argues that unlike a low impedance path which the specification explains, there is no discussion of what it means to constitute a high impedance path. (*Id.*) Samsung argues that the patent only gives one example of a high impedance path and that is an open circuit of infinite impedance. (*Id.*) Samsung argues that one would not know the limits or meaning of a plug signal path that was a high impedance path and thus, the ‘697 patent does not teach one of ordinary skill how to make and/or use the claimed electronic device. (*Id.*)

Samsung argues that term “high impedance path” is indefinite for the same reasons. (*Id.* at 218.) Samsung argues that the claims do not specify any boundaries or ranges for a low impedance path or a high impedance path. (*Id.*)

The Staff contends that Samsung’s expert Dr. Russ testified that he believed the ‘697 patent was invalid because it is indefinite for its lack of adequate written description or enablement. (SIB at 101 n. 23.) The Staff argues that this description misstates the law, because indefiniteness is different from written description and/or enablement. (*Id.*)

The Staff argues the one of ordinary skill in the art would have understood the terms “low impedance” and “high impedance” as they are commonly used in the industry. (SIB at 101.) Thus, the Staff argues that Samsung has not met its burden of establishing that the terms are indefinite. (*Id.*) The Staff argues that although Samsung alleges that the ‘697 patent is invalid for lack of written description and lack of enablement, Samsung only provided support for its lack of enablement argument and thus has not met its burden of showing that the ‘697 patent is invalid for lack of written description. (*Id.*) Staff argues with regard to enablement that the evidence has shown that one of ordinary skill in the art would not have had to engage in undue experimentation, if any, in making and using the claimed invention. (*Id.* at 101-102.)

Analysis

Samsung contends that claim 12 is invalid for failing to meet the written description and enablement requirements of 35 U.S.C. § 112 ¶ 1. Samsung also contends that the limitation “high impedance path” in claim 12 is indefinite under 35 U.S.C. § 112 ¶ 2. In support of both contentions, Samsung argues that there is nothing in the specification of the ‘697 patent explaining or describing when a signal path is a “high impedance path” or how to detect such a path. I find these arguments without merit.

The evidence shows that one of ordinary skill in the art would have known what is referred to by the term “high impedance path” in claim 12. (CX-2599C (Phinney RWS) at Q&A 90 (A metal plug inserted is “low impedance” when compared to an open circuit, which is “high impedance.”).) In fact, even Samsung’s expert Dr. Russ testified that he understood that high impedance referred to the state in which the plug is absent from the jack.

The low impedance path corresponds to the state in which the “signal path” of the previous claim element has been created (that is, when the plug is present) and the

high impedance path corresponds to the state in which the “signal path” has not been created (that is, the plug is absent).

(*See* RX-3450C (Russ DWS) at Q&A 98; *see also id.* at Q&A 349.) Thus, I do not find the term “high impedance path” indefinite.

With regard to written description and enablement, Samsung admits in its own brief that the ‘697 patent discloses an example of a high impedance path. (RIB at 217 (“In fact, the patent gives one example of a high impedance path, an open circuit of infinite impedance, (*See, e.g.,* RX-3450C, Q 348 at 138).”)) Moreover, the patent claims themselves describe the creation of a high impedance path and detection of a plug based on impedance level. (*See* JX-005 at 8:34-10:32). The evidence also shows that there is a large difference in impedance measured across an open circuit as opposed to a metal plug or closed circuit and that one of ordinary skill in the art would be able to implement detection circuitry to identify this difference using basic circuit technologies. (*See* CX-2599C (Phinney RWS) at Q&A 92; *see also* JX-005, Fig. 5 (illustrating, *inter alia*, use of a pull-up resistor in the control circuitry).) Even Samsung’s expert Dr. Russ testified that “[t]he ‘697 patent discloses circuitry that can distinguish between a closed circuitry (zero impedance) and an open circuitry (infinite impedance).” (RX-3450C (Russ DWS) at Q&A 349.) The patent further explains that whether the signal on the detect contact is “low” can be determined with reference to a predetermined signal value. (*See* JX-005 at 5:28-30, 6:55-56.) I find, for the reasons above, that contrary to Samsung’s argument, the evidence shows that the description of the invention of the ‘697 patent is sufficiently clear to convey to a person of ordinary skill in the art that the patentee invented what is claimed and to enable a person of ordinary skill in the art to make and use the invention.

Accordingly, I find Samsung has failed to prove by clear and convincing evidence that the asserted claims of the '697 patent are invalid under either 35 U.S.C. § 112 ¶ 1 or ¶ 2.

XI. Economic Prong of the Domestic Industry Requirement

Parties Positions

Apple argues that it has satisfied the economic prong of the domestic industry requirement based on its substantial investments in the exploitation of the asserted patents through its research and development activities in connection with products that practice the asserted patents. (CIB at 262.) Apple also argues that with regard to the '949 and '922 patents that it has made substantial investments in the exploitation of the asserted patents through research and development related to its iOS operating system that is used by its domestic industry products. (*Id.* at 267.) Apple argues that the bulk of its R&D investments related to the exploitation of the asserted patents occur in the United States. (*Id.* at 268.) Apple also argues that of its personnel engaged in research and development of hardware and software used in its domestic industry products reside in the United States. (*Id.*)

Samsung, in what I can only characterize as a misguided effort, fails in its attempt to argue that Apple has failed to satisfy the economic prong of the domestic industry requirement. (RIB at 264-274.) Samsung argues that Apple has created four overlapping groups of multiple products that are alleged to practice multiple patents. (*Id.* at 264.) Samsung argues that these product groups do not and cannot provide the patent-by-patent investment allocations required by the statute. (*Id.*) Samsung argues that under Apple's methodology I would have to conclude that all the Apple's domestic industry products practice all of the asserted patents and that all the asserted patents are valid. (*Id.* at 266.) Samsung argues that Apple has entered no evidence into

record that would permit me to determine Apple's Investments on a model-by-model basis for any of the asserted patents. (*Id.*)

Furthermore, Samsung argues that I cannot rely on Apple's product groups because Apple has included many discontinued products that cannot support its domestic industry in each product group. (*Id.*) Samsung argues that some domestic industry products such as the original iPhone, iPhone 3G, iPad, and first three generations of the iPod touch were discontinued well before the complaint was filed in this investigation. (*Id.*) Samsung argues that the Commission has held that the domestic industry requirement should be assessed as of the date the complaint is filed. (*Id.*) Samsung argues because

of the time of the complaint, these products cannot support a domestic industry. (*Id.* at 267.) Samsung argues Apple's decision to gather its investments in groups of products, including discontinued products, makes any assessment of investment at the time of the complaint illusory. (*Id.*)

Samsung argues that Apple has failed to establish a domestic industry under Section 337(a)(3)(C). (*Id.* at 272.) Samsung argues that Apple has failed to establish that its investments are substantial. (*Id.*) Samsung argues that Apple failed to allocate its investments under 337(a)(3)(C) to any patent or patented feature in this investigation. (*Id.* at 273.) Samsung argues that Apple has not even allocated most of its claimed investments to any particular product or limited its investments to the United States. (*Id.*) Samsung argues that Apple improperly allocates its investments to full product lines, rather than on a model-by-model or patent-by-patent basis. (*Id.*) Samsung argues that for the iPod product line in particular Apple's claimed investments include iPod models that haven't been alleged practice any of the asserted patents.

(*Id.*) Samsung argues that Apple's attempt to provide more specific investments broken down by versions of its iOS does not establish a domestic industry under section 337(a)(3)(C). (*Id.*) Samsung argues that Apple has provided no evidence of which domestic industry products operate with each version of its iOS making it impossible to allocate the investments to any specific products, let alone product models or any specific patented features. (*Id.*)

The Staff argues that Apple is set forth adequate facts to support a finding that it satisfies the economic prong of domestic industry requirement at least under section 337(a)(3)(C), as it has demonstrated substantial investment in the exploitation of the patents at issue through engineering and research and development related to articles are protected by the asserted patents. (SIB at 123.) The Staff argues that Apple's research and development expenditures directed to its domestic industry products represent almost of the total amount Apple expended for research and development in 2011. (*Id.*) The Staff also argues that Apple has shown that it maintains a substantial number of employees who perform research and development duties directed to its domestic industry products. (*Id.*) The Staff argues, that in its view, Apple's expenditures alone provide convincing evidence that its investments in his domestic industry products are substantial and satisfy the domestic industry requirement under section 337(a)(3)(C). (*Id.*) The Staff argues that Samsung's allegation that Apple improperly relies on the sum of its global research and development activities across various product lines does not rebut Apple's showing of substantial investments with respect to its domestic industry products. (*Id.* at 124.)

Analysis

Apple asserts that it has satisfied the economic prong of the domestic industry requirement under Section 337(a)(3)(C) based on its investments in engineering and research and development in support of products that practice the asserted patents. Samsung takes issue with a variety of aspects of the methodology Apple used to show that it satisfied the economic prong of the domestic industry requirement. So that the context of my analysis of the economic prong is clear, I will address the issues raised by Samsung before I undertake my analysis of Apple's domestic industry arguments.

Samsung argues that Apple failed to present evidence of its investments on a model-by-model basis for any of the asserted patents. However, contrary to Samsung's argument, the evidence of record, and in particular Exhibit CX-19C, details Apple's U.S. R&D investments, broken down by Domestic Industry Product on a patent-by-patent basis. (*See* CX-19C.) The evidence of record also details Apple's U.S. R&D investments in iOS 5.0 and iOS 3.0, which have been shown to practice the '949 and '922 patents. (*See* CX-20C.) Contrary to Samsung's argument that Apple provided no evidence of which Domestic Industry Products run which version of iOS, Dr. Balakrishnan testified that all relevant iPhone, iPad, and iPod touch products use either iOS 5.0 or 3.0. (*See* CX-2428C (Balakrishnan DWS) at Q&A 35-36.)

Samsung also challenges the reliability of the evidence presented by Apple arguing that Apple included investments allocated to many discontinued products, including some that were discontinued well before the Complaint was filed in this investigation. The unrebutted evidence shows, however, that Apple's "research and development spending is focused on investing in new hardware and software products, *and in further developing its existing products, including*

iPhone, iPad, Mac and iPod hardware.” (CX-2 at 26 (emphasis added.) Moreover, the evidence shows that Exhibit CX-19C was prepared by Apple’s R&D Finance team using data from Apple’s SAP reporting system, its accounting system of record. (See CX-2432C (Buckley DWS) at Q&A 70.) The evidence shows the financial data is associated with each of Apple’s iPhone, iPad, and iPod touch products. (*Id.* at Q&A 64, 70.) Thus, I find no basis to dispute the authenticity or accuracy of the data in Exhibit CX-19C. Samsung’s expert Dr. Vander Veen insinuates the data was created for litigation purposes and is unreliable. (RX-3638C (Vander Veen RWS) at Q&A 46-48.) I find his assertion to be unfounded speculation that is not supported by the record evidence.

Moreover, I find nothing in Commission precedent that would prevent Apple from relying on its investments in products that are discontinued to support a showing that its investments in the exploitation of the asserted patents through R&D are substantial and constitute a domestic industry, where, as here, the evidence shows that Apple continues to exploit the asserted patents practiced by the discontinued products. For example, in *Certain Battery-Powered Ride-On Toy Vehicles & Components Thereof*, Inv. No. 337-TA-314, Order No.6 (Dec. 5, 1990) (initial determination unreviewed in relevant part), the ALJ concluded that a domestic industry existed even though the complainant no longer manufactured the product at issue. The ALJ found that the complainant was still selling replacement parts for the products and that combining the past domestic activities with the current activity of providing replacement parts was sufficient to constitute a domestic industry, stating:

Kransco still has an inventory of the dual control power pedal unit that is the subject of the patent, and some of these units are still sold as replacement parts to stores or individual purchasers when the warranties on their toys have expired. The dual control unit is a safety feature on the toy. Furnishing replacement parts

would be significant to the complainant even if it did not bring in substantial income. Making replacement parts available generates good will for the company. The toys are expensive, and parents who spend this much for a toy would expect a U.S. company to make replacement parts available for repairs. Section 337 should protect small industries as well as large ones. The current sales of the unit may be few, and the costs of replacing these parts free may not be large, but they meet the criteria of the statute.

As long as Kransco is still replacing any of these units, all of the prior costs relating to the development and exploitation of the patent should be considered along with the current expenditures relating to replacement parts when determining whether there is a domestic industry.

Id. Likewise, in *In Certain Video Graphics Display Controllers & Products Containing Same*, Inv. No.337-TA-412, Initial Determination (unreviewed) (Apr. 30, 1999), the ALJ found that a domestic industry existed even though the complainant was not currently manufacturing the domestic industry product. The ALJ concluded that a domestic industry existed based on the complainant's past activities in conjunction with its current activities of, *inter alia*, selling existing inventory of the domestic industry product, licensing the asserted patent and conducting R&D related to the domestic industry product:

That Cirrus is not currently manufacturing the 5465 product is not dispositive, as the evidence shows that Cirrus has invested substantial capital in developing and manufacturing the 5465 product, and uncontradicted testimony establishes that Cirrus is currently offering for sale and intends to continue offering for sale an existing inventory of the product. Additionally, the evidence is undisputed that, in exchange for a significant monetary payment, Cirrus has licensed the '525 Patent to at least one third party. Credible evidence of record also shows that Cirrus is paying ISD Corporation for research and development activities, including continuation of software development and maintenance for the 5465 product. The sum total of Cirrus' past as well as present investment associated with the 5465 product, coupled with Cirrus' activity related to licensing the '525 Patent support a finding of domestic industry at any point from the time of the filing of the complaint through the date of the hearing.

Id. In both of these cases there is a common theme: while the primary domestic industry activities were no longer taking place, a domestic industry was found to exist

based on a combination of prior activities and some type of current activity related to the domestic industry. In the case before me, the evidence shows that at the time of the filing of the Complaint in this investigation, Apple's investments in research and development were directed to products that that Apple still produced and sold, which practiced the asserted D'757, D'678, '949, '922, and '501 patents. Because Apple had an active domestic industry in R&D directed to products that practice the asserted D'757, D'678, '949, '922, and '501 patents at the time of the filing of the Complaint, I take no issue with Apple relying on its investments in its discontinued products that practice the D'757, D'678, '949, '922, or '501 patents to prove that its investments were substantial and that it has a domestic industry in those patents.²⁸

Samsung also argues that Apple's investment data is insufficient to support a finding that Apple satisfies the economic prong of the domestic industry requirement, because Apple failed to tie its R&D investments to the specific claimed features of the asserted patents. However, contrary to Samsung's argument, the Commission has rejected requiring complainants to "tie" investments in engineering, R&D, or licensing to "specific product features" implicated by the asserted patents. *See Certain Elec. Devices, Including Handheld Wireless Commc'n Devices*, Inv. Nos. 337-TA-673, 337-TA-667, Order No. 49C at 10 (Oct. 15, 2009) ("The relevant inquiry is whether [complainant] has made a substantial investment with respect to the articles protected by the patent, and not whether the investment relates to the specific features of the articles that

²⁸ Even if Apple's investments in its discontinued products were discounted, the evidence shows, as discussed in detail, *infra*, that Apple would still have a robust domestic industry in R&D that exploits the asserted D'757, D'678, '949, '922, and '501 patents.

contain the patented technology.”). (See also Notice of Comm’n Op. Not to Review an ID Granting Complainant’s Motion That It Has Satisfied the Economic Prong of the Domestic Industry Requirement (November 9, 2009).) It is well settled that under section 337 (a)(3)(C) a complainant can prove that its investments exploit an asserted patent by showing that its investments in engineering, R&D, or licensing, relate to a product that practices the asserted patent. *Multimedia Display & Navigation Devices*, Inv. No. 337-TA-694, Comm’n Op. at 10 (“[I]f a licensee’s product is an ‘article protected by’ the patent, then the license is by definition connected to that patent.”); *Certain Liquid Crystal Display Modules, Prods. Containing Same, & Methods for Using the Same*, Inv. No. 337-TA-634, Order No. 8 at 10 (Nov. 7, 2008) (“The Commission has found that domestic research and development expenditures directed to products that incorporate the patented technologies at issue are sufficient to satisfy the economic prong of the domestic industry requirement under 337(a)(3)(C).”). The logic behind this approach is undeniable in that if a product practices (*i.e.*, exploits) the patented technology then naturally any investments in said product also promote the exploitation of the patented technology. In fact, many patented technologies might never see manufacture or commercialization if it were not for investments in the products that include the patented technology.

Having addressed Samsung’s arguments, I will now turn to an analysis of the evidence presented by Apple in support of its contention that it satisfies the economic prong of the domestic industry requirement. As I stated above, Apple contends that it satisfies the economic prong of the domestic industry requirement based on its substantial investments in the exploitation of the asserted patents through its research and development activities in connection

with products that practice the asserted patents. Thus, Apple's allegation that it satisfies the economic prong of the domestic industry requirement is premised on its argument that its R&D activities are directed to products that practice the asserted patents.

I have already analyzed Apple's technical prong arguments for each of the asserted patents. I have found that Apple's Domestic Industry Products practice at least one claim of the asserted D'757, D'678, '949, '922, and '501 patents and thus satisfy the technical prong requirement with regard to those asserted patents. With regard the asserted '697 patent, however, I have found that Apple's Domestic Industry Products do not practice the claims of the '697 patent and thus found that Apple failed to satisfy the technical prong requirement with regard to that patent. Because I have found Apple does not practice the '697 patent, Apple's argument that it meets the economic prong of the domestic industry analysis must fail as Apple relies entirely on the practice of the '697 patent by its Domestic Industry Products to provide a nexus between its investments to the exploitation of the '697 patent.

With regard to the remaining asserted patents (*i.e.*, the D'757, D'678, '949, '922, and '501 patents), as discussed in more detail below, I find the evidence overwhelmingly establishes that Apple has made substantial investments in R&D developing both hardware and software for its Domestic Industry Products that practice the D'757, D'678, '949, '922, and '501 patents. I thus find Apple satisfies the economic prong of the domestic industry requirement.

With regard to the remaining asserted patents (*i.e.*, the D'757, D'678, '949, '922, and '501 patents), the evidence, as discussed in more detail below, is overwhelming that Apple has made substantial investments in R&D developing both hardware and software for its Domestic Industry Products.

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Apple filed its Complaint in this investigation on July 5, 2011. “As a general matter, the only activities that are relevant to the determination of whether a domestic industry exists or is in the process of being established are those that occurred before the complaint was filed.” *See Certain Video Game Systems*, 337-TA-743, Comm’n Op. at 5 (January 20, 2012).

The evidence shows that from the beginning of fiscal year 2006 through the last fiscal quarter prior to the complaint being filed in this investigation, Apple spent:

1. in the United States in support of its Domestic Industry products that practice the D’757 patent (*i.e.*, the iPhone, iPhone 3G, and iPhone 3GS);
2. in the United States in support of its Domestic Industry products that practice the D’678 patent (*i.e.*, the iPhone, iPhone 3G, and iPhone 3GS, iPhone 4, and iPhone 4S);
3. in the United States in support of its Domestic Industry products that practice the ‘949 patent (*i.e.*, iPhone, iPhone 3G, and iPhone 3GS, iPhone 4, iPhone 4S, iPad, iPad 2, iPod touch (3rd gen.), iPod touch (4th gen.));
4. in the United States in support of its Domestic Industry products that practice the ‘922 patent (*i.e.*, iPhone, iPhone 3G, and iPhone 3GS, iPhone 4, iPhone 4S, iPad, iPad 2, iPod touch (3rd gen.), iPod touch (4th gen.)); and
5. the United States in support of its Domestic Industry products that practice the ‘501 patent (*i.e.*, iPhone, iPhone 3G, and iPhone 3GS, iPhone 4, iPhone 4S, iPad, iPad 2, iPod touch (1st gen.), iPod touch (2nd gen.), iPod touch (3rd gen.), iPod touch (4th gen.)).

(CX-19C; CX-2432C (Buckley DWS) at Q&A 72.)

The evidence shows that in fiscal year 2011, alone, Apple spent approximately on R&D related to articles protected by the asserted patents. (CX-2434C (Prowse DWS) at Q&A 75.) Of that , the evidence shows that approximately was spent in Q1-Q3 FY2011 on R&D directed to Apple’s iPhone product line, was spent in Q1-Q3 FY2011 on R&D directed to Apple’s iPad product line, and was spent in Q1-Q3

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FY2011 on R&D directed to Apple's iPod product line. (*Id.*) The evidence shows that Apple's R&D expenditures directed to its iPhone, iPad, and iPod product lines account for approximately of Apple's total R&D investments for fiscal year 2011. (*Id.*) There is no question such investments are substantial. Moreover, the evidence shows that of the R&D work done by Apple in 2011 was in the United States, which is also substantial. (*See id.* at Q&A 76, 79; CX-19C; *see also Certain Printing and Imaging Devices and Components Thereof*, Inv. No. 337-TA-690, Comm'n Op. at 27 ("The Commission has also assessed the relative domestic contribution to the protected article by comparing complainant's product-related domestic activities to its product-related foreign activities."))

Apple's domestic industry in R&D not only includes Apple's investments in hardware development, but also software development. The evidence shows that between Q3 FY2010 and Q3 FY2011, Apple spent more than in the United States on R&D of iOS 5.0. (CX-20C; CX-2432C (Buckely DWS) at Q&A 67.) In addition, between Q4 FY2008 and Q4 FY2009, Apple spent more than in the United States on R&D of iOS 3.0. (*Id.*) The evidence shows that Apple's iPhone 3GS, iPhone 4, iPhone 4S, iPad, iPad 2, iPod touch (3rd Gen.), and iPod touch (4th Gen.) all run iOS 5.0. (CX-2428C (Balakrishnan DWS) at Q&A 35-36.) Likewise, the evidence shows that Apple's iPhone and iPhone 3G run iOS 3.0. (*Id.*)

I have found hereinabove that one or more of Apple's products running iOS 3.0 or iOS 5.0 practice each of the asserted D'757, D'678, '949, '922, and '501 patents. Thus, through Apple's products, Apple's investments developing its iOS exploit the asserted patents. Because the operating system is such a critical component of Apple's Domestic Industry Products, Apple's investments in R&D developing iOS 3.0 and iOS 5.0 are undeniably substantial.

Moreover, the evidence shows that _____ of the R&D work done developing iOS 3.0 and iOS 5.0 was done in the United States, which is also substantial. (CX-2434C (Prowse DWS) at Q&A 76, 79.)

Accordingly, for the reasons discussed above, I find Apple has proven by a preponderance of the evidence that a Domestic Industry exists under section 337(a)(3)(C) for the asserted D'757, D'678, '949, '922, and '501 patents.²⁹

²⁹ To the extent it is found the Apple's Domestic Industry Products practice the '697 patent, I would find for the same reasons discussed, *supra*, with regard to the asserted D'757, D'678, '949, '922, and '501 patents, that Apple satisfies the economic prong of the domestic industry requirement with regard to the '697 patent.

XII. Conclusions of Law

1. The Commission has personal jurisdiction over the parties, and subject-matter jurisdiction over the accused products.
2. The importation or sale requirement of Section 337 is satisfied.
3. The D'757 Accused Products do not infringe the claim of U.S. Patent No. D558,757.
4. The claim of the D'757 patent is not invalid as obvious under 35 U.S.C. § 103.
5. The D'757 Domestic Industry Products practice the D'757 patent.
6. The domestic industry requirement is satisfied with respect to the D'757 patent.
7. The D'678 Accused Products (except the Galaxy S II (SGH-T989)) infringe the claim of the D'678 patent.
8. The Galaxy S II (SGH-T989) does not infringe the claim of the D'678 patent.
9. The claim of the D'678 patent is not invalid as obvious under 35 U.S.C. § 103.
10. The D'678 patent is not invalid.
11. The D'678 Domestic Industry Products practice the D'678 patent.
12. The domestic industry requirement is satisfied with respect to the D'678 patent.
13. The '949 Accused Products infringe claims 1, 4-6, and 10-20 of the '949 patent.
14. Samsung induces other to infringe claims 1, 4-6, and 10-20 of the '949 patent.
15. Samsung does not contribute to the infringement of claims 1, 4-6, and 10-20 of the '949 patent.
16. The '949 Design Around Products do not infringe claims 1, 4-6, and 10-20 of the '949 patent.
17. Claims 1, 4-6, and 10-20 of the '949 patent are not invalid as anticipated under 35 U.S.C. § 102.
18. Claims 1, 4-6, and 10-20 of the '949 patent are not invalid as obvious under 35 U.S.C. § 103.

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19. The '949 patent satisfies the written description requirement of 35 U.S.C. § 112.
20. The '949 patent satisfies the enablement requirement of 35 U.S.C. § 112.
21. The '949 Domestic Industry Products practice the '949 patent.
22. The domestic industry requirement is satisfied with respect to the '949 patent.
23. The '922 Accused Products infringe claims 29, 30, 33-35 of the '922 patent.
24. The '922 Accused Products do not infringe claims 30 and 31 of the '922 patent.
25. Samsung induces others to infringe claims 29-35 of the '922 patent.
26. Samsung does not contribute to the infringement of claims 29-35 of the '922 patent.
27. The '922 Design Around Products do not infringe claims 29-35 of the '922 patent.
28. Claims 29-35 of the '922 patent are not invalid as anticipated under 35 U.S.C. § 102.
29. Claims 29-35 of the '922 patent are not invalid as obvious under 35 U.S.C. § 103.
30. The '922 Domestic Industry Products practice the '922 patent.
31. The domestic industry requirement is satisfied with respect to the '922 patent.
32. The Continuum SCH-I400 infringes claims 1-4 and 8 of the '501 patent.
33. The Transform SPH-M920; Acclaim SCH-R880; Epic 4G SPH-D700; Indulge SCH-R910; Indulge SCH-R915; and Intercept SPH-M910 infringe claims 1 and 2 of the '501 patent.
34. The Transform SPH-M920; Acclaim SCH-R880; Epic 4G SPH-D700; Indulge SCH-R910; Indulge SCH-R915; and Intercept SPH-M910 do not literally infringe claim 4 of the '501 patent
35. The Transform SPH-M920; Acclaim SCH-R880; Epic 4G SPH-D700; Indulge SCH-R910; Indulge SCH-R915; and Intercept SPH-M910 do not infringe claim 4 of the '501 patent under the doctrine of equivalents.

36. The Galaxy Tab 7.0 SCH-1800; the Caliber SCH-R850; the Captivate SGH-I897; the Captivate Glide SCH-I927; the Droid Charge SCH-I510; the Exhibit 4G SGH-T759; the Exhibit II 4G SGH-T679; the Fascinate SCH-I500; the Focus SGH-I917; the Galaxy Ace (S5830L); the Galaxy Player 5.0 YP-G70C/NAW; the Galaxy Player 4.0 YP-G1CWY; the Galaxy S 4G SGH-T959V; the Galaxy S II SGH-1777; the Galaxy Tab 7.0 SGH-T849; the Galaxy Tab 7.0 SGH-T869; the Galaxy Tab 7.0 SGH-I987; the Galaxy Tab 7.0 SPH-P100; the Galaxy Tab 7.0 SGT-P1010/W16; the Galaxy Tab 7.0 Plus GT-P6210; the Galaxy Tab 8.9 SGH-I957; the Galaxy Tab 8.9 GT-P7310/M16; the Galaxy Tab 10.1 SGH-T859; the Galaxy Tab 10.1 SCH-I905; the Galaxy Tab 10.1 GT-P7510/M16; the Gravity SGH-T589; the Infuse 4G SGH-I997; the Mesmerize SCH-I500; the Nexus S GTI9020; the Nexus S GT-I9020A; the Nexus S GT-I9020T; the Omnia II SCH-I920; the Repp SCH-R680; the Showcase SCH-I500; the Sidekick SGH-T839; the Stratosphere SCH-I405; the Suede SCH-R710; the Transfix SCH-R730; the Transform Ultra SPH-M930; and the Vibrant SGH-T959 do not literally infringe claim 1 of the '501 patent.
37. The Galaxy Tab 7.0 SCH-1800; the Caliber SCH-R850; the Captivate SGH-I897; the Captivate Glide SCH-I927; the Droid Charge SCH-I510; the Exhibit 4G SGH-T759; the Exhibit II 4G SGH-T679; the Fascinate SCH-I500; the Focus SGH-I917; the Galaxy Ace (S5830L); the Galaxy Player 5.0 YP-G70C/NAW; the Galaxy Player 4.0 YP-G1CWY; the Galaxy S 4G SGH-T959V; the Galaxy S II SGH-1777; the Galaxy Tab 7.0 SGH-T849; the Galaxy Tab 7.0 SGH-T869; the Galaxy Tab 7.0 SGH-I987; the Galaxy Tab 7.0 SPH-P100; the Galaxy Tab 7.0 SGT-P1010/W16; the Galaxy Tab 7.0 Plus GT-P6210; the Galaxy Tab 8.9 SGH-I957; the Galaxy Tab 8.9 GT-P7310/M16; the Galaxy Tab 10.1 SGH-T859; the Galaxy Tab 10.1 SCH-I905; the Galaxy Tab 10.1 GT-P7510/M16; the Gravity SGH-T589; the Infuse 4G SGH-I997; the Mesmerize SCH-I500; the Nexus S GTI9020; the Nexus S GT-I9020A; the Nexus S GT-I9020T; the Omnia II SCH-I920; the Repp SCH-R680; the Showcase SCH-I500; the Sidekick SGH-T839; the Stratosphere SCH-I405; the Suede SCH-R710; the Transfix SCH-R730; the Transform Ultra SPH-M930; and the Vibrant SGH-T959 do not infringe claim 1 of the '501 patent under the doctrine of equivalents.
38. The Galaxy Tab 7.0 SCH-1800; the Caliber SCH-R850; the Captivate SGH-I897; the Captivate Glide SCH-I927; the Droid Charge SCH-I510; the Exhibit 4G SGH-T759; the Exhibit II 4G SGH-T679; the Fascinate SCH-I500; the Focus SGH-I917; the Galaxy Ace (S5830L); the Galaxy Player 5.0 YP-G70C/NAW; the Galaxy Player 4.0 YP-G1CWY; the Galaxy S 4G SGH-T959V; the Galaxy S II SGH-1777; the Galaxy Tab 7.0 SGH-T849; the Galaxy Tab 7.0 SGH-T869; the Galaxy Tab 7.0 SGH-I987; the Galaxy Tab 7.0 SPH-P100; the Galaxy Tab 7.0 SGT-P1010/W16; the Galaxy Tab 7.0 Plus GT-P6210; the Galaxy Tab 8.9 SGH-I957; the Galaxy Tab 8.9 GT-P7310/M16; the Galaxy Tab 10.1 SGH-T859; the Galaxy Tab 10.1 SCH-I905; the Galaxy Tab 10.1 GT-P7510/M16; the Gravity

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SGH-T589; the Infuse 4G SGH-I997; the Mesmerize SCH-I500; the Nexus S GTI9020; the Nexus S GT-I9020A; the Nexus S GT-I9020T; the Omnia II SCH-I920; the Repp SCH-R680; the Showcase SCH-I500; the Sidekick SGH-T839; the Stratosphere SCH-I405; the Suede SCH-R710; the Transfix SCH-R730; the Transform Ultra SPH-M930; and the Vibrant SGH-T959 do not infringe claims 2-4, and 8 of the '501 patent.

39. The Galaxy S II SGH-T989; the Epic 4G Touch SPH-D710; the Focus Flash SGH-I677; the Focus S SGH-I937; the Galaxy Nexus SCH-I515; the Galaxy S II SGH-T989; the Galaxy S II Skyrocket SGH-I727; the Illusion SCH-I110; and the Note GT-N7000 do not infringe claims 1-4 and 8 of the '501 patent.
40. The '501 Design Around Product does not infringe claims 1-4 and 8 of the '501 patent.
41. Claims 1-4 and 8 of the '501 patent are not invalid as anticipated under 35 U.S.C. § 102.
42. Claims 1-4 and 8 of the '501 patent are not invalid as obvious under 35 U.S.C. § 103.
43. The '501 Domestic Industry Products practice the '501 patent.
44. The domestic industry requirement is satisfied with respect to the '501 patent.
45. The '697 Accused Products do not infringe claims 13 and 14 of the '697 patent.
46. The '697 Design Around Product does not infringe claims 13 and 14 of the '697 patent.
47. Claims 13 and 14 of the '697 patent are not invalid as anticipated under 35 U.S.C. § 102.
48. Claims 13 and 14 of the '697 patent are not invalid as obvious under 35 U.S.C. § 103.
49. The '697 patent satisfies the written description requirement of 35 U.S.C. § 112.
50. The '697 patent satisfies the enablement requirement of 35 U.S.C. § 112.
51. The '697 patent is not indefinite under 35 U.S.C. § 112.
52. The '697 Domestic Industry Products do not practice the '697 patent.

PUBLIC VERSION

- 53. The domestic industry requirement is not satisfied with respect to the '501 patent.
- 54. There has been no violation of Section 337 with respect to the D'757 patent.
- 55. There has been a violation of Section 337 with respect to the D'678 patent.
- 56. There has been a violation of Section 337 with respect to the '949 patent.
- 57. There has been a violation of Section 337 with respect to the '922 patent.
- 58. There has been a violation of Section 337 with respect to the '501 patent.
- 59. There has been no violation of Section 337 with respect to the '697 patent.

XIII. Initial Determination and Order³⁰

Based on the foregoing, it is the Initial Determination of this Administrative Law Judge that a violation of section 337 of the Tariff Act of 1930, as amended, 19 U.S.C. § 1337, has occurred in the importation into the United States, the sale for importation, or the sale within the United States after importation of certain electronic digital media devices and components thereof, in connection with the claim of U.S. Patent No. D618,678; claims 1, 4-6, and 10-20 of U.S. Patent No. 7,479,949; claims 29, 30, and 33-35 of U.S. Patent No. RE41,922; and claims 1-4 and 8 of U.S. Patent No. 7,912,501.

It is also the Initial Determination of this Administrative Law Judge that a violation of section 337 of the Tariff Act of 1930, as amended, 19 U.S.C. § 1337, has not occurred in the importation into the United States, the sale for importation, or the sale within the United States after importation of certain electronic digital media devices and components thereof, in connection with the claim of U.S. Patent No. D558,757; and claims 13 and 14 of U.S. Patent No. 7,789,697.

The undersigned hereby CERTIFIES to the Commission this Initial Determination, together with the record of the hearing in this investigation consisting of the following: the transcripts of the evidentiary and claim construction hearings, with appropriate corrections as

³⁰ The failure to discuss any matter raised by the parties or any portion of the record herein does not indicate that said matter was not considered. Rather, any such matter(s) or portion(s) of the record has/have been determined to be irrelevant, immaterial or meritless. Arguments made on brief which were otherwise unsupported by record evidence or legal precedent have been accorded no weight.

PUBLIC VERSION

may hereafter be ordered; and the exhibits accepted into evidence in this investigation as listed in Appendix A hereto.³¹

The Secretary shall serve a public version of this Initial Determination upon all parties of record and the confidential version upon counsel who are signatories to the Protective Order (Order No. 1) issued in this Investigation.

Pursuant to 19 C.F.R. § 210.42(h), this Initial Determination shall become the determination of the Commission unless a party files a petition for review pursuant to 19 C.F.R. § 210.43(a) or the Commission, pursuant to 19 C.F.R. § 210.44, orders on its own motion a review of the Initial Determination or certain issues therein.

Within seven days of the date of this document, each party shall submit to the Office of the Administrative Law Judges a statement as to whether or not it seeks to have any portion of this document deleted from the public version. The parties' submissions must be made by hard copy by the aforementioned date and must include a copy of this document with red brackets indicating any portion asserted to contain confidential business information to be deleted from the public version, along with a list indicating each page on which such a bracket is to be found. The parties' submissions concerning the public version of this document need not be filed with the Commission.

SO ORDERED.



Thomas B. Pender
Administrative Law Judge

³¹ The pleadings of the parties filed with the Secretary need not be certified as they are already in the Commission's possession in accordance with Commission rules.

**IN THE MATTER OF CERTAIN ELECTRONIC DIGITAL MEDIA 337-TA-796
DEVICES AND COMPONENTS THEREOF**

CERTIFICATE OF SERVICE

I, Lisa R. Barton, hereby certify that the attached **ORDER NO: PUBLIC INITIAL DETERMINATION** has been served upon **Reginald D. Lucas, Esq.**, Commission Investigative Attorney, and the following parties via first class mail and air mail where necessary on December 28, **2012**.

Lisa R. Barton, Acting Secretary
U.S. International Trade Commission
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**IN THE MATTER OF CERTAIN ELECTRONIC DIGITAL MEDIA 337-TA-796
DEVICES AND COMPONENTS THEREOF**

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