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memory devices”), never stop “receiving” or “acquiring” the data signal in violation of the “do not receive” claim limitation. (See RX-3869C at Q/A 52.) To be exact, Dr. Subramanian testified:

Q. Please summarize how the use of ODT functionality in the JEDEC standards confirms your opinion that the alleged “second memory devices” will acquire the same data sent to the alleged “first memory devices”?

A. The ODT circuit causes the “second” memory devices to “receive” (*i.e.*, acquire) the data as construed by ALJ Pender even if the chip-select signal causes that memory device to ignore the received data and not write it to memory. For example, “receiving” as a result of ODT functionality “is something the memory devices do rather than a result of some other external act.” Order No. 17 (RX-2437) at .00032. Indeed, those data signals are terminated on the die of the memory device (hence the name On Die Termination). Dr. Levitt agrees with me in Q/A 420 of CX-2003C that “[t]his is to ensure that the data signal does not reflect back onto the shared data line, which would potentially harm the integrity of the signal intended for the selected memory devices.” In other words, if the ODT circuits were disabled (*i.e.*, a Hi-Z state), the data signals would “bounce off” from the ODT circuits (to use ALJ Pender’s analogy) and could cause reflections on the data bus. *Id.* at .00042 (“[A] better analogy might be a dart (data) thrown at a dart board (memory device) which will either stick (memory device configured to receive) or bounce off and fall dead (memory device configured to not receive).”). With the proper ODT control, the data is “acquired” as the signal carrying that data is terminated on the die of the alleged “second” memory device. *Id.* (in ALJ Pender’s analogy, the dart sticks to the board). That is, the ODT signal from the system memory controller that is sent to the ODT circuitry (as well as the clock enable (CKE) signal that is sent to the CKE circuitry) configures the alleged “second” memory device to acquire the data in the Accused SK hynix LRDIMM Products.

(RX-3869C at Q/A 56.) Dr. Subramanian cites details of ODT functionality by reference to a technical report “written by a student of my colleagues Elad Alon and Vladimir Stojanovich” which states:

At the high frequencies of operation of DDR4, the transmission lines in the communication channel cannot be treated as lumped components. Their electrical properties and length have an impact on the signal. One of the major concerns is the signal reflection due to impedance mismatch at the source and load (Feng et al. 2013). To

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minimize these reflections and their adverse impact on the signal quality, appropriate termination impedances are required. ODT entails that these impedances be present on the die itself, and not connected externally to the chip. The exact value of these impedances depends on the operating conditions such as supply voltage and temperature and therefore, need to be dynamically varied. To achieve this, ZQ calibration is performed.

(*Id.* at Q/A 59 (citing RX-4052) (emphases removed).) Dr. Subramanian describes this function as “acquiring” the data signal in many places in his testimony. (*See, e.g.*, RX-3869C at Q/A 52, 55, 56, 57, 58, 60, 62, 64, 70, 72, 81, 84, 105, 108, 109, 111, 113).)

The undersigned is not persuaded the termination function provided by ODT constitutes “receiving” or “acquiring” a data signal under the '907 patent. Dr. Subramanian is conclusory on this point, offering no explanation as to how ODT’s termination is a form of reception or acquisition or how it resembles, for example, the first stage of a write operation. (*See* RX-3869C at Q/A 81 (“A Skilled Artisan, however, would have understood that one of the memory operations which is relevant to ‘receiving’ data is receiving the data signal by the On-Die Termination (in short, ‘ODT’) circuit.”); *see also* RX-3869C at Q/A 52, 55, 56, 57, 58, 60, 62, 64, 70, 72, 84, 105, 108, 109, 111, 113); Subramanian, Tr. at 709:6-717:22, 741:12-742:4, 744:24-749:7.) To the contrary, the termination of the data signal by ODT appears equivalent in relevant effect to [REDACTED]

[REDACTED] In both cases, the data signal is terminated and its substance (*i.e.*, sequence of 1s and 0s) is lost and/or ignored. The signal is not “received” or “acquired.” it is extinguished.

Additionally, [REDACTED] ODT does nothing with and is not altered in any way by the substance of the data signal. Dr. Subramanian testified (adopting the content of RX-4052)) that ODT’s operating parameters are changed but in ways unrelated to the data signal—“[ODT’s impedance values] depend[] on the operating conditions such as supply voltage and temperature and therefore, need to be dynamically varied.”

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(RX-4052 at -665825; *see* CX-0889 at -57021-3.) It is therefore difficult, again, to see how the data signal is "received" or "acquired" by ODT as it is, for example, in the first stage of a write operation. Indeed, if one takes up Respondents' suggestion to consider ODT's action in terms of "data" instead of "data signal" (*see* RRB at 7 ("the patent and the parties have used the terms 'data' and 'data signals' interchangeably, meaning the RCVRs and ODT acquire the 'data' at the same time they acquire the 'data signals.'")), it becomes even more difficult to see how the ODT "receives" this information as opposed to ignoring or destroying it.

Accordingly, the undersigned does not find that non-selected memory devices nonetheless "receive" data signals in the Accused Products so as to prevent infringement of this limitation. It is important to note that while Netlist promotes a theory of "receive / do not receive" involving latching, that theory is based on a now-rejected distinction between "data" and "data signal" as used in the '907 patent claims. Further, Dr. Levitt testified that "receive" can occur without latching (Levitt, Tr. at 395:19-22) and as explained above, the undersigned agrees.

Respondents and the Staff appear to offer an additional reason why the limitation is not met. Respondents claim Netlist has provided an insufficient showing of "how the 'first' memory devices receive the 'data signal' . . . *in response* to the first module control signals." (RIB at 23 (emphasis added); RRB at 14-15; *see* SIB at 41-42.) This argument rests upon two incorrect presumptions, however. The first is that second memory devices never "do not receive" data signals (*see* RRB at 14-15 ("[t]hat is incorrect, because all memory devices 'receive' and 'acquire' the data")); and the second is that Netlist's sole infringement theory is that "receive" only means "latching" (*see id.* at 15 ("Netlist's only theory of infringement there is no evidence that either the JEDEC standard or the accused products require data to be 'latched' (or not) 'in response to' the chip select signal.")). Neither of these are correct. As discussed above, the

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undersigned does not agree that second memory devices are always “receiving” data signals; and Netlist’s initial post-hearing brief shows an infringement theory presented in a form of alternatives, where “receive” or “acquire” is accomplished either by latching or [REDACTED] before sending to the latch. (*See, e.g.*, CIB at 42-43.)

Returning to the record, there appears to be no dispute that [REDACTED]

[REDACTED] (CX-2003C at Q/A 385 (citing CX-0889 at -56906), 387, 388, 401 (citing CX-2053); *see* RX-3869C at Q/A 64, 68, 70 (citing RX-3904C).) To the extent there remains a dispute, the undersigned finds this act meets the limitation “in response to the first module control signals, the first memory devices output or receive . . . while the second memory devices do not output or receive”

Accordingly, the undersigned finds the Accused Products do include this feature of independent claim 1.

(3) “wherein the each respective buffer circuit is disposed on the PCB in a position corresponding to the respective one or more of the first memory devices and the respective one or more of the second memory devices”

For this limitation, Netlist contends “the evidence shows that each of the nine data buffers is disposed on the PCB in a position ‘corresponding to the respective one or more of the first memory devices and the respective one or more of the second memory devices’” (CIB at 50 (citing, *inter alia*, CX-2003C at Q/A 480).) Netlist views Figures 3A, 3C, and 3D of the ’907 patent as showing the meaning of this limitation and matching the layout of the Accused Products where “[e]ach data buffer . . . is specifically located close to, or in a corresponding position respective to, the SDRAM components to which it is connected.” (*See id.* at 50-51 (citing CX-2003C at Q/A 480-482; CX-0377 at *14; CX-2602 at *4; CX-0059 at *3; JX-0020C at 98:2-10,

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156:13-157:5, 158:18-159:20, 161:22-162:10.) Netlist argues there is no merit to Respondents' contention that "corresponding to" must mean "aligned with" or without any offset. (*See id.* at 51-53.) The Staff agrees with Netlist and argues "the intrinsic evidence supports interpreting the limitation as requiring that each buffer circuit be generally located either aligned or offset with its respective memory devices." (SIB at 61.)

In opposition, Respondents argue:

The data buffers (DBs) in the Accused SK hynix LRDIMM Products (*i.e.*, the accused "buffer circuits") are not positioned such that each buffer "corresponds with" the position of the memory devices to which it is coupled. *See* RX-3869C at Q/A 140-42. Instead, some of the accused DBs correspond to the position of memory devices to which the DB is not coupled (*see, e.g.*, red DB in the demonstrative shown here) and others are between the memory devices (*see, e.g.*, green DB). *See* RX-3869C at Q/A 141-42; *see also* CX-2613.002 (photo of accused product annotated here). Thus, Netlist has failed to show that the accused DBs meet the "corresponding positions" requirement of claim 1 and all asserted dependent claims.

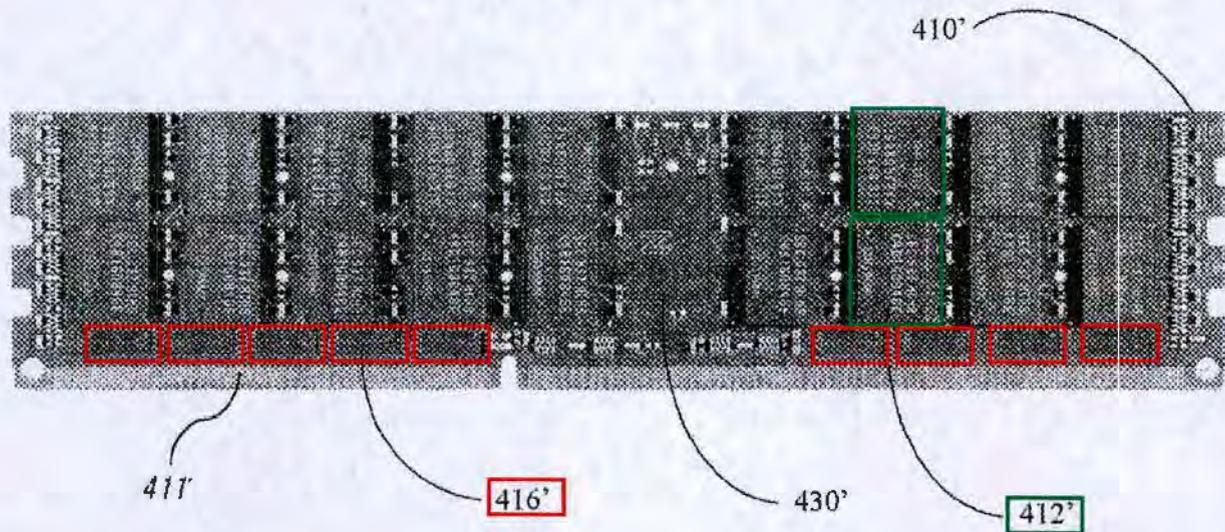
(RIB at 28-29.) Respondents primarily rely on Figure 3C of the '907 patent to show the meaning of "corresponding to." (*Id.* at 28 (citing RX-3869C at Q/A 139).) In their reply brief, Respondents argue "correspond to" cannot refer to similar horizontal ordering of buffers and memory devices as contended by the Staff (RRB at 20 (citing SIB at 35)) or physical close-ness as contended by Netlist (*id.* (citing CIB at 50-51)) and there is no reason to understand Figure 3D of the '907 patent as reflecting this limitation (*see id.* at 20-21).

Here, the undersigned finds the Accused Products meet the limitation. The '907 patent states:

FIGS. 3C and 3D illustrate the positioning of the data transmission circuits 416' in accordance with certain embodiments described herein. In certain embodiments, the position of at least one of the data transmission circuits 416' is *generally aligned* with one or more of the memory devices 412' to which the data transmission circuit 416' is operatively coupled.

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(’907 patent at 12:55-61 (emphasis added).) Admittedly, Figure 3C shows data transmission circuits 416’ (i.e., data buffers) as perfectly aligned with the memory devices 412’ to which they are connected, but this figure is clearly a conceptual illustration of layout. Figure 3D, on the other hand, is a photograph of an actual memory module and while it shows transmission circuits as offset from the memory devices, the patent discloses this figure as showing “general[] align[ment].” (’907 patent at 12:55-61.) It is undisputed that the Accused Products also employ an offset yet general alignment of data buffers and their respective memory devices such that it is clear, in a plain and ordinary sense, which memory devices each data buffer “corresponds to”:



(’907 patent at Fig. 3D (annotated));



(RIB at 28; see CIB at CX-0377 at *67).)

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Accordingly, the undersigned finds the Accused Products do include this feature of independent claim 1.

3. Dependent Claims 2-8, 10, 12, 14, and 15

With respect to dependent claims 2-8, 10, 12, 14, and 15, Netlist contends that there is no dispute over the infringement of these claims by the Accused Products, apart from their dependence on independent claim 1. (CIB at 54.) Netlist cites to the written testimony of Dr. Levitt to fulfill its obligation in establishing the Accused Products infringe these claims. (*Id.* (citing CX-2003C at Q/A 484-557).) Respondents and Staff do not appear to dispute this evidence or Netlist's contention. (RIB at 29; RRB at 5-21; SIB at 36-44; SRB at 6-16.)

In view of the testimony of Dr. Levitt that the Accused Products infringe these claims, there being no clear disagreement by Respondents and Staff as to that fact, and the above determination that independent claim 1 is infringed, the undersigned finds that the Accused Products infringe claims 2-8, 10, 12, 14, and 15 of the '907 patent. (*See* CX-2003C at Q/A 484-557.)

E. Domestic Industry – Technical Prong

Netlist asserts that its Domestic Industry Products practice claims 1-8, 10, 12, 14, and 15 of the '907 patent. (CIB at 5; *see* CIB at 54.) In its opening brief, Netlist explains "Netlist's FPGA HybriDIMM includes a JEDEC-compliant LRDIMM portion that operates identically to JEDEC-compliant LRDIMMs like the Accused LRDIMM Products" and "Respondents and Dr. Subramanian only allege that Netlist's FPGA HybriDIMM does not satisfy the technical prong of the ITC's statutory domestic industry requirement for the same reasons they allege the Accused LRDIMM Products do not infringe." (CIB at 54 (citing [1023 ID] at 43; RX-3869C at Q/A 161; CX-2003C at Q/A 276-288, 598-610).) Thus, Netlist asserts that the practice of claims 1, 2-8, 10,

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12, 14, and 15 of the '907 patent by the Domestic Industry Products rises and falls with infringement of the same claims by the Accused Products.

Respondents and the Staff similarly contend that “Netlist’s HybriDIMM products fail to satisfy the technical prong of the domestic industry requirement for at least the same reasons that the accused LRDIMM products do not infringe.” (RIB at 29; SIB at 64.) Respondents add, however, that even under Netlist’s “received” as “latched” theory, there exists an overall failure of proof to show “[the Domestic Industry Products’] second memory devices do not latch any data.” (RIB at 29-30 (citing CX-2003C at Q/A 689-690; Levitt, Tr. at 431:2-432:9); RRB at 21-22.) As far as Netlist’s reliance on the JEDEC specification to show this, Respondents argue “[t]here is nothing in the JEDEC standards that prevents a non-targeted memory device from latching the data.” (*Id.* at 30.) The Staff largely concurs with this assessment, stating, “analysis of ‘do not . . . receive’ limitation in the DI products required evidence specific to its memory devices – Samsung memory devices. Here, the evidence is insufficient to establish that the DI products satisfy this limitation.” (SIB at 65 (citing Levitt, Tr. at 431:21-432:9); *see* SRB at 17-21 (citing *inter alia Fujitsu Ltd. v. Netgear, Inc.*, 620 F.3d 1321, 1327 (Fed. Cir. 2010)).)

In its reply brief, Netlist contends Respondents never raised a failure of proof on technical domestic industry “but now piggy back on, this argument [from the Staff].” (CRB at 29.) Netlist takes the position the argument is waived under Ground Rules 9.1, 13.1, and 13.3. (*Id.*) On its merits, however, Netlist argues “the scope of the claims, as informed by the level of skill of a POSITA, does not require any transistor-level analysis” defeats Staff’s claim. (*Id.* (citing Levitt, Tr. at 450:2-22, 451:13-453:3, 444:18-446:24, 464:11-25, 465:10-466:18).) Netlist adds that the evidence shows “the DRAM devices are indisputably JEDEC-compliant.” (*Id.* at 30 (citing RX-3869C at Q/A 163).)

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Here, as an initial matter, the undersigned finds Respondents have waived a challenge to the sufficiency of Netlist's showing the "receive / do not receive" claim limitation as this was not included in their pre-hearing brief. (See RPB at 145-151.) Thus, only the Staff's evidentiary challenge is considered and, upon review, the undersigned is not persuaded that satisfaction of the "receive / do not receive" limitation can only be shown with evidence specific to the internal operation of the Samsung memory devices contained in the Domestic Industry Products. The test for technical prong of domestic industry is the same as that for infringement—a preponderance of the evidence standard. See *Crocs, Inc. v. Int'l Trade Comm'n*, 598 F.3d 1294, 1307 (Fed. Cir. 2010); *Cross Med. Prods., Inc. v. Medtronic Sofamor Danek, Inc.*, 424 F.3d 1293, 1310 (Fed. Cir. 2005). This standard has been interpreted as a "more likely than not" test which can be satisfied with circumstantial evidence of infringement. *Lucent Techs., Inc. v. Gateway, Inc.*, 580 F.3d 1301, 1318 (Fed. Cir. 2009) (citing *Moleculon Research Corp., v. CBS, Inc.*, 793 F.2d 1261 (Fed. Cir. 1986)). Thus, the undersigned cannot agree that the JEDEC specifications' failure to "govern memory device design" (SRB at 19) or to "mandate the circuitry of the memory devices" (*id.* at 20) necessarily means Netlist cannot show practice of this limitation; and, upon consideration of the evidence that Netlist has presented, the undersigned finds a preponderance of the evidence shows the "receive / do not receive" claim limitation is practiced.

With Respondents' argument on insufficient evidence removed, Netlist and Respondents are otherwise in agreement that Netlist's practice of the limitation rises and falls with infringement by the Accused Products. (CIB at 54; RIB at 29; RRB at 21-22.) As discussed above, the Accused Products have been shown to infringe as the evidence does not support a finding that ODT circuitry or [REDACTED] (*i.e.*, the two technical grounds on which Respondents dispute infringement) qualify as reception or acquisition of a data

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signal. Further, Dr. Levitt presented un rebutted evidence that the Samsung memory devices used in the Domestic Industry Products are JEDEC-compliant (CX-2003C at Q/A 276-288 (citing, *inter alia*, CX-0060C at -58099)) and that this standard involves the use of chip-select signals sent to these memory devices to control whether or not they participate in read or write operations (*id.* at Q/A 652-661 (citing, *inter alia*, CX-0889 at -56906)). Given the lack of argument or evidence from the Staff to the contrary (*see* SIB at 64-65; SRB at 17-21), the undersigned finds that unselected (*i.e.*, inactivated) memory devices instructed not to perform a write operation would correspondingly not perform the first stage of that write operation—*i.e.*, “receive” or “acquire” the data signal. This conclusion is commensurate with that intrinsic evidence relied on by Order No. 17 in construing the “receive / do not receive” claim limitation. (*See* Order No. 17 at 26-28, 33-34.)

Accordingly, and given the above determinations on infringement, the undersigned finds a preponderance of the evidence shows that the Domestic Industry Products practice claims 1, 2-8, 10, 12, 14, and 15 of the '907 patent.

F. Validity

1. Estoppel under 35 U.S.C. § 315(e)(2)

As noted in the above procedural history of this investigation, Respondents have filed numerous petitions for *inter partes* review on the validity of the asserted claims of the '907 patent. At the time of this initial determination, two of those petitions, IPR2018-00362 and IPR2018-00363 (consolidated into IPR2018-00362 (RX-2599 at *5041)), have resulted in a final written decision from the USPTO Patent Trial and Appeals Board, which the parties acknowledge. (CIB at 55; RIB at 5; SIB at 10.) This circumstance implicates 35 U.S.C. § 315(e)(2), which reads as follows:

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(e) Estoppel.—

(2) Civil actions and other proceedings.—

The petitioner in an inter partes review of a claim in a patent under this chapter that results in a final written decision under section 318(a), or the real party in interest or privy of the petitioner, may not assert either in a civil action arising in whole or in part under section 1338 of title 28 or in a proceeding before the International Trade Commission under section 337 of the Tariff Act of 1930 that the claim is invalid on any ground that the petitioner raised or reasonably could have raised during that inter partes review.

35 U.S.C. § 315(e)(2).

Netlist contends Respondents are estopped from presenting obviousness invalidity theories based on prior art references U.S. Patent No. 7,024,518 (“Halbert”) and U.S. Pub. No. 2009/0248969 (“Wu”). (See CIB at 54-55.) Netlist summarizes:

As the CALJ correctly stated in Order No. 51, the statutory mandate of U.S.C. § 315(e)(2) is clear: any petitioner who obtains a Final Written Decision (“FWD”) from the Patent Trial and Appeals Board (“PTAB”) is precluded from advancing any invalidity grounds in the ITC that it raised or reasonably could have raised, before the PTAB. Order No. 51 at 6-8; U.S.C. § 315(e)(2). Respondents obtained a FWD on the asserted ’907 patent, and are precluded from advancing invalidity grounds in this Investigation that they raised, or reasonably could have raised, in their IPR petition. *SK hynix, Inc. v. Netlist, Inc.*, IPR2018-00362, Paper No. 29 (P.T.A.B. June 27, 2019) (“362 IPR”); U.S.C. § 315(e)(2).

(*Id.* at 54-55.)

Netlist cites one form of “reasonably could have raised” as any patent or publication that a petitioner actually knew about or that a skilled searcher could have been expected to discover. (See *id.* at 56 (citing *Palomar Techs., Inc. v. MRSI Sys., LLC*, 373 F. Supp. 3d 322, 331 (D. Mass. 2019) (emphasis added)).) Netlist notes that the PTAB itself, “conducting a nearly identical estoppel analysis, [] estopped and terminated SK hynix’s IPR proceeding based on Halbert and Amidi grounds following the FWD in the Ellsberry IPR.” (*Id.* (citing IPR2018-0036[4], Paper 32

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at 5-13.) Netlist argues the Federal Circuit holding in *Shaw Indus. Grp., Inc. v. Automated Creel Sys., Inc.*, 817 F.3d 1293 (Fed. Cir. 2016), cited by Respondents to avoid estoppel, is limited to a circumstance of IPR grounds not-instituted by the PTAB, and otherwise cannot occur again in light of the Supreme Court's decision in *SAS Inst., Inc. v. Iancu*, 138 S. Ct. 1348, 1354 (2018). (*Id.* at 56-57.) In other words, according to Netlist, "federal district courts and the PTAB cabined Shaw to its peculiar facts." (*Id.* at 57 (citations omitted).)

Turning back to the Halbert and Wu references, Netlist argues both reasonably could have been raised in IPR2018-00362—Respondents' *inter partes* review proceeding against the '907 patent which resulted in a final decision. (*Id.* at 58-59.) Netlist observes Halbert was asserted in that very IPR (*id.* (citing *SK hynix, Inc. v. Netlist, Inc.*, IPR2018-00362, Paper No. 29 at 8-9)) and Wu was raised during the '907 patent's prosecution (*id.* at 58-59 (citing RPB at 177)). Regarding Wu specifically, Netlist contends that any argument from Respondents regarding an uncertainty over Wu's prior art status is belied by their use of Wu in this investigation. (*Id.* at 59.)

In its reply brief, Netlist addresses Respondents priority-date argument as to the Wu reference. (CRB at 34.) It summarily states:

In this Investigation and in its IPR petitions, Respondents consistently applied July 16, 2009 as the priority date for the actual issued claims of the '907 patent, and based on that date, they consistently contended that Wu is prior art to the '907 patent. *See* IPR 2018-00362, Paper 1 (Petition) at 4 (assuming that "the claims of the 907 patent are entitled to a priority date of July 16, 2009"); Respondents' Disclosure of Invalidity Contentions at 18, n. 5 ("Netlist's corrected disclosure of priority dates...states that the "earliest" priority date for each asserted claim of the '907 patent is July 16, 2009"); Respondents' Invalidity Contentions at 18 ("Wu '969 is prior art to the '907 patent.") (emphasis added).

There is no question that Respondents reasonably could have raised Wu during the IPR proceedings. As a result, they are estopped from continuing to advance the reference here.

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(*Id.*) As to Halbert, Netlist disputes that the Staff “opened the door” to these invalidity grounds with its own discussion of Halbert such that Respondents are allowed to argue the same. (CRB at 39-40.) For support, Netlist looks to caselaw which limits the “open door” only to rebuttal evidence from an opponent to “rebut any false impression that might have resulted from the earlier admission.” (CRB at 39-40 (citing, *inter alia*, *United States v. Whitworth*, 856 F.2d 1268, 1285 (9th Cir. 1988)).) Netlist asserts Respondents are not an opponent of the Staff and, even if they were, 35 U.S.C. § 315 prevents them “by law from offering any evidence or argument going to the invalidity of the ’907 patent on this ground.” (*Id.* at 40.) Netlist notes, even then, Respondents go well beyond commenting on the Staff’s contentions. (*Id.* (citing RPB at 36-42; SPB at 67-75).)

In opposition, Respondents address estoppel of the Wu reference first. Respondents explain that during prosecution of the ’907 patent, the applicant (*i.e.*, Netlist) filed inventor declarations on conception in order to “swear behind” Wu, which had previously been applied to reject the claims by the Examiner; and that the Examiner accepted those declarations such that “Wu is no longer considered prior art.” (RIB at 31 (citing RX-2006C at Q/A 117, 118; RX-3627 at *173-188, 316-320).) Respondents reason they therefore “could not have reasonably raised Wu as prior art in its IPRs.” (*Id.* (citing 35 U.S.C. § 325(d)).) Aware that they now assert Wu as prior art to the ’907 patent, Respondents explain:

The reason Wu is an invalidity reference here is because after Respondents filed their IPRs, Netlist made the strategic decision to not claim an earlier priority date that would have removed Wu as prior art in this Investigation, without ever conceding it could be considered prior art in the Patent Office. Thus Respondents could not have reasonably raised Wu in their IPR petitions, and estoppel does not apply.

(*Id.* at 31-32.)

With respect to the Halbert and Amidi invalidity ground (hereafter, referred to as “Halbert/Amidi” or “Halbert/Amidi combination”), Respondents’ initial brief does not address the

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merits of why they believe estoppel does not apply to this reference because, in their view, “it is undisputed that estoppel under § 315 does not apply to Staff, and thus Staff ‘opened the door’ for the parties to address invalidity in light of Halbert and Amidi.” (RIB at 36-37.)

With respect to both of Wu or Halbert/Amidi, Respondents’ reply brief cites *Shaw* as foreclosing estoppel through its holding that “Section 315(e)(2) estops an IPR petitioner from asserting grounds that were raised or that could have been raised after institution—*i.e.*, during the actual IPR.” (RRB at 22 (citing *Shaw*, 817 F.3d at 1300).) Respondents thus reason “[n]either Wu nor Halbert was included in the 362 IPR petition, and they were unrelated to the grounds included in that petition, which focused on Ellsberry. They therefore could not have been raised ‘during that’ IPR (*i.e.*, after institution, according to *Shaw*).” (*Id.* at 23.)

For its part, the Staff does not address estoppel as it concerns Respondents, only arguing that its own invalidity contention based on the Halbert reference is not affected by 35 U.S.C. § 315. (SIB at 10 n.15, 65 n.48; SRB at 22 (“Accordingly, to the extent the claims are interpreted broadly, the Staff’s evidence shows that the claims of the ’907 patent are invalid as obvious”).)

Here, the undersigned finds 35 U.S.C. § 315(e)(2) prevents Respondents from “assert[ing]” that the asserted claims of the ’907 patent are invalid on the grounds of: (1) obviousness over Wu under 35 U.S.C. § 103; and (2) obviousness over Halbert and Amidi under 35 U.S.C. § 103. With respect to Wu, it is clear Respondents reasonably could have raised this reference in their petition which precipitated the USPTO to institute IPR2018-00362; that petition existing in the record as CX-2684. It is more likely than not that Respondents knew of this reference, as it is cited on the face of the ’907 patent. (*See* ’907 patent at Page 2.) Additionally, Respondents’ contention that Netlist’s successful “swearing-behind” prevented Wu from being raised is untenable in light of the following statement included at the beginning of Respondents’ IPR petition:

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A. Effective Filing Date of the 907 Patent

The application that resulted in the 907 Patent is a continuation of an application filed on April 15, 2010, now Patent No. 8,516,185 (“the 185 Patent”) (Ex.1017), which is a “continuation-in-part” of an application filed on July 16, 2009, now Patent No. 8,417,870 (Ex.1015). Because each of the prior art references identified in this Petition predates July 16, 2009, Petitioner assumes for this Petition only that the claims of the 907 Patent are entitled to a priority date of July 16, 2009. Ex.1003¶¶43-46.

(CX-2684 at -625915.) This statement demonstrates Respondents’ petition was not conditioned on what the Examiner accepted as the effective date of invention during the ’907 patent’s prosecution. There is thus no merit to Respondents’ claim that Wu only appears now in this investigation because “Netlist made the strategic decision to not claim an earlier priority date that would have removed Wu as prior art.” (RIB at 31.) Clearly, it was not an earlier-than-July 16, 2009 priority date consideration that kept Wu out of Respondents’ IPR petition.

With respect to the Halber/Amidi combination, the undersigned first disagrees with Respondents that, should 35 U.S.C. § 315(e)(2) apply to them, they are somehow permitted to piggyback off the Staff’s independent assertion of obviousness on these references. The statute estops a petitioner from “assert[ing] . . . that the claim is invalid [on the specified grounds].” *See* 35 U.S.C. § 315(e)(2). Captioning such an assertion as a response to another party’s contention is still an assertion of invalidity which the statute does not permit.

Further, 35 U.S.C. § 315(e)(2) does apply to the Halbert/Amidi combination. Unlike Wu, it is particularly difficult to see how this combination would not fall under the “reasonably could have raised” rubric given that Respondents did file an additional *inter partes* review petition based on this ground shortly after the IPR2018-00362 petition. (CX-2695 at 1, 82; CX-2707 at 36.) The undersigned finds the existence of this petition shows it is more likely than not that Halbert/Amidi could have been raised in the *inter partes* review petition of IPR2018-00362. Respondents do not

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dispute their ability to have done this (RRB at 22-23) and actually acknowledge their success in having used Halbert and Amidi to successfully invalidate the claims of the parent to the '907 patent—the '185 patent (*see* RIB at 37).

With respect to the *Shaw* decision and its effect upon both Wu and Halbert/Amidi, the undersigned agrees with the reasoning of several district courts and the PTAB itself that *Shaw*'s holding can only apply to the circumstances that were before it—namely, the inapplicability of 35 U.S.C. § 315(e)(2) to invalidity grounds that were included in a petition but not instituted. *See, e.g., Trustees of Columbia University in the City of New York v. Symantec Corp.*, 390 F. Supp. 3d 665, 674, 677-681 (E.D. Va. July 2, 2019); *Oil-Dri Corp. of Am. v. Nestlé Purina Petcare Co.*, No. 15-CV-1067, 2017 WL 3278915, at *7 (N.D. Ill. Aug. 2, 2017) (collecting cases); *SK Hynix Inv. V. Netlist, Inc.*, No. IPR2018-00364, Paper No. 32, at 6-10 (P.T.A.B. Aug. 5, 2019). Indeed, the holding in *Shaw* seems tailored to prevent the injustice faced by that particular petitioner; namely, the prejudice from being estopped from asserting grounds in other tribunals that the PTAB decided never to address:

We cannot say we agree with the PTO's handling of Shaw's petition. We also cannot say that the PTO's decision made the proceeding more efficient, particularly given that the Payne-based ground was alleged anticipation by a single reference while the two instituted grounds were alleged obviousness over combinations of references.

We have no authority, however, to review the Board's decision to institute IPR on some but not all grounds. "Denial of a ground is a Board decision not to institute inter partes review on that ground." 37 C.F.R. § 42.108(b). We thus lack jurisdiction to review the Board's decision not to institute IPR on the Payne-based ground, which includes its decision not to consider the Payne-based ground in its final written decision.

....

Shaw's argument is predicated on its concern that the statutory estoppel provisions would prevent it from raising the Payne-based ground in future proceedings.

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....

The PTO argues that Shaw's statutory interpretation of the estoppel provision is incorrect because "the denied ground never became part of the IPR." PTO Br. 38. We agree with the PTO that § 315(e) would not estop Shaw from bringing its Payne-based arguments in either the PTO or the district courts. Both parts of § 315(e) create estoppel for arguments "on any ground that the petitioner raised or reasonably could have raised *during* that inter partes review." Shaw raised its Payne-based ground in its petition for IPR. the PTO denied the petition as to that ground, thus no IPR was instituted on that ground. The IPR does not begin until it is instituted. *See Cuozzo*, 793 F.3d at 1272 ("IPRs proceed in two phases. In the first phase, the PTO determines whether to institute IPR. In the second phase, the Board conducts the IPR proceeding and issues a final decision." (citations omitted)). Thus, Shaw did not raise—nor could it have reasonably raised—the Payne-based ground *during* the IPR. The plain language of the statute prohibits the application of estoppel under these circumstances. In light of our construction of the statute, mandamus is not warranted. Thus, we deny Shaw's petition for writ of mandamus.

Shaw, 81 F.3d at 1299-1300 (emphasis added). The specter of this injustice, however, has since been eliminated by the Supreme Court in *SAS Inst.*, which held that 35 U.S.C. § 318 requires the PTAB take an all-or-nothing approach to the grounds included in an IPR petition. 138 S. Ct. at 1355 ("Where a statute's language carries a plain meaning, the duty of an administrative agency is to follow its commands as written, not to supplant those commands with others it may prefer. . . . Because SAS challenged all 16 claims of ComplementSoft's patent, the Board in its final written decision had to address the patentability of all 16 claims.") (internal citation omitted). In other words, there will never be another situation like the petitioner's in *Shaw*.

I further note that the *Shaw* panel's interpretation of "during" in 35 U.S.C. § 315(e) as applying strictly to that time period *following* institution of the IPR, is based on a critical, but ultimately incorrect, assumption—that a petitioner actually has an ability to raise additional invalidity grounds, not included in its petition, post-institution. *See Shaw*, 817 F.3d at 1300 ("The IPR does not begin until it is instituted. . . . Thus, Shaw did not raise—nor could it have reasonably

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raised—the Payne-based ground *during* the IPR”) (emphasis in original)). The PTAB has since confirmed the undersigned’s understanding that no such ability exists:

As Petitioner acknowledges, our rules preclude adding any new grounds of unpatentability following filing of the petition, and these rules have not changed post-SAS. Petitioner’s argument that subsection 315(e) estops a party only with respect to grounds that could have been raised during the trial (i.e., after institution) would render subsection 315(e) (and our implementing rule) effectively meaningless. That is, the estoppel effects of subsection 315(e), under Petitioner’s interpretation of the statute, could not apply to any grounds other than those actually asserted in the earlier petition. Thus, the result of Petitioner’s interpretation of the statute, could not apply to any grounds other than those actually asserted in the earlier petition. Thus, the result of Petitioner’s interpretation of “reasonably could have raised” is that only grounds raised in the petition that results in a final written decision could be estopped.

Such an interpretation of subsection 315(e)(1) would render superfluous “reasonably could have raised.”

SK Hynix Inv. V. Netlist, Inc., No. IPR2018-00364, Paper No. 32, at 7-8. It is therefore determined that *Shaw* does not prevent the application of estoppel to Respondents’ Wu and Halbert/Amidi combination.

Accordingly, the undersigned hereby finds that Respondents are estopped from asserting the ’907 patent claims are invalid on the grounds of obviousness over Wu or the Halbert/Amidi combination. Those grounds of invalidity not affected by estoppel are addressed below.

2. Obviousness

a) Halbert and Amidi

Netlist does not contend estoppel applies to the Staff or, correspondingly, to the Staff’s independent theory of invalidity based on prior art references Halbert (RX-2360) and Amidi (RX-1432). (See CIB at 58-59; CRB at 39-40, 41-44, 44-45.) On this issue, the Staff first argues Netlist’s decision not to appeal a prior PTO determination that Halbert and Amidi would have been

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combined to create the invention claimed in the parent '185 patent “clearly and convincingly shows that the *Halbert* and *Amidi* references would be combined” (SIB at 67.) The Staff also cites the 1023 ID’s determination on which elements of the, again, parent '185 patent are met by the Halbert and Amidi combination such that, in the Staff’s view, “[t]he only outstanding claim features [assumedly, of the '907 patent] are memory devices on shared data lines and the ‘first module control signals’ and ‘receive/do not receive’ limitations.” (*Id.* (citing 1023 ID at 121).) The Staff then discusses additional arguments Netlist made in the “Patent Owner Response” to the '185 patent IPR along with certain excerpts of Amidi (*see* SIB at 67-70) before concluding:

Accordingly, in the Staff’s view, statements that the structure and function of Amidi’s chip-select and multiple ranks would direct a POSITA to the combination, and Netlist’s failure to contest that Amidi’s additional memory ranks would be combined with Halbert’s buffer circuit, support finding that the combination of Halbert and Amidi teaches the “chip-select” interpretation of the claims of the '907.

....

Thus, the evidence shows that the claims of the '907 patent, if construed to merely require a chip-select signal to the memory devices for performance/non-performance of the memory read/write command, would have been obvious in light of the combination of Halbert and Amidi.

(*id.* at 69; *see generally id.* at 44-50 (discussing '185 patent IPR history); SRB at 21-22). The Staff then provides a form of claim chart aligning some but not all limitations of claim 1 of the '907 patent to statements made in a certain “Patent Owner Response.” (*See* SIB at 71-73.) As to dependent claims, the Staff identifies each along with a citation to Dr. Suhramanian’s testimony or '185 patent IPR documents. (*Id.* at 73-75.)

In opposition, Netlist describes the Staff’s combination of Halbert and Amidi as “unique” as compared to that proposed by Respondents’ in this investigation:

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In addition to the combination of Halbert and Amidi advanced by Respondents and Dr. Subramanian, Staff advances yet another unique combination of Halbert and Amidi. Staff's combination is based on (1) a finding from a different agency (2) regarding a different patent (3) using a different standard of proof and different claim construction rules, (4) combined with the testimony of Dr. Subramanian about a figure he did not create showing a version of the Halbert and Amidi combination that he did not advance and (5) an out-of-context portion of a PTAB declaration from Dr. Baker. SPHB at IV.H.4.b; Tr. (Subramanian) at 721:24-725:14; Tr. (Baker) at 829:1-830:25, 831:24-832:16, 833:12-23.

(*Id.*) More generally, Netlist asserts the evidence fails to show one of skill in the art would combine the two references, and even if combined there remains a failure to disclose claim elements 1a, 1b, 1c, 1d, 1e, and 1f of claim 1, and *all* dependent claims. (*Id.* at 62-63.) Regarding motivation to combine, Netlist views the necessary combination as involving:

(1) adding ranks to Halbert; (2) modifying the functionality of Halbert's register controller by adding Amidi's CPLD logic, which is designed as a separate component from Amidi's register; (3) fundamentally changing the concurrent memory transaction functionality of Halbert's memory ranks to operate in a non-concurrent manner; and (4) altering Halbert's chip select function from operating in a concurrent manner to a non-current manner.

(*Id.* at 63-64.) Netlist claims "[i]n reality, combining these two references would negate the benefits that either could offer alone." (*Id.* at 64 (citing Baker, Tr. at 844:25-845:15); *see id.* at 65-66 (citing Baker, Tr. at 829:8-830:6, 843:22-844:5, 844:25-845:15; CX-2727C at 468, 471, 547-553, 566, 570-571; RX-2006C at Q/A 566).)

Regarding disclosure of particular claim elements, Netlist argues the 1023 ID already found, in an impliedly dispositive manner for claim 1 in this investigation, that "Halbert always reads from or writes to all of its disclosed memory devices." (*Id.* (citing 1023 ID at 131-133); *see id.* at 64-65 (citing Baker, Tr. at 829:18-830:2, 839:19-840:2, 843:5-8, 843:12-16, 845:2-15; CX-2727C at Q/A 529).) Further, Netlist claims the Halbert and Amidi combination "is still not configured to control its interface circuits using a CAS latency parameter" in apparent relation to

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dependent claim 8 (*see id.* at 65-66 (citing CX-2727C at Q/A 468, 570; CX-2631 at 4:6-59)) and there is no sufficient motivation to use tri-state logic devices, in apparent relation to claim 14 (*id.* at 66 (citing CX-2727C at Q/A 566)).

In its reply brief, Netlist addresses the Staff's obviousness theory of Halbert and Amidi—a theory which it characterizes as “a different combination” than Respondents’ and one which appears to be based on an IPR final written decision for the ’185 patent and not the ’907 patent. (*Id.* at 41.) Netlist also disputes that any waiver has occurred based on acts not taken in relation to that IPR, either in fact or by law (*see id.* at 41-42) and that the claims of the ’907 patent are as similar to the ’185 patent so as to provide a probative comparison (*see id.* at 42-43 (citing SIB at 67)). Even then, Netlist argues the Staff compares the two incorrectly. (*See id.* at 43.) As to dependent claims, Netlist primarily takes issue with the Staff's reliance on Dr. Subramanian's testimony—a problem, according to Netlist, because these claims require antecedent basis in claim 1 and the Staff's claim 1 analysis is fundamentally different than Respondents'. (*Id.* at 44-45.)

Upon review of the parties' briefings, it first appears there is no dispute that Halbert, Amidi, or any of the other cited art, qualify as prior art to the ’907 patent. Additionally, the undersigned finds the parties' discussions of Halbert/Amidi lackluster. Netlist has not complied with the spirit of Ground Rule 13.3 (Order No. 22) with its conclusory statement “the combinations of these references advanced by Respondents and Staff do not disclose claim elements [1a], [1b], [1c], [1d], [1e], [1f] of claim 1, or any of the dependent claims” (CIB at 63) followed only with a discussion of “CAS latency” (*id.* at 65 (relevant to claim 8)) and “tri-state logic” (*id.* at 66 (relevant to claim 14)).

As to whether the Staff has presented its own independent Halbert/Amidi invalidity theory, the undersigned cannot discern that theory from the record. The Staff's briefing includes no

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explanation how a Halbert and Amidi combination renders each and every limitation of independent claim 1 of the '907 patent obvious, opting instead for a more general discussion on how prior '185 patent IPR proceedings confirm Halbert and Amidi are combinable (*see* SIB at 44-50), the combination discloses “receive/do not receive” (*id.* at 67-70), and other “conflicting arguments” from Netlist (*id.* at 71-73). As to dependent claims, the Staff changes tact and lists each claim next to varying citations of expert testimony or '185 patent IPR documents, at least one of which, RX-2451, is not in evidence. (*Id.* at 73-74.) In light of these deficiencies, especially with respect to independent claim 1, the undersigned finds the Staff has not presented a clear and convincing theory of invalidity.

Accordingly, claims 1-8, 10, 12, 14, and 15 of the '907 patent have not been shown to be obvious, and thus invalid, in light of Halbert, Amidi, and other prior art.

b) QBM Products

Respondents contend a combination a collection of prior art products from third-party Kentron, referred to as the “QBM Products” (RIB at 44) renders claims 1-8, 10, 12, 14, and 15 obvious (*id.* at 44-45) alone and when in combination with other prior art. Respondents begin by first explaining:

The QBM products went through an evolution. Subramanian, Tr. 768:3–:11. First built with two ranks and without a command/address register, the next generation of QBM was designed with an Advanced Buffer and, optionally, with four ranks. *See* RX-2006C at Q/A 224; RDX-2006C.307; Subramanian, Tr. 757:23–758:16. Such a four-rank QBM with standard memory stacking rendered obvious the asserted claims. RX-2006C at Q/A 1045-1189.

(*Id.* at 44.) To show how each limitation of claim 1 ([1.a] through [1.h]) is either disclosed or obvious in light of the QBM Products, Respondents rely on Dr. Subramanian’s testimony and analysis. (*See id.* at 44-45 (citing RX-2006C at Q/A 1046-1063).) Respondents rely even more

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entirely on that testimony for the dependent claims. (*Id.* at 45 (citing RX-2006C at Q/A 1064-1085, 1136-1157).)

In their reply brief, Respondents observe Netlist as failing to dispute that the QBM Products incorporate a distributed buffer architecture (RRB at 30 (citing CIB at 69-72)) and emphasize that the QBM2 product was an “evolution” of QBM1 making it obvious that features of one would be combined into the other (*id.* at 30-31 (citing RX-2006C at Q/A 1050, 1124-1125)). Respondents restate their contention that registering and re-driving a signal is “producing” that signal under claim 1, and further contend Netlist misinterprets their theory and evidence as it concerns dependent claim 8. (*Id.* at 31-32.)

In opposition, Netlist argues “the evidence establishes that Respondents’ QBM Products combination does not disclose elements [1a], [1b], [1c], [1d], [1e], [1f] of claim 1 or any dependent claims of the ’907 patent.” (CIB at 69 (citing CX-2727C at Q/A 1135-1229).) Netlist contends Dr. Subramanian has applied a variety of secondary references to cure these deficiencies, but does so “without explaining why a person of ordinary skill in the art would have been motivated to combine them with the QBM Products.” (*Id.* (citing CX-2727C at Q/A 1275-1325).) Netlist continues:

While Respondents refer to this “reference” as the “QBM Products,” it is actually the combination of two separate products (including at least preliminary—but not implemented— design(s), the QBM1 Product, and the QBM2 Product), and 13 different documents to create a fictitious product that never existed. CX-2727C (Baker) at Q/A 1127; Tr. (Subramanian) at 654:16-659:25. Moreover, Respondents provided no analysis regarding why a person of ordinary skill in the art would have been motivated to combine the QBM1 product with the QBM2 product, let alone combine both product versions with every technical disclosure ever made about either of them. In fact, a skilled artisan would have not have been motivated to combine and/or modify any of these disclosures to create the combination. CX-2727C (Baker) at Q/A 1125-1132.

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(*Id.* at 70.) Netlist views one particular modification, the addition of JEDEC standard command and address registers to the QBM1 module, as prohibited by the QBM designers' rejection of such a change (*id.* (citing CX-2727C at Q/A 1142)) and, even if done, it would not meet the "produce" claim element (*id.* at 71 (citing CX-2727C at Q/A 1195); *see* CRB at 46). Netlist also asserts there is a failure of the QBM Products to disclose the timing control of claim 8 (CIB at 71 (citing CX-2727C at Q/A 1217)) or suggest any number of ranks beyond two would be used (*id.* at 71-72 (citing CX-2727C at Q/A 1170); *see* CRB at 45-46). As to dependent claims, Netlist's reply brief points out Respondents do not present a claim-by-claim analysis, and improperly summarize these claims "recite only conventional techniques" in violation of Ground Rule 13.1. (CIB at 46 (citing RIB at 45).) Netlist adds that Respondents' presentation on these claims otherwise fails to go beyond the mere showing that each element was known in the art. (*Id.* at 47 (citing *KSR*, 550 U.S. at 418).)

The Staff takes the position that the QBM Products fail to "show all of the limitations of the '907 patent." (SIB at 76.) The Staff appears to take issue with Respondents' contention that the QBM Products were envisioned to consist of four ranks of memory, thereby preventing clear and convincing evidence of invalidity. (*See id.*)

Upon review of the parties' briefings, it first appears there is no dispute that the QBM Products or, more specifically, the QBM1 and QBM2 products along with that collection of documents describing these products, qualify as prior art to the '907 patent. Additionally, the undersigned notes that the arguments contained in the parties' briefings are cursory and conclusory in nature. For independent claim 1, Respondents make only a cursory attempt to explain how the QBM Products match claim elements (RIB at 44-45), and for dependent claims, cite to questions and answers in Dr. Subramanian's testimony without any real explanation (*id.* at 45; RRB at 31

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(addressing claim 8 in passing)). For its part, Netlist offers the summary statement that “the evidence establishes that Respondents’ QBM Products combination does not disclose claim elements [1a], [1b], [1c], [1d], [1e], [1f] of claim 1, or any of the dependent claims” (CIB at 69) but follows only with discussions of “registering and re-driving of chip select signals” (*id.* at 71 (relevant to claim limitation 1b)), “scheduling EN/DIS and W/R commands” (*id.* (relevant to claim 8)), and four ranks of memory (*id.* at 71-72 (relevant to claim limitation 1c)). While these heavily abbreviated discussions are not a violation of the Ground Rules per se, they are—in essence—“incorporating by reference” an expert’s testimony in an attempt to circumvent the page limits on post-hearing briefing, and are not the caliber of briefing expected from the parties given the disputed status of these issues. Nevertheless, all limitations of independent claim 1 and the asserted claims depending therefrom are discussed below.

To begin and with respect to limitation 1a, Respondents contend the QBM Products disclose this element. (RIB at 44 (citing RX-2006C at Q/A 1046-1047).) Upon review of the cited testimony and evidence, the undersigned finds that this element disclosed. Dr. Subramanian has persuasively explained how the QBM Products consisted of a DIMM module which communicated with a system memory controller through standardized control and sets of data lines in 64 or 72-bit bus widths. (RX-2006C at Q/A 1047.) Netlist’s expert, Dr. Baker, does not dispute this limitation in his testimony. (*See* CX-2727C at Q/A 1136.) Therefore, limitation 1a is met.

With respect to limitation 1b, Respondents contend the QBM Products render this element obvious. (RIB at 40 (citing RX-2006C at Q/A 1048-1050; Subramanian, Tr. at 763:13-764:6).) Upon review of the cited testimony and evidence, the undersigned finds that this element would have been obvious. Dr. Subramanian has persuasively explained that use of registers on memory modules to buffer incoming address and command signals and then retransmit these signals to

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memory devices was known and otherwise contemplated by the QBM designers, and would have provided the benefit of decreasing the load on these lines. (RX-2006C at Q/A 1049.) Dr. Subramanian also explained how another circuit within the QBM1 product generates a “BE” signal which, when sent to a “2 to 1 QBM Bus switch,” effectively controls the routing of data to one of two ranks, or banks, of memory devices (*id.* (citing RX-3201; RX-3205)) and how compatibility objectives would have motivated a person of ordinary skill to place all of these signal generations on the memory module as opposed to the memory controller—and did so motivate the QBM designers themselves in providing an “Advanced Buffer” in the QBM2 product which sends “EN/DIS” and “W/R” signals to QBM Switches and “ADD/CMD” signals to memory devices (*see id.* (citing, *inter alia*, RX-3211C at -68717, -68718; RX-3212 at -268903, -268918; RX-3208 at -283990, -283991)). To the extent Netlist argues the QBM designers’ decision not to use a register shows it would not have been obvious to one of ordinary skill (*see* CIB at 71), this is effectively a “teaching away” argument, which is not persuasive given Netlist’s failure to show any disparagement or discouragement towards the use of a register. *In re Peterson*, 315 F.3d 1325, 1332 (Fed. Cir. 2003) (“While [the prior art reference] mentions a preferred alloy that does not contain rhenium, it does not disparage or otherwise discourage the use of alloys containing rhenium.”); *see Santarus, Inv. V. Par Pharm., Inc.*, 694 F.3d 1344, 1356 (Fed. Cir. 2012) (“Describing a formulation as ‘second best’ is not a ‘clear discouragement,’ as is required by our precedent.”).

Netlist’s expert, Dr. Baker, also argues against this compatibility objective with, “[i]t is therefore unclear to me how a person of ordinary skill in the art would have desired to make the QBM Product compliant with an *existing* JEDEC Standard when the premise of the inventions and disclosures is that [QBM] is a new technology.” (CX-2727C at Q/A 1145.) The undersigned

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disagrees given the undisputable importance that standardization has to the memory module market. The evidence shows even “new” module technologies, if they are ever to be used, must be incorporated into products which comply with standards in order to be adopted by consumers. (See, e.g., '907 patent at 1:59-67 (“In general, once the memory space is defined for an electronic system, it would not be feasible to modify the memory space without an extensive design change. This is especially true for the case in which a memory space is defined by a consortium, such as the Joint Electron Device Engineering Council (JEDEC).”); CX-2003C at Q/A 89-106; RX-2006C at Q/A 425.)

Additionally, Netlist and Dr. Baker challenge whether the QBM Products “produce” module control signals by simply registering and re-driving those signals. (CIB at 71; CX-2727C at Q/A 1162-1165.) As discussed above, Order No. 17 construed “produce” as “create, *i.e.*, bring into existence.” (Order No. 17 at 135.) It is logical to assume that to drive a signal is to create it. Thus, signals which are *re*-driven are, in effect, recreated (*i.e.*, produced) in satisfaction of the element. The undersigned further notes the '907 patent's discussion of its own buffers as “regenerating” signals. ('907 patent at 16:64-7:4.) Therefore, limitation 1b is met.

With respect to limitation 1c, Respondents contend the QBM Products render this element obvious in combination with other art. (RIB at 44-45 (citing RX-2006C at Q/A 1051-1053; RX-1433; RX-1434; RX-0338; RX-2597; RX-3198; RX-1432).) Upon review of the cited testimony and evidence, the undersigned finds that this element would have been obvious in light of Amidi. Dr. Subramanian has persuasively shown that adding two additional ranks to the pre-existing two ranks of the QBM Products would have been an obvious modification to obtain the cost benefit of using four lower-density memory devices in place of two higher-density memory devices, as in,

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for example, Amidi. (RX-2006C at Q/A 1049, 425; RX-1432 at [0008]-[0010], Figs. 5, 6A.)⁹ Netlist's opposition to a motivation to add additional ranks to the QBM Products (CIB at 71-72) fails to address the this technique known as rank multiplication and while Dr. Baker mentions it, he does not, therefore, discuss the benefits it would bring (CX-2727C at Q/A 1151-1152, 1168-1172). Additionally, based on at least the above disclosures, the analogous nature of the QBM Products, Amidi, and the '907 patent cannot reasonably be questioned.

Dr. Subramanian has also shown it would have been obvious, and actually contemplated by the QBM designers, to place one of the additional ranks on the same bus as a first original rank, and the other additional rank on the same bus as a second original rank (*i.e.*, stacked memory devices)—and to selectively activate the ranks which share a data bus through standardized chip-select signals. (*Id.* at 1052 (citing, *inter alia*, RX-3206C at -279836); *see* RX-1451 at -6402.) As discussed above on the issue of infringement and domestic industry, the undersigned finds a person of ordinary skill in the art would understand well-known “chip select signals” as causing a memory device, or memory chip, to receive or not receive a data signal associated with a write operation—as well as cause a memory device to output or not output a data signal associated with a read command. Put another way, these known signals are a means to select which memory devices participate in a read or write command. (RX-1433 at -48062, -48068; RX-1451 at -6397, -6400-6403; RX-2006C at Q/A 1052-1053.) Indeed, based on the record, the undersigned is unaware of any technique other than chip-select signals for preventing conflicts on a set of data lines shared by two or more memory devices. *KSR*, 550 U.S. at 421 (“When there is a design need or market

⁹ The undersigned observes that Dr. Subramanian's discussion of motivation to combine occurs in the context of limitation 1b, even though he does not tie the combination to any sort of grounds for satisfying that limitation. (*See* RX-2006C at Q1048-1050.) This is contrasted with limitation 1c where the combination is directly relied on.

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pressure to solve a problem and there are a finite number of identified, predictable solutions, a person of ordinary skill has good reason to pursue the known options within his or her technical grasp.”) To the extent Netlist criticizes Respondents for not identifying with specificity which memory devices are “first” and “second” in this configuration (*see CX-2727C at Q/A 1172*), the undersigned finds it clear that the “first memory devices” and “second memory devices” would be those which are stacked and share a set of data lines coming from the QBM switch, and must therefore respond alternately to chip-select signals so as to not cause data conflicts on their shared lines (*see RX-2006C at Q/A 1052*). Therefore, limitation 1c is met.

With respect to limitation 1d, Respondents contend the QBM Products render this element obvious. (RIB at 45 (citing *RX-2006C at Q/A 1054-1057*)). Upon review of the cited testimony and evidence, the undersigned finds that this element would have been obvious. Dr. Subramanian has persuasively shown that the QBM Products rely on QBM switches, each placed in the data path between the external memory controller and the memory devices. (*RX-2006C at Q/A 1055* (citing *RX-3206 at -279836*)). The evidence shows each QBM switch communicates on a set of eight data signal lines leading to the external memory controller, and two sets of eight data signal lines each leading to a memory device (two memory devices total, one from each rank). (*RX-3206 at -279836*)). Dr. Subramanian has persuasively explained that when two additional ranks are “stacked” on the two existing ranks, each memory device of the additional ranks would naturally share the set of data lines with the memory device they are stacked upon. (*RX-2006C at Q/A 1052*)). Dr. Baker does not dispute this limitation beyond a disagreement that it would have been obvious to add additional ranks of memory to the QBM Products. (*CX-2727C at Q/A 1182-1184*)). Therefore, limitation 1d is met.

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With respect to limitation 1e, Respondents contend the QBM Products render this element obvious. (RIB at 45 (citing RX-2006C at Q/A 1054-1057).) Upon review of the cited testimony and evidence, the undersigned finds that this element would have been obvious. Dr. Subramanian has persuasively explained how the QBM Switches present in the QBM Products respond to ME, W/R and BE signals sent from the Advanced Register to allow or disallow 8-bit data segments to be communicated between the external memory controller and each memory device connected thereto. (RX-2006C at Q/A 1057.) Dr. Baker does not meaningfully dispute this limitation. (CX-2727C at Q/A 1185-1187.) Therefore, limitation 1e is met.

With respect to limitation 1f, Respondents contend the QBM Products render this element obvious. (RIB at 45 (citing RX-2006C at Q/A 1058-1059).) Upon review of the cited testimony and evidence, the undersigned finds that this element would have been obvious. Dr. Subramanian has persuasively explained how the QBM Switches present in the QBM Products (which, when given additional ranks, connect to four memory devices each) used buffers on the DQ data lines (RX-3208 at -283984) such that the external memory controller only sees one load at the input pin of the switch (RX-3211 at -68717). Dr. Baker does not meaningfully dispute this limitation. (CX-2727C at Q/A 1188-1190.) Therefore, limitation 1f is met.

With respect to limitations 1g and 1h, there appears to be no dispute that the QBM Products render obvious limitations 1g, and 1h of independent claim 1. (See CIB at 69; CRB at 45-47.) In light of Dr. Subramanian's undisputed testimony on these limitations and claims (RX-2006C at Q/A 1060-1063), the undersigned finds that these elements would have been obvious. Therefore, limitations 1g and 1h are met.

With respect to dependent claim 2, Respondents contend it is perhaps "disclosed by, but at least obvious in light of" the QBM Products. (RIB at 45 (citing RX-2006 at Q/A 1064-1085, 1136-

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1157).) Upon review of the cited testimony and evidence, the undersigned finds that this claim would have been obvious in light of Amidi. Dr. Subramanian has persuasively explained how accomplishing the known technique of rank multiplication as disclosed in Amidi (RX-1432 at Figs. 6A, 8) would require a larger number of chip select signals sent to the increased number of memory devices as compared to the number of chip select signals received by the QBM Products' Advanced Buffer circuit (RX-2006C at Q/A 1065). Dr. Baker does not dispute rank multiplication's need for additional signals. (CX-2727C at Q/A 1191-1197.) Therefore, claim 2 is met.

With respect to dependent claim 3, Respondents contend it is perhaps "disclosed by, but at least obvious in light of" the QBM Products. (RIB at 45 (citing RX-2006 at Q/A 1064-1085, 1136-1157).) Upon review of the cited testimony and evidence, the undersigned finds that this claim is so disclosed. Dr. Subramanian has persuasively explained how the QBM Switch of the QBM Products presents a load equivalent to the load of one memory device despite having multiple memory devices connected to it; specifically, less than 3pF. (RX-2006C at Q/A 1067; RX-3208 at -283977; RX-3211C at -68717 ("System sees only 1 load at input of Switch pin.")) Dr. Baker does not meaningfully dispute this claim. (CX-2727C at Q/A 1198-1200.) Therefore, claim 3 is met.

With respect to dependent claim 4, Respondents contend it is perhaps "disclosed by, but at least obvious in light of" the QBM Products. (RIB at 45 (citing RX-2006 at Q/A 1064-1085, 1136-1157).) Upon review of the cited testimony and evidence, the undersigned finds that this claim would have been obvious. Dr. Subramanian has persuasively explained how, when rank multiplication is employed, stacked memory devices sharing a set of data lines must receive different chip select signals to avoid data conflicts. (RX-2006C at Q/A 1069.) Dr. Baker does not

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meaningfully dispute this need or this claim. (CX-2727C at Q/A 1201-1203.) Therefore, claim 4 is met.

With respect to dependent claim 5, Respondents contend it is perhaps “disclosed by, but at least obvious in light of” the QBM Products. (RIB at 45 (citing RX-2006 at Q/A 1064-1085, 1136-1157).) Upon review of the cited testimony and evidence, the undersigned finds that this claim would have been obvious. Dr. Subramanian has persuasively explained how a person of skill in the art would be motivated to design the QBM Switch, located between the memory devices and the external memory controller, such that the load presented to the memory devices is the same as the memory controller would present to avoid signal integrity issues due to mismatched loads. (RX-2006C at Q/A 1071; *see, e.g.*, RX-1436 at -48313.) Dr. Baker does not meaningfully dispute this claim. (CX-2727C at Q/A 1204-1206.) Therefore, claim 5 is met.

With respect to dependent claim 6, Respondents contend it is perhaps “disclosed by, but at least obvious in light of” the QBM Products. (RIB at 45 (citing RX-2006 at Q/A 1064-1085, 1136-1157).) Upon review of the cited testimony and evidence, the undersigned finds that this claim has not been shown to be obvious. While Dr. Subramanian has shown that the QBM Switches were one byte wide (RX-3206C at -279836) and explains that “it was well known at the time to use either four or eight bit wide memory devices to build 72 bit wide modules” (RX-2006C at Q/A 1073), the same QBM Products materials show memory devices which are also one byte (*i.e.*, 8 bits) wide (RX-3206C at -279836), his opinion on why a person of ordinary skill would use or try to use memory devices which were not also one byte wide (*i.e.*, “a second data width different from the first width”) is conclusory by only stating that such memory devices were known (*see* RX-2006C at Q/A 1073). This is not sufficient. *KSR*, 550 U.S. at 418 (“As is clear from cases such

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as *Adams*, a patent composed of several elements is not proved obvious merely by demonstrating that each of its elements was, independently, known in the prior art.”). Therefore, claim 6 is not met.

With respect to dependent claim 7, Respondents contend it is perhaps “disclosed by, but at least obvious in light of” the QBM Products. (RIB at 45 (citing RX-2006 at Q/A 1064-1085, 1136-1157).) Upon review of the cited testimony and evidence, the undersigned finds that this claim is so disclosed. The QBM Switches in the QBM Products are controlled by a “W/R” signal which controls the direction of data flow to the memory devices (as in a write operation) or from the memory devices (as in a read operation). (RX-3205 at *11, 12, 15; RX-3208C at -283990.) Dr. Baker does not meaningfully dispute this claim. (CX-2727C at Q/A 1212-1214.) Therefore, claim 7 is met.

With respect to dependent claim 8, Respondents contend the QBM Products disclose this claim. (RRB at 31 (citing RX-2006C at Q/A 1076-1077, 1148-1149).) Upon review of the cited testimony and evidence, the undersigned finds that this claim is disclosed. Dr. Subramanian testified that the “Command Scheduler” in the QBM Products’ Advanced Buffer uses the latency parameter set in the JEDEC mode register with bits A6-A4 to control QBM Switch timing. (See RX-2006C at Q/A 1077.) Netlist’s expert, Dr. Baker, does not dispute that the Advanced Buffer uses this parameter, only that control over the timing of signals sent to the QBM Switch does not mean control over the timing of the data signals passing through that switch. (CX-2727C at Q/A 1217.) The undersigned finds, however, that control over the timing of the QBM Switch’s status of read or write (the W/R signal) is control over the timing of the signal passing through that switch, analogous to the use of latency disclosed in the ’907 patent:

As is known, Column Address Strobe (CAS) latency is a delay time which elapses between the moment the memory controller 420 informs the memory modules 402 to access a particular column in a selected rank or row and the moment the data for or from the

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particular column is on the output pins of the selected rank or row. The latency may be used by the memory module to control operation of the data transmission circuits 416. During the latency, address and control signals pass from the memory controller 420 to the control circuit 430 which produces controls sent to the control logic circuitry 502 (e.g., via lines 432) which then controls operation of the components of the data transmission circuits 416.

....

For a write operation, during the CAS latency, the control circuit 430, in one embodiment, provides enable control signals to the control logic circuitry 502 of each data transmission circuit 416, whereby the control logic circuitry 502 selects either path A or path B to direct the data.

('907 patent at 15:52-16:2.) Therefore, claim 8 is met.

With respect to dependent claim 10, Respondents contend it is perhaps “disclosed by, but at least obvious in light of” the QBM Products. (RIB at 45 (citing RX-2006 at Q/A 1064-1085, 1136-1157).) Upon review of the cited testimony and evidence, the undersigned finds that this claim would have been obvious. As with claim 4, Dr. Subramanian has persuasively explained how stacked memory devices sharing a set of data lines must receive different chip select signals to avoid data conflicts. (RX-2006C at Q/A 1069, 1079.) Dr. Baker does not meaningfully dispute this need or this claim. (CX-2727C at Q/A 1201-1203, 1218-1220.) Therefore, claim 10 is met.

With respect to dependent claim 12, Respondents contend it is perhaps “disclosed by, but at least obvious in light of” the QBM Products. (RIB at 45 (citing RX-2006 at Q/A 1064-1085, 1136-1157).) Upon review of the cited testimony and evidence, the undersigned finds that this claim has not been shown to be obvious. As with claim 6, Dr. Subramanian has not explained why a person of ordinary skill would use or try to use memory devices which not the same bit width as the Advanced Buffer to which the memory devices are connected. (RX-2006C at Q/A 1073, 0181). Therefore, claim 12 is not met.

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With respect to dependent claim 14, Respondents contend it is perhaps “disclosed by, but at least obvious in light of” the QBM Products. (RIB at 45 (citing RX-2006 at Q/A 1064-1085, 1136-1157).) Upon review of the cited testimony and evidence, the undersigned finds that this claim is so disclosed. Dr. Subramanian testified that a person of ordinary skill would have understood from a QBM Switch Block Diagram that the QBM Switch includes tri-state buffers responsive to the “WR and RD signals.” (RX-2006C at Q/A 1083; *see* RX-3208C at -283984, -283985, 283988.) Dr. Baker does not meaningfully dispute this disclosure or claim. (CX-2727C at Q/A 1224-1226.) Therefore, claim 14 is met.

With respect to dependent claim 15, Respondents contend it is perhaps “disclosed by, but at least obvious in light of” the QBM Products. (RIB at 45 (citing RX-2006 at Q/A 1064-1085, 1136-1157).) Upon review of the cited testimony and evidence, the undersigned finds that this claim is so disclosed. The QBM Switch of the QBM Products is disclosed as being one byte (*i.e.*, 8 bits) wide with a corresponding 8-bit wide set of data signal lines leading to the external memory controller. (RX-3206C at -279836.) Dr. Baker does not meaningfully dispute this disclosure or claim. (CX-2727C at Q/A 1227-1229.) Therefore, claim 15 is met.

Accordingly, claims 1, 2, 3, 4, 5, 7, 8, 10, 14, and 15 have been shown to be obvious, and thus invalid, in light of the QBM Products and other prior art. Claims 6 and 12 have not been so shown.

c) Secondary Considerations

Netlist’s initial brief contends objective indicia of non-obviousness of the ’907 patent claims include: “(1) commercial success and licensing, (2) satisfaction of long-felt need, (3) failed attempts by others, (4) copying, (5) unexpected results, and (6) industry praise.” (CIB at 76 (citing CX-2727C at Q/A 1329-1357; JX-0030C at 144:1-147:25).) To show these considerations, Netlist

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primarily relies on the explanations of Dr. Baker, the alleged adoption of its patents by the JEDEC standardization group, and the development agreement it signed with Samsung. (*See id.* at 76-77 (citations omitted).) Netlist's reply brief briefly addresses this topic, only arguing that "there is no holding in the 1023 [Investigation] that would establish that its claims are not essential to JEDEC standards" and, as shown in other sections, "the '907 Claims map to JEDEC DDR4 LRDIMM Standards." (CRB at 47 (citing CX-2727C at Q/A 1345-1348).)

Respondents dispute the existence of any of these considerations and assert that "[s]econdary considerations must result from what is claimed and what is novel in the claim, otherwise there is no nexus." (RIB at 46 (citing *In re Huai-Hung Kao*, 639 F.3d 1057, 1068 (Fed. Cir. 2011)).) Respondents argue no such nexus has been shown. (*Id.*; *see* RRB at 33-34.) In particular, Respondents claim "load reduction," "rank multiplication," and "distributed buffers" were known in the prior art. (RIB at 46-47 (citing RX-2006C at Q/A 1202-1203; Hong, Tr. at 137:24-138:10; RX-2599 at *5041-5134); *see* RRB at 33 (citing RX-2006C at Q/A 1213).) Respondents add that "[e]vidence regarding HybriDIMM is likewise irrelevant, at least because any alleged success was due to flash memory aspects that are not covered by the 907 claims." (RIB at 47 (citing RX-2006C at Q/A 1222-1225); RRB at 33.) Regarding JEDEC standards, Respondents assert that "Netlist never proposed anything to JEDEC, and instead was trying to distinguish its products from the standard." (*Id.* (citing RX-2006C at Q/A 1205-1209); *see* RRB at 32 (citing RX-2006C at Q/A 133-136).) As to commercial success, Respondents' reply brief states "the overwhelming majority of the 'multi-billion-dollar' memory module market referenced by Netlist is properly attributed to the DRAM chips (and other related intellectual property), not the aspects of the accused RCD and Data Buffers allegedly practiced by the 907 patent." (RRB at 33 (citing RX-2006C at Q/A 1197-2000).)

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The Staff agrees secondary considerations do not support non-obviousness in this investigation. (SIB at 76.) The Staff particularly agrees that “the problem to be solved, and motivation and manner of combining distributed buffers with the known RDIMM architecture (and/or Amidi’s chip-select structure and function) is strongly taught in the prior art references – per Netlist’s own characterization of the references.” (*Id.* at 77.)

Upon review of Dr. Baker’s testimony on this issue, and the evidence cited therein, the undersigned finds little connection, or “nexus,” to the invention of the ’907 patent and Netlist’s proposed considerations so as to outweigh the above determinations of obviousness. First, with the exceptions of licensing and industry praise, these considerations largely turn on accepting Netlist’s assertion that the ’907 patent was adopted or incorporated into the standard, and it was that “standardization” that led to all the commercial success LRDIMMs encountered in the market. (*See* CIB at 76-77; CX-2727C at Q/A 1333, 1339-1340, 1344, 1345-1348, 1350-1352.) The only feature of the ’907 patent claims mentioned in Netlist’s briefs as supposedly causing this chain of events, however, is “Netlist’s distributed buffer architecture and related technology.” (CIB at 77.) The above invalidity analysis shows this (along with load isolation stemming from the use of buffers) was a known feature, and Netlist’s CEO could not dispute this fact at the hearing. (Hong, Tr. at 137:5-138:10 (“Q. And let’s put [QBM Products disclosure] up side by side. Let’s pull up CDX-2001, your witness statement, and RX-3205. And, in fact, it shows the same distributed buffer architecture you said in your witness statement Netlist invented; right? A. Yes.”).) Thus, contrary to Dr. Baker’s claim of “JEDEC knew of Netlist’s innovative distributed buffer technology taught by the ’907 patent prior to incorporation, and incorporated it anyway” (CX-2727C at Q/A 1346), the evidence shows it is more likely the JEDEC organization (comprised of persons of ordinary skill in the art) knew of distributed buffer technology prior to Netlist’s ’907

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patent. Indeed, the evidence shows Netlist was not the agent who supplied this proposal to the DDR4 working groups. (*See* RIB at 47 (citing RX-2006C at Q/A 1205-1209); *see* RX-2006C at Q/A 136; JX-0044C at 180:10-181:4; JX-0027C at 118:14-20; JX-0028C at 276:1-5; JX-0030C at 35:1-14, 153:1-11; JX-0035C at 39:3-19; JX-0039C at 25:20-26:21.)

As to licensing, Netlist points to its Samsung agreement (CIB at 76), but again, there is no showing that any substantive portion of the consideration paid by Samsung can be attributed to the '907 patent, as opposed to other members of its patent portfolio or even to the joint-development aspects of that agreement. Additionally, Netlist mentions other "industry participants have shown a willingness to license Netlist's patents," but there is no mention of these entities or how far that willingness goes in the evidence cited. (*See* CIB at 76 (citing CX-2727C at Q/A 1330-1334).)

As for praise from others, Netlist points to a variety of documents and articles "prais[ing] the performance that Netlist's distributed buffer architecture and related technology allowed" (CIB at 77); but, again, "distributed buffer architecture" cannot be said to be "Netlist's." Moreover, Dr. Baker provides no more than an identification of titles for a majority of the cited publications. (*See* CX-2727C at Q/A 1356.) For those remaining documents, Dr. Baker does not sufficiently explain a connection between the subject matter of the praise and features of the '907 patent claims. (*See id.* at Q/A 1355 (citing CX-0821; CX-0827; CX-0838).) These articles also appear to be reprints of Netlist-issued press releases, as opposed to outside evaluations, as all three contain safe harbor statements concerning "our products" such as "HyperCloud™." (*See* CX-0821; CX-0827; CX-0838.)

Accordingly, the undersigned does not find sufficient secondary considerations of non-obviousness have been shown so as to disturb the above determinations of obviousness.

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3. Written Description

In addition to obviousness, Respondents contend Netlist's "straight-line" interpretation of independent claim 1 of the '907 patent, all asserted claims are invalid for lack of written description under 35 U.S.C. § 112 (pre-AIA). (RIB at 47-50.) Specifically, Respondents argue "the specification only provides support for a 'fork in the road' layout, where data is sent to one 'fork' and not the other 'fork.' . . . Netlist's proposed construction (adopted by ALJ Pender), however, essentially covers just one 'fork,' as shown here, and ignores the other 'fork.'" (*Id.* at 48.) To explain, Respondents provide an unnumbered demonstrative showing an annotated version of Figure 4A of the '907 patent. (*Id.*) Even more specifically, Respondents argue:

Netlist's claim construction (adopted by ALJ Pender) has two problems: First, there is no written description for preventing data sent to the "first memory device" (*e.g.*, 412A above) from also being received (and acquired) by the "second memory device" on the same fork (*e.g.*, 412C above). *See* RX-2006C at Q/A 90–91, 162–66, 170–74. Instead, the patent repeatedly discloses that data sent to 412A is also received by 412C. *See id.* at Q/A 90–91; RX-3869C at Q/A 37–39. According to the patent, it is 412B and 412D (not 412C) that do not receive any data sent to 412A. *See supra* p. 13 (annotating Figure 4A to show what is actually disclosed by the patent).

Second, there is no written description for any embodiment *without* the "fork in the road." RX-2006C at Q/A 54–123, 162, 171–74. Under relevant case law, the fork in the road layout "permeates the entire patent" and there is "no hint or discussion" of a straight line configuration without a fork in the road. *Rivera v. Int'l Trade Comm'n*, 857 F.3d 1315, 1320 (Fed. Cir. 2017) (affirming invalidity for lack of written description). It is improper as a matter of law to ignore one of the "forks" in Figure 4A above, as done by Netlist, because there must be written description for the *full scope* of the claim, which according to Netlist includes a layout with *only* the "straight line" and no "fork in the road" whatsoever—a configuration entirely missing from the figures and written description of the 907 patent. *See, e.g., ICU Med., Inc. v. Alaris Med. Sys., Inc.*, 558 F.3d 1368, 1376–79 (Fed. Cir. 2009) (affirming lack of written description under § 112 where specification only disclosed a device with a "spike" but the claim tried to cover devices without a "spike"); *LizardTech, Inc. v. Earth Resource Mapping, Inc.*, 424 F.3d 1336, 1344–47 (Fed. Cir. 2005) (affirming lack of

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written description under § 112 where the claim tried to cover two embodiments but the specification only described one of them).

(*Id.* at 48-49.) Respondents add that the specification of U.S. Patent No. 8,417,870 (referred to as “the ’131 Application”) (RX-2389), which the ’907 patent claims priority to, lacks written description for other limitations. (*Id.* at 50-51.)

In their reply brief, Respondents repeat an assertion from the Staff that the *Markman* order in this investigation (Order No. 17) somehow “only found support for [the straight line] construction in the claim language itself (amended in 2016), and not in the written description filed in 2009 (or even 2010) as required by § 112” for the “receive / do not . . . receive” limitation. (RRB at 34 (citing RIB at 47-48; SIB at 79-80).) With respect to the possible support provided by Figures 3A and 4A, Respondents contend:

Figures 3A and 4A do not provide written description for two reasons: they both require buffer 416, which creates the “fork in the road,” and they both teach that data sent to 412A is also received by 412C. *See* RPostHB at 13, 48-49. According to the patent, it is 412B and 412D (not 412C) that do not receive any data sent to 412A. *See id.* at 13. Netlist argues that the “chip select” signal prevents data from being *written* to 412C, *see* CPostHB at 73, but as repeatedly pointed out by the Staff, Netlist disclaimed the “chip select” signal and “writing” as sufficient to satisfy the claims, *see* SPostHB at 6, 29, 43, 79; RX-2437.00025 (“Netlist . . . is not seeking to construe ‘output or receive’ as ‘perform the memory read or write command.’”). Instead, the claim construction (“acquire”) depends on the *internal* operations of the memory devices, for which there is no written description. *See* RPostHB at 50.

(RRB at 34.) Respondents dispute that the knowledge of one skilled in the art can provide the missing description. (*Id.* at 35 (citing *Rivera*, 857 F.3d 1322).) Respondents conclude with “[h]ere, there is no disclosure in the patent whatsoever about the internal operations of the DRAM, as Netlist’s experts have conceded” (*id.* (citing RIB at 50; RX-2006C at Q/A 165; Levitt, Tr. at 413:23-414:4; Baker, Tr. at 824:2-21)) and “[t]he inventors did not have in mind – and did not describe in their patent – data going to 412A but *not* being ‘acquired’ by 412C” (*id.*). Regarding

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priority to the '131 Application, Respondents generally argue there is no disclosure therein for both address *and* control signals generated by a module controller, and Figure 3 of that application is a mere “schematic” which cannot function to disclose “physical location” of the buffers. (*See id.* at 35-36.)

The Staff appears to agree with Respondents in that “the disclosures of the '907 patent do not reasonably convey to a person of ordinary skill in the art that the inventor was in possession of the invention as claimed in the final issue '907 patent as construed (*i.e.* applied for the infringement analysis) in this investigation.” (SIB at 78-79 (citing *Ariad Pharm.*, 598 F.3d at 1353-54).) As mentioned above, the Staff views the *Markman* order in this investigation (Order No. 17) as itself “discuss[ing] lack of written description support for the correlation of ‘do not . . . receive’ to known chip-select signals.” (*Id.* at 79-80 (citing Order No. 17 at 25-27, 37-38).) The Staff also appears to condition a finding of adequate written description on obviousness in light of the Amidi reference. (*See id.* at 80; SRB at 21-22.) Apart from this limitation, the Staff appears to find adequate written support for the “produce” claim limitation (*see* SIB at 81) and the limitation regarding buffer circuit location (*id.* at 81-82.)

Netlist disputes a lack of written description and views Respondents as arguing “if that single structural element of one of multiple embodiments described in the specification of the '907 Patent—a buffer circuit that performs the selection of which memory devices should be read from or written to—is not included in the claims, they necessarily lack a sufficient written description.” (CIB at 72 (citing *CX-2727C* at Q/A 91).) Netlist asserts this is opposite to the law which “start[s] with the claims and determin[es] whether the specification ‘reasonably conveys to those skilled in the art that the inventor had possession of the claimed subject matter as of the filing date’” which “can be satisfied by ‘words, structures, figures, diagrams, formulas, etc.’” (*Id.* at 72-73 (citing

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Ariad, 598 F.3d at 1351; *Lockwood v. Am. Airlines, Inc.*, 107 F.3d 1565, 1572 (Fed. Cir. 1997)).) Netlist continues, “[a] embodiment fully disclosed throughout the specification and figures is the ‘straight line’ configuration covered by the asserted claims.” (*Id.* at 73 (citing CX-2727C at Q/A 95; ’907 patent at Figs. 3A, 4A, 17:5-8; Subramanian, Tr. at 643:23-647:16).) In its reply brief, Netlist explains how Figure 4A in particular discloses first memory devices 412A and second memory devices 412C in a straight line configuration and argues Respondents’ “red X” annotation of this figure (discussed above (*see* RIB at 48)) is a poor attempt to hide what is clearly disclosed (CRB at 50).

As for the claims’ implication of internal workings of memory devices, Netlist argues that “there is no requirement to describe every detail of a feature or component that is already within the knowledge of a person of ordinary skill in the art.” (CIB at 74 (citing *LizardTech, Inc. v. Earth Resource Mapping, Inc.*, 424 F.3d 1336, 1345 (Fed. Cir. 2005)).) Netlist observes that all experts “testified that a POSITA would know how to use the memory devices discussed in the ’907 Patent and be familiar with the relevant JEDEC specifications for those devices.” (*Id.* (citing Baker, Tr. at 825:15-826:10; Levitt, Tr. at 464:11-25, 465:13-466:13; RX-2006C at Q/A 50).) Regarding priority to the ’131 Application, Netlist claims that application provides adequate written description for all asserted claims so as to enable the claim of priority. (*Id.* at 74-75 (discussing limitations [1b] and [1f]); *see* CRB at 52.)¹⁰

Here, the undersigned finds neither Respondents nor Staff have presented a clear and convincing case of lack of written description. To begin, Respondents’ initial briefing barely even identifies which claim limitation supposedly lacks support. (*See* RIB at 47-48, 49-50 (discussing

¹⁰ It is assumed that if Netlist’s claim limitation numbering scheme is used here, it is actually limitation [1h] which recites “corresponding limitations.” (*Compare* RIB at 51 *with* CIB at xx.)

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issue in terms of “straight line” or “fork in the road” themes).) It is only in a paragraph on page 48 of Respondents’ brief when data “being received (and acquired)” is mentioned (RIB at 48) that the undersigned can infer the limitation at issue is “receive / do not receive” as found in independent claim 1—designated by Netlist as limitation 1c (*see* CIB at xx).¹¹ Respondents’ reply brief fortunately confirms this inference as it places its written description analysis under a heading of “a. ‘receive / do not . . . receive.’” (RRB at 34.)

With this limitation in mind, it is the undersigned’s view that Order No. 17 settled the issue. That order ultimately determined that the specification’s discussion of chip-select signals (including the disclosures of the ’386 and ’537 patents incorporated by reference) matched the claims’ use of “receive / do not receive” so as to make it proper to construe the term based on that known feature:

The phrase “memory devices responding . . . by receiving” strongly indicates that “receiving” is something the memory devices do rather than a result of some other external act. (*See* CIMB at 28; CRMB at 18-20.) Netlist’s chip-select explanation matches this language while Respondents’ “fork in the road” interpretation does not. It is undisputed that the “fork in the road” effect is due to the action of buffer circuits, or data transmission circuits, *apart* from the memory devices. (*See* CIMB at 13-14; RIMB at 35-38.) I find here especially—the claims’ own use of the term is highly instructive, perhaps the most instructive, piece of intrinsic evidence on the term’s meaning. *Phillips*, 415 F.3d at 1314.

....

Each of [claims 2, 4, and 10] elaborates on the “first module control signals” introduced in claim 1 and which cause the first and second memory devices to “output or receive / do not output or receive” data. (*Id.* at cl. 1.) Notably, each of these claims focuses on chip-select signals which the ’386 and ’537 patents (incorporated by

¹¹ For example, following Order No. 17, it is the undersigned’s view that the “straight line” or “fork in the road” dichotomy is more closely linked to the “configured to isolate memory device load” limitation (limitation 1f) than the “receive / do not receive” limitation (limitation 1c). (*See, e.g.*, Order No. 17 at 89-90 (discussing Respondents’ “fork in the road” interpretation); 1023 ID at 124 (linking claim term “selective isolation” to “fork in the road”).)

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reference into the '907 patent) teach are sent to the memory devices and the memory devices respond to—not the buffer circuits. (*See* '386 patent at Fig. 1A, 7:45-8:45; '537 patent at Fig. 9A, 16:59-18:3.) Respondents confirm the connection between the “first module control signals” (which controls the “output or receive / do not output or receive”) and chip-select signals through their argument on the claim term “produce.” (*See* RIMB at 25-29.)

(Order No. 17 and 27-28; *see id.* at 33-34 (further discussing '386 and '537 patents discussions of chip-select signals).)

Based on this reliance on the disclosures of chip-select signals in the '907 patent and the '386 and '537 patents incorporated therein on this very feature (*see* '907 patent at 10:39-45 (“The control circuit 430, 430' may produce additional chip-select signals or output enable signals based on address decoding. Examples of circuits which can serve as the control circuit 430, 430' are described in more detail by U.S. Pat. Nos. 7,289,386 and 7,532,537, each of which is incorporated in its entirety by reference herein.”)) in order to construe “receive / do not receive,” the undersigned finds the argument that the '907 patent lacks written description for the as-ordered construction of the term is not persuasive. Thus, the undersigned finds no clear and convincing evidence that the '907 patent does not comply with the written description requirement of 35 U.S.C. § 112.

With respect to Respondents' claim that the '131 Application does not provide adequate written description so as to support Netlist's claim of priority (RIB at 50-51), the undersigned does not understand the relevance of this issue. It does not appear that any party has asserted that the prior art status of those references Respondents and the Staff apply against the '907 patent turns on the '907 patent's effective date of invention. (*See* RIB at 50-51; RRB at 35-36; CIB at 74-75; CRB at 52; SIB at 15-16; *see generally* SRB.) The undersigned therefore finds it is not necessary to determine the question of whether the asserted claims of the '907 patent can properly claim priority to the filing date of the '131 Application.

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VI. DOMESTIC INDUSTRY – ECONOMIC PRONG

Netlist argues that an economic domestic industry exists¹² as evidenced by its significant and substantial domestic investments directed to its HybriDIMM products¹³, including [REDACTED] in plant and equipment, [REDACTED] in labor, and [REDACTED] in research and development. (CIB at 97 (citing CX-2006C at Q/A 24, 28, 72, 73-75).) According to Netlist, this amounts to [REDACTED] [REDACTED] which is a tremendous amount for a company of its size. (*Id.* at 96.) Netlist submits that to determine its investment incurred specifically for the HybriDIMM products, it calculated the “HD Ratio,” which “is a measure of the percentage of Netlist’s overall R&D investments in HybriDIMM as compared to its overall R&D investments.”¹⁴ (*Id.* at 97 (citing CX-2006C at Q/A 30-31, 43-69, 76).) Netlist therefore argues that using the “HD Ratio,” it invested over [REDACTED] of its total engineering expenses in HybriDIMM in 2015, nearly [REDACTED] in 2016, and [REDACTED] for January 2017 to August 2017. (*Id.*)

Netlist submits that it first publicly demonstrated the HybriDIMM in August 2016 and has since conducted numerous public and private demonstrations. (*Id.* at 96 (citing CX-2001C at Q/A 129-133).) Netlist further submits that it [REDACTED]

¹² Netlist does not argue that a domestic industry “is in the process of being established.” (See CIB at 94-102; CRB at 68-71.)

¹³ While Netlist contends that it started to focus development efforts on the ASIC version of the HybriDIMM product in 2017, it represented that it is not relying on that version to satisfy the domestic industry requirement. (See CIB at 96 n.11; RX-3810C at *12 (“Netlist is solely relying on the FPGA version to satisfy the domestic industry requirement”).) Therefore, the undersigned considers Netlist’s investments with respect to its FPGA HybriDIMM products and references to “HybriDIMM” herein refer to those FPGA HybriDIMM products.

¹⁴ Netlist claims that “[t]he HD Ratio also allocates the salaries of employees in the U.S. who directly and materially support Netlist’s efforts in developing and commercializing HybriDIMM.” (*Id.* (citing CX-2006C at Q67-69).)

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[REDACTED] (*Id.* (citing CX-2001C at Q/A 132-33).) Netlist therefore asserts that the HybriDIMM is “commercially viable.” (*Id.*) Netlist argues that contrary to Respondents’ position, there is no requirement that a domestic industry article be commercialized and that “the Commission has expressly held that non-commercial articles can provide the basis for a domestic industry.” (CRB at 68-69 (citing *Certain Non-Volatile Memory Devices and Products Containing the Same*, Inv. No. 337-TA-1046, Comm’n Op. at 41 (Oct. 26, 2018); *Certain Computers and Computer Peripheral Devices, and Components Thereof and Products Containing Same*, Inv. No. 337-TA-841, Comm’n Op. at 40 n.30 (Jan. 9, 2014)).)

Respondents argue that Netlist’s HybriDIMM product [REDACTED]

[REDACTED] (RIB at 84 (citing RX-3871C at Q/A 59-68).)

Respondents further argue that Netlist [REDACTED] (*Id.* (citing RX-3871C at Q/A 60; JX-2008C at 60:4-61:11; RX-2197 at *8; JX-2012C at 17:22-18:25).) Respondents therefore submit that by the end of 2016, [REDACTED] (*Id.* at 84-85 (citing JX-2013C at 14:1-15:6, 20:15-21:15; Whitley, Tr. at 221:6-17; RX-3871C at Q/A 48-50, 62).)

According to Respondents, at the end of 2017, [REDACTED]

[REDACTED] (*Id.* at 85 (citing Sasaki, Tr. at 240:20-244:22).)

Respondents claim that Netlist has [REDACTED]

[REDACTED] (*Id.* (citing Hong, Tr. at 177:4-14; 284:19-285:11; RX-3871C at Q/A 64; JX-2017C at 35:6-37:21).) For example, Respondents

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assert that at the evidentiary hearing in the 1023 Investigation, Netlist's CEO testified that its

[REDACTED] (Id. at 85-86 (citing RX-3772C at Q/A 137; RX-3771C at Q/A 32; JX-0030C at 115:1-3).) Respondents, however, contend that [REDACTED]

[REDACTED] (Id. at 86 (citing Hong, Tr. at 179:6-185:9; RX-3775C at *9; RX-3776C at *3).) Thus, Respondents argue that the HybriDIMM product is not [REDACTED]

[REDACTED] (Id.)

Respondents also argue that Netlist's economic prong evidence terminates in May 2017 and therefore it cannot show that its purported domestic industry for the HybriDIMM was in existence as of the filing date of the complaint. (RRB at 57.) Respondents claim that [REDACTED]

[REDACTED] (Id. at 58 (citing RX-3871C at Q/A 64; JX-2017C at 35:6-37:21; JX-2014C at 20:23-23:16).) Respondents further contend that Staff's position is not supported by the case law cited by Staff because the conditions for finding a domestic industry in those cases are missing here. (Id. at 59-60 (citing SIB at 99).)

Staff submits that from 2014 to August 2016, the evidence shows a domestic industry. (SIB at 96; SRB at 27.) Staff asserts that as early as May 2017, engineers were splitting time between the FPGA version of the HybriDIMM product and other versions. (SIB at 96 n.58 (citing Milton, Tr. at 297:18-23).) Staff also asserts that Netlist's specific work on the LRDIMM portion of the FPGA version of the HybriDIMM was completed by August 2016. (Id. at 97 (citing CX-2001C at Q/A 131-32; CX-2005C at Q/A 8, 11; RX-3871C at Q/A 43, 49).) Staff therefore argues that considering the time period from January 2014 to August 2016, the evidence shows that Netlist

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satisfies the economic prong of the domestic industry requirement under all three subsections. (*Id.* at 98.)

Staff disagrees with Respondents' argument regarding commercialization even though the evidence shows that [REDACTED] (*Id.* (citing *Certain Non-Volatile Memory Devices and Products Containing the Same*, Inv. No. 337-TA-1046, Comm'n Op. at 41-42 (Oct. 26, 2018)).) Staff also argues that even though Netlist completed work on the LRDIMM portion of the HybriDIMM before the filing of the complaint, the Commission has previously determined that a domestic industry can be found based on past activities and has rejected the argument that investments in a discontinued product cannot form the basis for an existing domestic industry. (*Id.* at 98-99 (citing *Certain Electronic Digital Media Devices and Components Thereof*, Inv. No. 337-TA-796, Comm'n Op. at 99-102 (Sept. 6, 2013); *Certain Variable Speed Wind Turbines and Components Thereof*, Inv. No. 337-TA-376, Comm'n Op. at 25 (Sept. 23, 1996)).) Lastly, Staff contends that Respondents' nexus argument should be rejected because "[w]hile the evidence does not show that the HybriDIMM product practices claims of either of the Asserted Patents, to the extent it is found otherwise, the evidence shows that the HybriDIMM embodies the inventions of the Asserted Patents (*i.e.* JEDEC Standard Compliant DDR4 LRDIMM)." (*Id.* at 99.)

As an initial matter, Respondents fail to present compelling argument or legal authority to conclude that commercial availability of a patented article in the United States is required to show that a domestic industry exists. For example, in *Certain Non-Volatile Memory Devices*, the Commission stated that the term "article" in section 337(a)(2) "is sufficiently capacious to embrace pre-commercial or non-commercial items." *Certain Non-Volatile Memory Devices*, Inv. No. 337-TA-1046, Comm'n Op. at 41 (Oct. 26, 2018). Similarly, in *Certain Road Construction Machines*,

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the administrative law judge determined, and the Commission did not review, that there was no requirement that articles be commercialized to satisfy the domestic industry requirement. *See Certain Road Construction Machines and Components Thereof*, Inv. No. 337-TA-1088, Initial Determination at 71-79 (Feb. 14, 2019); *Certain Road Construction Machines*, Notice of Comm'n Determination to Review-in-Part a Final Initial Determination at 2 (Apr. 12, 2019).

In this Investigation, the evidence shows that the HybriDIMM product is complete and [REDACTED] [REDACTED] (CX-2001C at Q/A 132; CX-2006C at Q/A 26.)

Additionally, the evidence shows that Netlist [REDACTED] [REDACTED] [REDACTED] (CX-2001C at Q/A 132.)

However, even if Netlist [REDACTED] as Respondents allege, the undersigned finds no requirement for the HybriDIMM to be commercialized in order to satisfy the domestic industry requirement. Accordingly, the undersigned finds that the HybriDIMM product is an article subject to an existing domestic industry.

As to the relevant time period, subsections 337(a)(3)(A) and (B) “concern investments in plant and equipment and labor and capital ‘with respect to the *articles* protected by the patent.’” *Certain Ground Fault Circuit Interrupters and Products Containing Same*, Inv. No. 337-TA-739, Comm’n Op. at 78 (Jun. 8, 2012) (emphasis in original) (citing 19 U.S.C. §§ 1337(a)(3)(A), (B); *Certain Unified Communications Systems, Products Used With Such Systems, & Components Thereof*, Inv. No. 337-TA-598, Order No. 9 (Sept. 5, 2007)). In contrast, the phrase “investment in its exploitation” in subsection 337(a)(3)(C) refers to the asserted patent or other intellectual property right being asserted and requires the complainant to establish a nexus between the asserted patent and the U.S. investment in its exploitation. *Certain Integrated Circuit Chips and Products Containing the Same*, Inv. No. 337-TA-859, Comm’n Op. at 36-38 (Aug. 22, 2014).

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The evidence shows that Netlist began investing in engineers dedicated to working on HybriDIMM in 2014. (CX-2006C at Q/A 24, 28; CX-2312C at *138.) Netlist asserts that the LRDIMM portion of the HybriDIMM product is the portion that practices the Asserted Patents and the evidence shows that Netlist's specific work on the LRDIMM portion was completed by August 2016. (See CIB at 54, 93, 95; CRB at 29-30, 65-66; CX-2005C at Q/A 11; RX-3871C at Q/A 43; CX-2001C at Q/A 131; RX-3772C at Q/A 131.) According to Netlist's vice president of engineering, the work on the FPGA HybriDIMM was completed around August 2017. (JX-2013C at *9-10.) Accordingly, as to subsections 337(a)(3)(A) and (B), Netlist's relevant investments in the HybriDIMM (*i.e.*, the article) would be from 2014 to August 2017. As to subsection 337(a)(3)(C), however, Netlist's relevant investments would be from 2014 to August 2016 when investments were made with respect to the LRDIMM portion of the HybriDIMM, which allegedly was the portion that practices the Asserted Patents.

Additionally, the undersigned finds Respondents' argument that Netlist cannot show a domestic industry at the time the complaint was filed unpersuasive. The Commission has stated that "a domestic industry can be found based on complainant's past activities in exploiting the [asserted] patent." *Certain Variable Speed Wind Turbines and Components Thereof*, Inv. No. 337-TA-376, Comm'n Op. at 25 (Sept. 23, 1996) (emphasis in original) (noting that it had only been several months since the complainant was exploiting the asserted patent). Additionally, the Commission has previously rejected the argument that investments in a discontinued product cannot form the basis of an existing domestic industry. *Certain Electronic Digital Media Devices and Components Thereof*, Inv. No. 337-TA-796, Comm'n Op. at 99-102 (Sept. 6, 2013).

Here, the evidence shows Netlist's investments in HybriDIMM from 2014 to August 2017, when work on HybriDIMM was completed. (See CX-2006C; JX-2013C at *9-10; RX-3871C at

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Q/A 49.) In addition, the evidence shows that at least as of 2018, Netlist was in the process of demonstrating HybriDIMM, negotiating purchase orders for HybriDIMM, and manufacturing HybriDIMM. (See CX-2001C at Q/A 131-132, 176.) Therefore, because the complaint was filed only a few months after Netlist completed work on the HybriDIMM, Netlist made significant investments in HybriDIMM (as discussed below), and because the evidence shows that Netlist continued to invest, albeit more modestly than before, in the HybriDIMM after August 2017, Netlist's investments in the HybriDIMM satisfy the existence of a domestic industry. See *Certain Variable Speed Wind Turbines*, Comm'n Op. at 25; *Certain Electronic Digital Media Devices*, Comm'n Op. at 99-102.

A. 337(a)(3)(A) – Significant Investment in Plant and Equipment

Netlist contends that it has made significant investments in plant and equipment within the U.S. in direct connection with its HybriDIMM products. (CIB at 99.) Netlist asserts that between January 2014 and the filing of the complaint in this Investigation, it used an average of [REDACTED] square feet in connection with its HybriDIMM products, invested a total of [REDACTED] in facility costs, and invested [REDACTED] in equipment. (Id. (citing CX-2006C at Q/A 70-72).) Netlist claims that since November 2013, its California headquarters comprised at least 8,203 square feet and the vast majority of research and development for the HybriDIMM products occurred in that facility. (Id. at 99-100 (citing CX-2006C at Q/A 13, 71).)

Netlist calculated the allocation of investments in its domestic facilities by taking the number of HybriDIMM engineers and dividing it by the total headcount of U.S. employees ("Headcount Percentage"). (Id. at 100 (citing CX-2006C at Q/A 30, 70-72).) Netlist claims that from 2014 through August 2017, the annual Headcount Percentages for its HybriDIMM products were [REDACTED] (Id. (citing CX-2006C at Q/A 72).) Netlist explains that

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Staff¹⁵ agrees with Netlist that it has made significant investments in plant and equipment in the United States with respect to the HybriDIMM. (SIB at 100.) Staff claims that Netlist's facilities are located in Irvine, California where the research and development of the HybriDIMM occurred, including [REDACTED] (*Id.*) Staff also claims that Netlist made investments in equipment employed in the research and development of the HybriDIMM at its facilities in Irvine, including [REDACTED] [REDACTED] [REDACTED] expenses relating to the HybriDIMM are significant, both quantitatively and qualitatively, based on the modest size of Netlist as a company and the relative importance of the FPGA version of HybriDIMM to Netlist's business. (*Id.* (citing CX-2001C at Q/A 51-54; 60-61, 147; CX-2006C at Q/A 23-24, 71-73; 1023 ID at 155).)

Based on the evidence presented, the undersigned finds that Netlist has shown that it satisfies the economic prong of the domestic industry requirement based on significant investments in plant and equipment.¹⁶ The evidence shows that from 2014 to August 2017, Netlist invested [REDACTED] in facilities costs in connection with the HybriDIMM product, which includes lease payments, property taxes, general insurance, utilities, and repairs and maintenance. (CX-2006C at Q/A 72; CX-2312C at 140.) The evidence also shows that from 2014 to August 2017, Netlist

¹⁵ Respondents do not present arguments specifically addressing plant and equipment investments for the HybriDIMM product. (*See* RIB at 83-94; RRB at 56-60.)

¹⁶ Contrary to Netlist's assertion (*see* CRB at 71), the undersigned finds that in this case, Netlist's investments made in connection with R&D activities cannot be placed in the labor or capital and plant and equipment categories. In outlining Netlist's investments in R&D, Netlist's own witness states that it "made expenditures related to R&D of HybriDIMM *other than in labor, facilities, and equipment.*" (CX-2006C at Q/A 74 (emphasis added).) Therefore, it would not be appropriate to include these expenditures in subsections 337(a)(3)(A) or (B).

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invested at least [REDACTED]¹⁷ in capital and equipment costs attributable to HybriDIMM engineering. (CX-2006C at Q/A 73; CX-2312C at 142.) This amounts to a total investment in plant and equipment of [REDACTED] from 2014 to August 2017 related to HybriDIMM. The undersigned agrees with Netlist and Staff that those investments are significant within the meaning of section 337(a)(3)(A) based on Netlist's modest size as a company and the relative importance of the HybriDIMM product to Netlist's overall business.¹⁸ (See CX-2006C at Q/A 24, 72-73; see also SIB at 98 n.60; *Certain Printing and Imaging Devices and Components Thereof*, Inv. No. 337-TA-690, Comm'n Op. at 27 (Feb. 17, 2011) (citing *Certain Stringed Musical Instruments*, Inv. No. 337-TA-586, Comm'n Op. at 26 (May 16, 2008)).) Accordingly, the undersigned finds that Netlist has made significant investments in plant and equipment with respect to HybriDIMM, and thus, has satisfied the economic prong of the domestic industry requirement for the Asserted Patents pursuant to subsection 337(a)(3)(A).

B. 337(a)(3)(B) – Significant Employment of Labor or Capital

Netlist contends that between January 2014 and the filing of the complaint, it “invested at least [REDACTED] in labor for individuals working directly on FPGA HybriDIMM R&D, or providing necessary support to that effort.” (CIB at 97 (citing CX-2006C at Q/A 24); CX-2312C at *138.) Netlist explains that it categorizes employees as working on specific projects or products, tracked by department code. (*Id.* at 97-98 (citing JX-2031C at *160; CX-2006C at Q/A 29-30).)

¹⁷ The undersigned notes that while Ms. Sasaki testified that this amount was [REDACTED] the exhibit cited in her testimony shows the amount to be [REDACTED] (Compare CX-2006C at Q/A 73, with CX-2312C at 142.)

¹⁸ In addition, even if viewed conservatively and the investments made in 2017 are disregarded, Netlist still made significant investments in plant and equipment amounting to [REDACTED] (i.e., [REDACTED] in facilities costs and [REDACTED] in capital and equipment costs) from [REDACTED] (See CX-2006C at Q/A 72; CX-2312C at 142.)

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Netlist claims that it hires engineers specifically to work on certain products and once hired, typically work only on that product while at Netlist. (*Id.* at 98 (citing CX-2006C at Q/A 29-30).) Netlist therefore asserts that “engineers assigned to HybriDIMM in the U.S. prior to the filing of the complaint spent virtually all of their time working on the FPGA HybriDIMM.” (*Id.* (citing CX-2006C at Q/A 30-31, 44-66).)

According to Netlist, around the time of filing the complaint, it employed [REDACTED] in the U.S. (29 at Netlist’s headquarters in Irvine) and [REDACTED] of those employees were engineers dedicated to working on the FPGA version of HybriDIMM. (*Id.* (citing CX-2006C at Q/A 16, 65).) Netlist contends that since 2014, it employed [REDACTED] people in the U.S. ([REDACTED] [REDACTED]). (*Id.* (citing CX-2006C at Q/A 16).) Netlist argues that its “development of HybriDIMM in the U.S. reflects a ‘massive undertaking’ of its engineers.” (*Id.* (citing CX-2001C at Q/A 78-99; CX-2006C at Q/A 43-66; CX-2005C at Q/A 17-26).)

Netlist submits that its engineers began work on HybriDIMM in [REDACTED] and once operational, Netlist prototyped it during the summer of [REDACTED] and worked over at least the subsequent year to refine the design. (*Id.* (citing JX-2031C at *160-165, 171-172; CX-2006C at Q/A 23).) Netlist argues that from [REDACTED] to the filing of the complaint in the fall of 2017, it invested [REDACTED] in U.S. engineering salaries, including benefits for engineering dedicated to HybriDIMM.¹⁹ (*Id.* at 98-99 (citing CX-2006C at Q/A 31-42, 51-52; CPX-2005C).) In addition, Netlist argues that it invested [REDACTED] in salaries allocable to HybriDIMM for U.S. operations and management. (*Id.* at 99 (citing CX-2006C at Q/A 68-69, 75; CPX-2005C).)

¹⁹ Netlist claims that this includes [REDACTED] and at least [REDACTED] (*Id.* at 99.) Netlist also claims that this does not include [REDACTED] that it invested in 2013 when it started work on HybriDIMM and thus, its actual investment is “materially understated.” (*Id.* at 98 n.12 (citing CX-2006C at Q42, 75).)

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Based on this evidence, Netlist asserts that its domestic labor investment with respect to HybriDIMM between January 2014 and the filing of the complaint is objectively, quantitatively, and qualitatively significant. (*Id.*) Netlist argues that “[w]ithout the domestic labor R&D dedicated to HybriDIMM, it would not exist” and “[e]vidence of this type of R&D focus consistently supports a finding of qualitative significance.” (*Id.* (citing CX-2001C at Q/A 77-97; *Handheld Electronic Computing Devices*, Inv. No. 337-TA-769, Initial Determination, Order No. 34 at 8 (Feb. 6, 2012) (unreviewed)).) Netlist therefore contends that it has invested significant sums in labor related to the FPGA-based HybriDIMM and “[f]or a company of its size, this investment is quantitatively and qualitatively gigantic.” (*Id.* at 99.)

In addition, Netlist argues that only two engineers, Jerry Alston and Jordan Horwich, worked on the ASIC version of the product prior to August 2017. (CRB at 69.) Netlist submits that Mr. Alston was hired in late May 2017 and Mr. Horwich was hired in late June or July 2017, and therefore “to the extent their salaries may have been included in the [REDACTED] labor investment total for 2017, that total—at most—included four months of Mr. Alston’s salary and just two to three months of Mr. Horwich’s salary.” (*Id.* (citing RX-4223C; JX-2009C at 10:7-10, 11:10-12:22; Sasaki, Tr. at 255:4-8).) Therefore, based on Mr. Alston’s annualized salary in 2017 of [REDACTED] and Mr. Horwich’s annualized salary in 2017 of [REDACTED] Netlist argues that at most, the 2017 labor number was overstated by [REDACTED] which is four months of Alston salary + [REDACTED] which is three month of Horwich salary). (*Id.* at 69-70 (citing CPX-2005C).) According to Netlist, “[t]his still leaves well over [REDACTED] in 2017 labor investment directed solely to the FPGA HybriDIMM.” (*Id.* at 70.) Moreover, Netlist contends that even if investments during 2017 were ignored entirely, it still invested in domestic engineering labor for HybriDIMM [REDACTED]

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version of the product prior to August 2017. (See RX-4223C; JX-2009C at 10:7-10; Sasaki, Tr. at 254:23-255:10, 297:18-23.) Mr. Alston's annualized salary in 2017 was [REDACTED] and Mr. Horwich's annualized salary in 2017 was [REDACTED] (CPX-2005C at Tab "Annual 2015-16-17 US Salaries".) Therefore, Netlist's investment in engineering labor from 2014 to August 2017 appears to have been overstated by about [REDACTED] (i.e., [REDACTED] which is four months of Mr. Alston's annual salary + [REDACTED] which is three month of Mr. Horwich's annual salary), which accounts for the salaries of Mr. Alston and Mr. Horwich when they were working on the ASIC version and not solely the FPGA version of HybriDIMM. Accordingly, the undersigned finds that Netlist's investment in labor and capital from 2014 to August 2017 for HybriDIMM was [REDACTED]. The undersigned finds that these investments are significant, based both on the relatively modest size of Netlist as a company, and based on the importance of HybriDIMM to Netlist's business.²¹ (See CX-2006C at Q/A 24, 72-73; see also SIB at 98 n.60; *Certain Printing and Imaging Devices*, Comm'n Op. at 27 (citing *Certain Stringed Musical Instruments*, Comm'n Op. at 26).) Therefore, the undersigned finds that Netlist has satisfied the economic prong of the domestic industry requirement for the Asserted Patents pursuant to subsection 337(a)(3)(B).

C. 337(a)(3)(C) – Substantial Investment in its Exploitation

Netlist argues that it has made substantial domestic expenditures related to R&D and engineering of HybriDIMM, including tooling, testing fees, software maintenance fees, office supplies, telephone fees, engineering education and training, subscription fees, travel expenses, and some outside testing services. (CIB at 101 (citing CX-2006C at Q/A 74; CPX-2005C).) Netlist submits that since 2014, it incurred [REDACTED] in research and development and

²¹ In addition, even if viewed conservatively and the investments made in 2017 are disregarded, Netlist still made significant investments in labor or capital amounting to [REDACTED] from 2014 to 2016. (See CX-2006C at Q39-41.)

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engineering expenditures directly related to HybriDIMM, including at least [REDACTED] in 2014, [REDACTED] in 2015, [REDACTED] in 2016, and [REDACTED] from January 2017 to August 2017. (*Id.* (citing CX-2006C at Q/A 74-75; CPX-2005C).) Netlist asserts that “[t]hese investments are qualitatively and quantitatively substantial for a company of Netlist’s size.” (*Id.* (citing CX-2006C at Q/A 24).) Moreover, Netlist argues that similar amounts from companies of varying sizes, including companies larger than Netlist, constituted substantial investments. (*Id.* at 101-102 (citing *Certain Electronic Devices, Including Wireless Communication Devices, Portable Music and Data Processing Devices, and Computers*, Inv. No. 337-TA-794, Comm’n Op. at 102, 104-05 (July 5, 2013); *Certain Table Saws Incorporating Active Injury Mitigation Technology and Components Thereof*, Inv. No. 337-TA-965, Initial Determination, Order No. 10 at 16-17 (Mar. 22, 2016)).) Netlist contends that when taken in the aggregate, and particularly when viewed in relation to its overall domestic investments, Netlist’s total investments in HybriDIMM are significant. (*Id.* at 102.) According to Netlist, its total investment of [REDACTED] in HybriDIMM over the three years preceding the filing of the complaint makes up [REDACTED] of its total company-wide investments during that time and approximately [REDACTED] of its overall company-wide R&D expenses during that time. (*Id.* (citing CX-2006C at Q/A 24).)

Netlist further submits that to the extent that investments in 2017 are not taken into account, it invested [REDACTED] in research and development from 2014 to 2016. (CRB at 70 (citing CX-2006C at Q/A 74; CDX-2006C.006).) With respect to showing a nexus between its R&D work and the claims of the Asserted Patents, Netlist argues that showing such a nexus is not necessary for subsections 337(a)(3)(A) and (B), but does not specifically address a nexus for subsection 337(a)(3)(C). (*Id.* at 71.)

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Respondents contend that Netlist has failed to show a nexus between its alleged engineering, research, and development expenditures and the asserted claims. (RIB at 88 (citing *Certain Integrated Circuit Chips and Products Containing the Same*, Inv. No. 337-TA-859, Comm'n Op. at 38 (Aug. 22, 2014); RX-3871C at Q/A 86-90.) Respondents claim that Netlist relies on the LRDIMM portion of the HybriDIMM for purposes of the technical prong of the domestic industry requirement, which was "finalized and fully functional since August 2016." (*Id.* (citing RX-3772C at Q/A 130-31; RX-3770C at Q/A 35-37; JX-2033C at 286:1-22; JX-2013C at 56:2-12, 57:17-58:12; RX-3871C at Q/A 43-45; Milton, Tr. at 285:23-288:3; RX-2277C).)

Staff submits that Netlist has made substantial investment in engineering and research and development in the United States with respect to the HybriDIMM, including ██████ in 2014, ██████ in 2015, and ██████ in 2016. (SIB at 101 (citing CX-2006C at Q/A 74).) According to Staff, "when considering the time period ending in 2016 (pre-ASIC), the evidence shows a nexus between the asserted patents and Netlist's investments in their exploitation through engineering and research and development of the FPGA version of the HybriDIMM." (*Id.*) Staff also contends that these investments are significant quantitatively and qualitatively based on Netlist's modest size as a company and the relative importance of the HybriDIMM to Netlist's business. (*Id.* (citing CX-2001C at Q/A 51-54, 60-61, 147; CX-2006C at Q/A 23-24; 1023 ID at 163).)

In order to establish a domestic industry under section 337(a)(3)(C), Netlist must establish investments in research and development for the domestic industry products and show a nexus between the asserted patents and the U.S. investment in their exploitation. *Certain Integrated Circuit Chips and Products Containing the Same*, Inv. No. 337-TA-859, Comm'n Op. at 38 (Aug. 22, 2014). The Commission has explained that "this nexus may readily be inferred based on evidence that the

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claimed investment is in the domestic industry article, which itself is the physical embodiment of the asserted patent.” *Id.* at 40. Further, the Commission has explained that “no patent-by-patent allocation is required for research and development investment under subparagraph (C).” *Id.* at 41. The Commission reasoned that such an approach would risk “freezing cognizable investment at the point at which the patented technology is reduced to practice,” and would run contrary to the reality that “most firms have little reason to keep research and development records on a patent-by-patent basis, as opposed to a project-by-project basis (to the extent that project-by-project records are kept).” *Id.* at 41-42.

Consistent with the above determination that the HybriDIMM products satisfy the technical prong of the domestic industry requirement for the '907 patent and the evidence of record showing Netlist's investment in domestic research and development related to the HybriDIMM, the undersigned finds that Netlist has established a nexus between its research and development activities and the '907 patent based on the patented articles themselves, *i.e.*, the HybriDIMM products. (*See* CX-2006C at Q/A 74; *Certain Integrated Circuit Chips*, Comm'n Op. at 40.) Specifically, the evidence shows that from 2014 to 2016, Netlist invested [REDACTED] in domestic research and development. (CX-2006C at Q/A 74; CX-2312C at 144.) As previously stated though, Netlist's relevant investments with respect to subsection 337(a)(3)(C) would be from 2014 to August 2016 when investments were made with respect to the LRDIMM portion of the HybriDIMM. Although Netlist presents evidence of investments for the full year 2016 instead of from January 2016 to August 2016, if viewed conservatively and the undersigned disregards investments made in 2016, Netlist still made substantial investments in research and development amounting to [REDACTED] from 2014 to 2015. (*See id.*) The undersigned finds that these investments are substantial, based both on the relatively modest size of Netlist as a company, and

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based on the importance of HybriDIMM to Netlist's business. (See CX-2006C at Q/A 24, 72-73; see also SIB at 98 n.60; *Certain Printing and Imaging Devices*, Comm'n Op. at 27 (citing *Certain Stringed Musical Instruments*, Comm'n Op. at 26).) Accordingly, the undersigned finds that Netlist has satisfied the economic prong of the domestic industry requirement for the '907 patent pursuant to subsection 337(a)(3)(C).

However, as determined above, Netlist has not shown that the HybriDIMM products satisfy the technical prong of the domestic industry requirement as to the '623 patent. Accordingly, because the undersigned has determined that the HybriDIMM products do not practice the '623 patent, Netlist cannot make an articles-based nexus showing between its research and development activities and the '623 patent based on its HybriDIMM products. Netlist did not provide any other reasons for finding a nexus between its research and development investments and the '623 patent. (See CIB at 94-102; CRB at 68-71.) Therefore, the undersigned finds that Netlist fails to satisfy the economic prong of the domestic industry requirement for the '623 patent pursuant to subsection 337(a)(3)(C).

In sum, the undersigned finds the economic prong of domestic industry has been satisfied under subsections (A), (B), and (C) for the '907 patent, and satisfied under subsections (A) and (B) for the '623 patent.

VII. OTHER AFFIRMATIVE DEFENSES

A. Equitable Estoppel, Waiver, and Implied License

In their initial post-hearing brief, Respondents argue "the same facts that show the public interest precludes an exclusion order in light of Netlist's violation of its RAND commitments, Netlist's claims are barred by the doctrine of equitable estoppel." (RIB at 90.) Indeed, as suggested, this defense is predicated on a finding that Netlist has failed to offer a license to the

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asserted patents on RAND terms as required of JEDEC participants. (*See id.* at 90-91.) Respondents tie their waiver and implied license defenses to the same predicate. (*Id.* at 91 n.22.)

As discussed below, the undersigned finds the evidence does not show Netlist has breached a RAND obligation. Thus, this affirmative defense fails, as it did in the 1023 Investigation. (*See* 1023 ID at 197 n.41.)

B. Unclean Hands

Apart from RAND issues, Respondents also contend that “blatantly false statements that Netlist has made in support of its domestic industry allegations in this and the 1023 Investigation leave it with unclean hands” such that it “should be entitled to no relief in this Investigation and barred from bringing further actions against SK hynix.” (RIB at 91, 94.) Respondents note the relevant considerations are whether: “(1) the accused party has committed an ‘unconscionable act’; and (2), the misconduct ‘has an immediate and necessary relation to the equity that the requesting party seeks in respect of the matter in litigation.’” (*Id.* at 91 (citing *Aptix*, 269 F.3d at 1376; *Keystone Driller*, 290 U.S. at 245).)

As to unconscionable act, Respondents point to the 1023 Investigation where [REDACTED]
[REDACTED]
[REDACTED] (*id.* at 91-92 (citing RX-3770C at Q/A 20; RX-3771C at Q/A 32; RX-3772 at Q/A 37)) and Netlist itself “represented that it [REDACTED]
[REDACTED]
[REDACTED] (RX-3773C.00084) to counter SK hynix’s contention that [REDACTED]
[REDACTED]” (*id.* at 92). Respondents also point to this investigation where Netlist’s Ground Rule 7-3 disclosures contended [REDACTED]
[REDACTED]

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██████████ (id. (citing RX-3843 at ¶ 15)) and its witness testified to the same (id. (citing CX-2001C at Q/A 54, 133, 139, 141)).

Respondents allege Netlist made these representations even though it “██████████
██████████
██████████
██████████” (Id. at 92-93 (citing Hong, Tr. at 168:9-178:20; Sasaki, Tr. at 250:14-251:9; JX-2013C at 9:20-10:3, 14:6-11; JX-2008C at 24:21-25:17, 32:17-33:15, 55:22-56:5, 61:1-7; JX-2013C at 14:6-11, 32:12-14, 68:6-12).) Respondents add:

The falsity of Netlist’s representations to the Commission regarding

██████████
██████████ RX-3775C.00003; RX-3776C.00003; Hong, Tr. at 182:6-184:21; RX-3771C at Q/A 32.23
██████████ JX-2008C at 24:21-25:17, 32:17-33:15, 55:22-56:5, 61:1-7; JX-2013C at 14:6-11, 32:12-14, 68:6-12; Hong, Tr. at 168:9-12, 173:3-23, 176:22-178:20; Sasaki, Tr. at 250:14-251:9.
██████████ JX-2013C at 68:6-12; Hong, Tr. at 178:3-20. Thus no version of HybriDIMM constitutes a domestic industry today, despite Netlist’s misrepresentations to the contrary

(Id. at 93.) Respondents assert that the necessary relation” factor is met by “Netlist sought—and gained—an unfair advantage by ██████████

██████████ (Id. at 94 (citations omitted).)

In their reply brief, Respondents contend “Netlist side-steps the core of Respondents’ arguments” because ██████████ are irrelevant to the fact of

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[REDACTED] in a second phase of development.” (CIB at 104.) Netlist characterize Respondents as “cherry-pick[ing] snippets of forward-looking and aspirational testimony by Netlist’s executives in the 1023 Investigation regarding the business plan of the company” which nonetheless “corroborates Netlist’s steadfast approach to developing HybriDIMM and the business challenges of creating an industry-first product.” (*Id.* at 104-105.)

Netlist disputes that its statements are anything like the misconduct in *Gilead Sciences* because “Netlist made no false statements, let alone any intentionally false statements.” (*Id.* at 105.) Further, Netlist claims it has “performed multiple public and private demonstrations of its FPGA version of the HybriDIMM product” and “has offered [it] for sale and shipped to customers.” (*Id.* at 106 (citing CX-2001C at Q/A 129-133, 139; CX-2005C at Q/A 8; CX-2007C at Q/A 50; JX-2015C at 79:25-80:18).) Netlist does caption, however, the testimony of its employee, Mr. Milton as one who “is not involved in the business side of the company and he was not even involved in the HybriDIMM project between the summer of 2016 and the summer of 2017.” (*Id.* (citing CX-2005C at Q/A 7).) Netlist repeats the position that FPGA HybriDIMM was “ready for mass production—technically and in terms of manufacturing capacity” even though “[REDACTED].” (*Id.* (“Netlist grew to understand that other and greater business opportunities necessitate the development of an ASIC version of its HybriDIMM product.”).) Netlist states again, “[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]” (*Id.* at 107.) Netlist argues its Board of Directors presentation, cited by Respondents, “does not change anything.” (*Id.*) Netlist states:

[REDACTED]

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[REDACTED] See Tr. (Sasaki) at 275:1-18.

(Id.)

With respect to “necessary and immediate relation,” Netlist claims because it “is solely relying on the FPGA version to satisfy the domestic industry requirement in this Investigation, Respondents’ arguments related to Netlist’s business objectives for the ASIC version are irrelevant.” (*Id.* at 108.) Netlist adds that the domestic industry findings in the prior investigation “did not center on any potential sales of that product” and “focused only on whether a domestic industry existed, not whether one was in the process of being established.” (*Id.* at 108-109 (citing 1023ID at *171-172).) The Staff agrees with Netlist that no “immediate and necessary relation” has been shown. (SIB at 104.)

In its reply brief, Netlist emphasizes, in particular, the qualifications given from its employee, Mr. Milton, that his prior statements on [REDACTED] were in reference to “[REDACTED]” and [REDACTED] [REDACTED] are not exclusive of one another. (CRB at 72 (citing Milton, Tr. at 284:13-285:17, 284:7-12).) Netlist again characterizes its 1023 Investigation testimony as “[REDACTED] [REDACTED] [REDACTED]” (*Id.* at 72.) Netlist concludes that, in any event, there is no precedent for barring it from any future Section 337 relief. (*Id.* at 73.)

Here, the undersigned understands Respondents’ affirmative defense to be a serious allegation of malfeasance against Netlist, akin to the fraudulent acts required for inequitable conduct before the USPTO. For just one example, Respondents have presented a discrepancy between [REDACTED] and [REDACTED] [REDACTED] and

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related representations. (See RIB at 91-93 (citing, *inter alia*, RX-3770C at Q/A 20; RX-3771C at Q/A 32; RX-3772C at Q/A 137; RX-3775C at *3; RX-3776C at *3; Hong, Tr. at 182:6-184:21; RX-3771C at Q/A 32).)

Nevertheless, both parties acknowledge that the unconscionable act must have a “necessary and immediate relation” to the equity Netlist seeks in this investigation. On this point, Respondents contend there is a connection to Netlist’s current economic prong domestic industry theory. (See, e.g., RRB at 65.) The undersigned finds Respondents have not sufficiently shown such a connection. A review of Respondents’ briefings reveals only a few mentions of statements, positions, or testimony—alleged to be false—that would have a connection to Netlist’s current claim of significant investments in FPGA HybriDIMM as a domestic industry which “exists.” A majority of Respondents’ identified-as-false statements would only be relevant to a domestic industry alleged to be in the process of being established—as was the theory in the 1023 Investigation. (1023 ID at 164.)

For example, Respondents identify the statement from Netlist’s G.R. 7.3 mandatory disclosure that [REDACTED] (RIB at 92.) Even if false, the undersigned does not see the connection to Netlist’s presentation of FPGA HybriDIMM investments already incurred to show its industry “exists” in this investigation.

For another example, Respondents refer to August depositions in which Netlist witnesses supposedly testified that [REDACTED] (RIB at 93.) Respondents only loosely connect this testimony to Netlist’s current economic prong theory, however, stating “[t]he truth is the FPGA HybriDIMM has been a dead product since before the 1023 hearing” and “[t]hus no version of HybriDIMM constitutes a domestic industry

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today.” (*See id.*) It is unclear here what the unconscionable act is beyond the Netlist’s general contention that it has a FPGA HybriDIMM domestic industry in existence. Without further clarification, the undersigned views the ASIC “plan” testimony as more properly applied to the merits of Netlist’s economic prong position.

For another example, and in direct reference to the “immediate and necessary relation” element of unclean hands, Respondents state “[h]ere, Netlist sought—and gained—an unfair advantage by misrepresenting facts to support domestic industry to FPGA HybriDIMM.” (RIB at 94.) It is again unclear what advantage Respondents are referring to here that would pertain to the present investigation as opposed to the 1023 Investigation where economic prong domestic industry was determined to be satisfied. Indeed, Respondents next statement implies it is discussing what occurred in that prior case—“[i]n the 1023 Investigation Netlist’s misrepresentations carried the day” (*Id.*)

Respondents’ reply brief provides another example; they state “[i]n this investigation, Netlist would have the CALJ belief that ‘Netlist intended—and still intends—to sell FPGA HybriDIMM to customers.’” (RRB at 63 (citing CIB at 105).) That quoted statement from Netlist, however, comes from its address of Respondents’ unclean hands defense, *not* its economic prong discussion. (*See* CIB at 105.)

Respondents’ reply brief also identifies Netlist’s statement that “FPGA HybriDIMM ‘was fully functional and ready for distribution to customers as early as [REDACTED]’” (RRB at 64 (citing CIB at 96 n.11).) While this statement is from Netlist’s economic prong discussion, and Respondents subsequently provide various examples from the record suggesting it is a misrepresentation, FPGA HybriDIMM’s status as “fully functional and ready for distribution” has only limited nexus to Netlist’s current economic prong theory (*i.e.*, that its quantifiable investments

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made “from January 1, 2014 through the filing date of the complaint in this Investigation” are significant or substantial). (See CIB at 96.) The same is true for the declaration from Netlist’s employee Ms. Sasaki regarding shipments of [REDACTED] [REDACTED] [REDACTED]” (See RRB at 64 (citing RX-23237C at *6; CIB at 96).) Whether or not this is true has only a limited (*i.e.*, not necessary) relation to the reliability of Netlist’s current economic prong theory. *Serdarevic v. Advanced Med. Optics, Inc.*, 532 F.3d 1352, 1362 (Fed. Cir. 2008) (“Because the defendants’ alleged misconduct was not responsible for Serdarevic’s delay, the district court was correct to conclude that the defendants’ laches defense was not precluded by unclean hands”); *Gilead*, 888 F.3d at 1240 (“The court also found, with adequate evidentiary support, that the false testimony, in both respects, bore on the origin story of the February 2005 amendment, which was relevant to the invalidity issues in the litigation and hence immediately and necessarily related to the equity of the patent-enforcement relief Merck seeks in this case.”).

Accordingly, the undersigned does not find that Respondents have shown Netlist acted with unclean hands so as to prevent any relief in the event a violation is found. The discrepancies and potential misrepresentations are more appropriately addressed in evaluating the reliability of Netlist’s economic prong claims—*e.g.*, providing a basis to question whether Netlist has engaged entirely, as in 100%, in FPGA development to the exclusion of ASIC development prior to the complaint in the year 2017. (See RIB at 86-87; Order No. 40; CIB at 96 n.11 [REDACTED] [REDACTED] [REDACTED]”.)

VIII. 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 as to all Respondents.
3. Respondents do not infringe any asserted claim of U.S. Patent No. 9,535,623.

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4. Respondents do infringe asserted claims 1-8, 10, 12, 14, and 15 of U.S. Patent No. 9,606,907.
4. Asserted claims 1, 2, 3, 4, 5, 7, 8, 10, 14, and 15 of U.S. Patent No. 9,606,907 are invalid under 35 U.S.C. § 103 as obvious; all other asserted claims are not invalid under 35 U.S.C. § 103.
5. The asserted claims of U.S. Patent No. 9,606,907 are not invalid under 35 U.S.C. § 112 as failing to comply with the written description requirement.
6. The technical prong of the domestic industry requirement for U.S. Patent No. 9,535,623 has not been satisfied.
7. The technical prong of the domestic industry requirement for U.S. Patent No. 9,606,907 has been satisfied.
8. The economic prong of the domestic industry requirement has been satisfied for U.S. Patent Nos. 9,535,623 and 9,606,907.

IX. RECOMMENDED DETERMINATION ON REMEDY & BOND

The Commission's Rules provide that the administrative law judge shall issue a recommended determination concerning the appropriate remedy in the event that the Commission finds a violation of section 337, and the amount of bond to be posted by respondents during Presidential review of the Commission action under section 337(j). *See* 19 C.F.R. § 210.42(a)(1)(ii).

A. Limited Exclusion Order

Under section 337(d), the Commission may issue a limited exclusion order ("LEO") directed to a respondent's infringing products. 19 U.S.C. § 1337(d). A limited exclusion order instructs the U.S. Customs Service to exclude from entry all articles that are covered by the patent at issue that originate from a named respondent in the investigation. *See Fuji Photo Film Co. Ltd. v. Int'l Trade Comm'n*, 474 F.3d 1281, 1286 (2007).

Netlist argues that, "[i]n the event a violation of Section 337 is found, the CALJ should recommend that the Commission issue a Limited Exclusion Order directed to the relevant products of

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the named Respondents, excluding any articles that infringe one or more claims of the Asserted Patents.” (CIB at 119-120.) Netlist does not seek a general exclusion order.

Respondents do not dispute that, in the even a violation of section 337 is found, a LEO should issue. Respondents suggest, however, that such an order “should be tailored for administrability and to minimize harm to third parties” (RIB at 118) and argue a 12 month delay “commencing at the end of any suspension pending appeal of the FWDs of invalidity” is an appropriate tailoring (RRB at 80). Respondents also argue the nature of the Accused Products as compared to the asserted patent claims warrants a certification provision “so that any future design-around or other newly imported product from SK hynix could be readily identified to Customs as not subject to exclusion.” (RIB at 118; RRB at 80.) Finally, Respondents request a repair exception to accommodate those products already sold to customers or new products “imported solely for research and testing purposes.” (RIB at 119; RRB at 80.)

The Staff takes the position that “[t]o the extent a violation is found, a limited exclusion order extending to the accused products is the appropriate remedy, with the above discussed 6-12 month delay.” (SIB at 107.)

In the event the Commission finds a violation, the undersigned recommends that a limited exclusion order issue prohibiting the importation of Respondents’ RDIMMs and/or LRDIMMs found to infringe the asserted patents. The undersigned also recommends the inclusion of a provision whereby Respondents can certify that certain products are not subject to exclusion, as memory modules may be imported as subcomponents of larger devices, and ascertaining whether the modules are subject to the exclusion order would be difficult. The undersigned does not recommend incorporating the other exceptions requested by Respondents, as the record does not support them.

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B. Cease and Desist Order

Under section 337(f)(1), the Commission may issue a cease and desist order (“CDO”) in addition to, or instead of, an exclusion order. 19 U.S.C. § 1337(f)(1). The Commission generally issues a cease and desist order directed to a domestic respondent when there is a “commercially significant” amount of infringing, imported product in the United States that could be sold, thereby undercutting the remedy provided by an exclusion order. *See Certain Crystalline Cefadroxil Monohydrate*, Inv. No. 337-TA-293 USITC Pub. 2391, Comm’n Op. on Remedy, the Public Interest and Bonding at 37-42 (June 1991); *Certain Condensers, Parts Thereof and Prods. Containing Same, Including Air Conditioners for Automobiles*, Inv. No. 337-TA-334 (Remand), Comm’n Op. at 26-28, 1997 WL 817767, at *11-12 (U.S.I.T.C. Sept. 10, 1997).

In the event a violation of Section 337 is found, Netlist argues that a CDO should issue “prohibiting the domestic Respondents from engaging in the unlawful importation and/or sale within the U.S. of infringing articles.” (CIB at 120.) Netlist submits that “the evidence showed that SK hynix America, Inc. maintains a commercially significant inventory of Accused Products.” (*Id.* (citing CX-0282C); CRB at 80 (citing CX-0282C).) The Staff agrees that “the evidence shows approximately 4,000 units of LRDIMM products and 5,000 RDIMM products were in inventory as of September 1, 2016” with an implication that this is “commercially significant” to warrant a CDO. (*See* SIB at 107 (citing CX-0282C).)

Respondents contend that a CDO should not issue because “Netlist does not have a product that competes with the accused products” and otherwise has not shown why an alleged inventory is “commercially significant.” (RIB at 119-120.) Respondents claim the singular exhibit cited by Netlist and the Staff to support a commercially significant inventory “is not in evidence.” (RRB

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at 80 (referring to CX-0282C).) In the event a CDO does issue, Respondents contend the order should include carve-outs for service and repair. (RIB at 120.)

Should the Commission find a violation of section 337, the undersigned does not recommend that a cease and desist order issue to SK hynix America. The exhibit that Netlist and the Staff rely on to show inventory, CX-0282C, is not in evidence. Accordingly, the record does not support a finding that SK hynix America maintains a commercially significant inventory, and thus the undersigned does not recommend issuance of a cease and desist order.

C. Bond During Presidential Review

Pursuant to section 337(j)(3), the Administrative Law Judge and the Commission must determine the amount of bond to be required of a respondent during the 60-day Presidential review period following the issuance of permanent relief, in the event that the Commission determines to issue a remedy. *See* 19 U.S.C. § 1337(j)(3). The purpose of the bond is to protect the complainant from any injury, *see* 19 C.F.R. § 210.42(a)(1)(ii), § 210.50(a)(3), and the Complainant bears the burden of establishing the need for a bond, *Certain Cast Steel Railways Wheels, Processes for Manufacturing or Relating to Same and Certain Prods. Containing Same*, Inv. No. 337-TA-655, Comm'n Op. at 12 (Mar. 19, 2010). In this investigation, however, Netlist does not seek a bond. (*See* CIB at 119-120; CRB at 80; RIB at 120 (citing CPB at 678).) Therefore, the undersigned does not recommend entry of any bond.

X. PUBLIC INTEREST

In connection with this Recommended Determination, and pursuant to Commission Rule 210.50(b)(1), 19 C.F.R. § 210.50(b)(1), the Commission ordered that the presiding administrative law judge:

[S]hall take evidence or other information and hear arguments from the parties or other interested persons with respect to the public

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interest in this investigation, as appropriate, and provide the Commission with findings of fact and a recommended determination on this issue, which shall be limited to the statutory public interest factors set forth in 19 U.S.C. 1337(d)(1), (f)(1), (g)(1).

82 Fed. Reg. 57,291 (Dec. 4, 2017).

A. Agreement and Stipulation Regarding Certain Public Interest Factors

Netlist and Respondents entered into an Agreement and Stipulation Regarding Evidence and Recommendations Relating to the Statutory Public Interest Factors. (JX-2037.) That agreement includes the following provision:

The findings of fact in sections XII (A) – (D) in the RD in Investigation No. 1023, relating to the statutory public interest factors, should be adopted in this Investigation and the parties request the CALJ adopt them. Based on these findings of fact, the same conclusions of law and recommendations regarding remedy relating to the statutory public interest factors as set forth in Sections XII (A) – (D) in the RD in Investigation No. 1023, e.g., “a delay of six to twelve months for any exclusion order,” would be appropriate in this Investigation and the parties request the CALJ adopt them.

(*Id.* at 1-2 (footnotes omitted).) Moreover, if an exclusion order were to issue, Staff agrees with the private parties’ stipulation that a six to twelve month delay is appropriate with respect to the public interest factors. (SIB at 105; SRB at 27-28.)

Based on the foregoing, the undersigned hereby adopts the findings of fact, conclusions of law, and recommendations set forth in JX-2037.

B. Patent Trial and Appeal Board (“PTAB”) Final Written Decisions (“FWDs”)

Netlist and Respondents submitted briefing on whether the PTAB’s FWDs, rendering claims in the Asserted Patents invalid, weighs against imposition of any remedy. (*See* RIB at 95-97; RRB at 66; CRB at 73-74.) The parties refer to the “public interest” generally, but neither

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party clearly connects their arguments on this issue to the specifically enumerated statutory public interest factors, *i.e.*, the public health and welfare, competitive conditions in the United States economy, the production of like or directly competitive articles in the United States, and United States consumers. (*See id.*; 19 U.S.C. § 1337(d)(1), (f)(1), (g)(1).) Nevertheless, the parties treat this issue in the context of public interest and accordingly, the undersigned addresses the issue here.

Netlist argues that Respondents chose to advance their invalidity defenses under 35 U.S.C. § 102 and 103 in the PTAB and now must accept that they are estopped from litigating those same arguments elsewhere. (CRB at 73-74.) According to Netlist, the undersigned “should not rely on the FWDs in his public interest findings and should not recommend elimination or suspension of relief to which Netlist is otherwise due.” (*Id.* at 74.) Netlist contends that Respondents’ request to suspend any remedy is premature because if the FWDs are vacated and remanded, Respondents can return to the Commission to address the issue. (*Id.*)

Respondents submit that as of June 27, 2019, the PTAB has found all claims asserted in this Investigation to be unpatentable and thus, the undersigned should recommend against imposition of any remedy. (RIB at 95 (citing RX-2603 at *3327-3351; RX-2599 at *5041-5134).) Respondents argue that “[t]he public interest would be disserved by attributing exclusionary power to such invalid patent claims.” (*Id.* (citing *Lear, Inc. v. Adkins*, 395 U.S. 653, 670 (1969)).) Respondents claim that the PTO recently expressed that a judicial remedy in a patent infringement case should not and would not be issued as long as the claims have been found by the PTAB to be unpatentable. (*Id.* (citing *BTG Int’l Ltd. v. Amneal Pharms. LLC*, Nos. 2019-1147 et al., Invited Brief for the Director – U.S. Patent and Trademark Office as Amicus Curiae in Support of Neither Party, at 9 (Fed. Cir. Feb. 1, 2019)).) According to Respondents, it would be “especially perverse

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in the present circumstances where Respondents were deemed estopped even to advance meritorious invalidity positions accepted by the PTAB.” (RIB at 96.)

Respondents contend that if the Commission finds a violation, the undersigned should recommend that any remedial order be denied, or at a minimum, decline to impose any remedy until such time as the PTAB’s decisions are reversed, which Respondents claim is not likely to happen. (*Id.*; RRB at 66.) Respondents point out that the undersigned previously relied on the Commission’s willingness to suspend enforcement of remedial orders pending final resolution of those PTAB decisions and thus, the undersigned should recommend suspension of any remedial orders until that time. (RIB at 96.)

Staff submits that it “will likely support a request for suspension of any remedial order pending the conclusion of the appeals of the PTO’s determinations that the asserted claims of the two asserted patents are invalid.” (SIB at 106 n.67.)

The undersigned finds that the parties have not presented any evidence to support declining to impose an exclusion order based on the PTAB’s FWDs rendering claims in the Asserted Patents invalid.²² The undersigned has already ruled on this matter with Order No. 49, which denied a similar request for a stay. No arguments have been presented in the parties’ briefs that would cause the undersigned to modify the decision in Order No. 49. Moreover, the parties have already stipulated that a delay of six to twelve months for any exclusion order would be appropriate. (JX-2037.) Therefore, with respect to this issue, the undersigned finds no reason to recommend

²² Respondents’ reference to the PTO’s amicus brief in *BTG Int’l Ltd. V. Amneal Pharms. LLC* is misplaced. The portion of that brief Respondents quote is related to requesting a district court to stay infringement litigation in light of IPR proceedings. *See BTG*, Invited Brief for the Director – U.S. Patent and Trademark Office as Amicus Curiae in Support of Neither Party, at 9. It does not discuss the issue in this Investigation of whether an exclusion order from the Commission should be implemented or delayed based on the statutory public interest factors.

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deviation from the previously stipulated delay of six to twelve months for imposition of any exclusion order.

C. RAND

Netlist contends that the RAND issue was resolved in the 1023 Investigation, the record in this Investigation is materially the same, and thus, there is no basis to revisit the RAND findings from the 1023 Investigation. (CIB at 109.) According to Netlist, it never ceased bargaining in good faith toward a RAND rate, even after the initial determination in the 1023 Investigation issued. (*Id.*) Netlist argues that in contrast, Respondents fail to meet their burden on any RAND-related defense and refuse to even consider or make counteroffers in licensing negotiations, thereby engaging in a patent holdout. (*Id.* at 110.)

Respondents argue that issuance of an exclusion order or cease and desist order in this Investigation has the potential to cause substantial harm to U.S. competition, consumers and innovation. (RIB at 97 (citing RX-0874 at *2).) Respondents claim that an exclusion order would likely force them to take a license from Netlist that would permit Netlist to “(i) extract excessive and unreasonable royalties that the evidence shows bear no relation to the value of Netlist’s alleged SEPs, and (ii) distort competition in the module market by forcing SK Hynix to pay a discriminatory, non-competitive rate, which would result in harm to U.S. consumers, who will suffer reduced competition, increased prices, reduced innovation, and reduced participation in standard-setting.” (*Id.* (citing CX-2002C at Q/A 374; RX-2005C at Q/A 26, 2009-47).) According to Respondents, the record in this Investigation includes new developments and evidence, not available during the 1023 Investigation, that prove Netlist violated its RAND obligations. (*Id.* at 97-98; RRB at 66-67.) Respondents also argue that the determination in the 1023 Investigation

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does not dictate the result on the RAND issues in this Investigation because it has no collateral estoppel effect. (RRB at 66.)

Staff submits that valuation of Netlist's patents and a RAND rate is not necessary because the evidence does not show that the Asserted Patents are infringed or essential to any standard, especially given that the PTO determined that the claims of the Asserted Patents are unpatentable. (SIB at 108-09.) If the Commission does find that the Asserted Patents are essential, then Staff believes a six to twelve month delay of an exclusion order is sufficient to mitigate the harm to the public interest. (*Id.* at 110.)

1. Essentiality

Netlist does not specifically address this point, but Respondents rely on Netlist's contentions that each of the asserted patent claims is essential to a JEDEC standard. (RIB at 98-99 (citing CX-2007C at Q/A 17; RX-2074C at *63, 66, 68-69).) Respondents submit that similar to the 1023 Investigation, Netlist's admissions are sufficient to establish essentiality if infringement is found. (*Id.* at 99 (citing JX-2031C at *191).) Respondents also claim that Netlist acknowledged that each of the Asserted Patents was disclosed to JEDEC and Netlist committed to offer to license those patents "under reasonable terms and conditions that are demonstrably free of any unfair discrimination." (*Id.* (citing CX-2007C at Q/A 22-31; RX-2074C at *64, 67, 70).)

Staff contends that "the evidence does not show that the patents are essential to any standard." (SIB at 108; SRB at 27 (citing Levitt, Tr. at 444:18-445:2; Mangione-Smith, Tr. at 355:4-8).) Specifically, Staff contends that the claim construction for the '907 patent requires specific functionality by memory devices and it is undisputed that the JEDEC standards do not govern the internal workings of a memory device's response to a control signal. (SIB at 108-09 (citing Order No. 17 at 20; Levitt, Tr. at 444:18-445:2).) Staff therefore argues that the JEDEC

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standards can be practiced without infringing the “do not . . . receive” limitation when properly interpreted to require more than merely “non-performance.” (*Id.* at 109.) As to the '623 patent, Staff claims that the Clock-to-CA training is not required to practice the JEDEC standard and thus, the evidence does not show that practicing the JEDEC standard necessarily infringes the claims of the '623 patent. (*Id.* at 109 (Mangione-Smith, Tr. at 355:4-8).) Moreover, Staff contends that “given that the PTO has determined that the claims of the asserted patents are unpatentable, the evidence does not support finding that the asserted claims are ‘essential’ to practicing the standards.” (*Id.*)

As stated in the determination in the 1023 Investigation, “a necessary pre-requisite to any determination that Complainant has violated a RAND licensing obligation is a showing that the asserted patents in this investigation are actually standard essential.” (1023 ID at 182.) If the Asserted Patents are not essential to a JEDEC standard, then Netlist does not have a RAND licensing obligation for those patent claims. (*Id.*)

Netlist asserts that “[t]he Accused Products . . . and various of their components, comply with various JEDEC standards.” (CIB at 15-16.) If the Accused Products comply with JEDEC standards, then a standard essential patent would necessarily be infringed by those products. *See Certain Memory Modules*, Initial Determination at 182. Indeed, the JEDEC Patent Policy defines “Essential Patent Claims” as “[t]hose Patent claims the use of which would necessarily be infringed by the use, sale, offer for sale or other disposition of a portion of a product in order to be compliant with the required portions of a final approved JEDEC Standard.” (RX-2659 at *31.) Therefore, assuming that the Accused Products comply with JEDEC standards, as Netlist asserts, the evidence does not show that the Asserted Claims of the '623 patent are essential to any JEDEC standard because, as determined above, the Accused Products do not infringe the Asserted Claims

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of the '623 patent. And because those claims are not essential to a JEDEC Standard, Netlist had no obligation to license those patent claims to Respondents under the JEDEC Agreement and thus, the issue of whether Netlist breached any RAND obligations as to that patent is moot. (See RX-2659 at *34; *Certain Magnetic Data Storage Tapes and Cartridges Containing the Same*, Inv. No. 337-TA-1012, Comm'n Op. at 102-05 (Apr. 2, 2018).)

As to the '907 patent, Netlist contends that the '907 patent claims are essential to JEDEC standards. (See CX-2007C at Q/A 17; RX-2074C at *63-69.) For example, Netlist's Vice President of Intellectual Property and Licensing testified that "based on our analysis, each of the asserted claims is essential to a JEDEC standard." (CX-2007C at Q/A 17.) In addition, pursuant to customary objections, Netlist admitted that it "was a member of at least one JEDEC committee that developed one or more final JEDEC standards to which the '907 patent is essential for DDR4 LRDIMM standard-compliant products." (RX-2074C at *64.) Accordingly, if the Commission determines that the '907 patent is infringed in this Investigation, the undersigned finds that the evidence of record would support the conclusion that the Asserted Claims of the '907 patent are essential to a JEDEC standard.

2. Enforceability

Respondents argue that under applicable New York law, the RAND commitments Netlist made are legally enforceable. (RIB at 99-100 (citing RX-2659 at *37).) Respondents contend that Netlist agreed to abide by the JEDEC Patent Policy, submitted multiple LOAs promising to offer a license under reasonable terms and conditions demonstrably free of unfair discrimination, and acknowledged that its RAND commitments are binding contracts. (*Id.* at 100 (citing RX-2659 at *34-35; CX-0530 at *27-28; Whitley, Tr. at 201:20-206:10; CX-2007C at Q/A 33, 114; RX-2337C at *21-22).) Respondents claim that their experts relied on consensus understandings of

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“reasonable” and “unfair discrimination” and determined that Netlist’s offers were not RAND. (*Id.* (citing RX-2004C at Q/A 50-51, 101-06, 345-49, 356).) Respondents also claim that “[c]ourts interpreting the same terms in the IPR policies of other SSOs have likewise been able to assess patent holders’ compliance with RAND obligations.” (*Id.* (citing *TCL Commc’ns Tech. Holdings, Ltd. V. Telefonaktiebolaget LM Ericsson*, 2018 WL 4488286, at *26, 48-52, 55-56 (C.D. Cal. Sept. 14, 2018)).) Moreover, Respondents argue that public policy concerns also favor enforcement of Netlist’s RAND commitments in order to avoid anticompetitive consequences. (*Id.* at 100-101 (citations omitted).)

As stated in the 1023 ID, “it appears that the JEDEC Patent Policy is, by design, ambiguous about the meaning of reasonable license terms and conditions” and “the undersigned cannot determine what exactly the RAND commitment entails in terms of acceptable licensing terms.” (1023 ID at 195.) In fact, the JEDEC Patent Policy merely defines “RAND” as “[r]easonable and non-discriminatory licensing terms and conditions” with no definition for “reasonable” or “non-discriminatory.” (RX-2659 at *31; *see* 1023 ID at 194.) Respondents cite to *Cobble Hill Nursing Home* for the proposition that “[b]efore rejecting an agreement as indefinite, a court must be satisfied that the agreement cannot be rendered reasonably certain by reference to an extrinsic standard that makes its meaning clear.” (*See* RIB at 100 (citing *Cobble Hill Nursing Home, Inc. v. Henry and Warren Corp.*, 548 N.E.2d 203, 206 (N.Y. 1989).) Respondents, however, never articulate any extrinsic standard or agreed-upon methodology by which the undersigned can determine the meaning of certain license terms and conditions, such as “reasonable” and “non-discriminatory.” (*See* RIB at 99-100; 1023 ID at 194-95; *Cobble Hill*, 548 N.E.2d at 206; *166 Mamaroneck Ave. Corp. v. 151 East Post Road Corp.*, 575 N.E.2d 104, 105-06 (N.Y. 1991); *Joseph Martin, Jr., Delicatessen, Inc. v. Schumacher*, 417 N.E.2d 541, 544 (N.Y. 1981).) Instead,

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Respondents ambiguously state that their experts rely on “consensus understandings of ‘reasonable’ and ‘unfair discrimination.’” (See RIB at 100 (citing RX-2004C at Q/A 50-51, 101-06, 345-49, 356).) However, those “consensus understandings” are not an extrinsic standard or methodology, but are merely their expert’s reliance on the Samsung JDLA as a comparable license. (See RX-2004C at Q/A 50-51, 101-06, 345-49, 356.) That testimony does not include references to any methodology or extrinsic standard, let alone an agreed-upon one, that clarifies the meaning of the terms “reasonable” and “non-discriminatory.” (*Id.*) In addition, while Respondents cite to a district court interpreting an IPR policy for a standards setting organization, Respondents fail to explain why analysis of that policy should inject meaning into the JEDEC agreement, particularly when that court considered an agreement for a different organization than JEDEC that was subject to the laws of France instead of New York. See *TCL Commc’ns Tech. Holdings*, 2018 WL 4488286, at *5. Accordingly, the undersigned finds no reason to disturb the previous finding that the JEDEC agreement is unenforceable. (1023 ID at 195-196.) The undersigned, however, notes that similar to the 1023 Investigation, none of the parties asserts that the JEDEC agreement is unenforceable and thus, the undersigned analyzes whether Netlist breached its RAND obligations below.

3. RAND Obligations

Netlist argues that it “fulfilled whatever RAND obligations it may have” and Respondents are engaging in a patent holdout. (CIB at 109-19.) Netlist contends that Respondents are using the same arguments previously raised and rejected in the 1023 Investigation and thus, fail to meet their burden on any RAND defense. (*Id.* at 113) According to Netlist: (1) it made multiple licensing offers to Respondents; (2) [REDACTED] (3) it provided Respondents with its underlying methodology and data, explained the methodology’s

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judicial origins to Respondents, and invited Respondents to discuss the approach; and (4) the Commission has already denied arguments that Netlist breached a RAND obligation. (*Id.*) Netlist contends that this demonstrates its good faith efforts to arrive at a RAND distribution of the profits that Respondents earn from implementing Netlist's SEPs. (*Id.*) In addition, Netlist argues that the determination in the 1023 Investigation confirms that its negotiations were consistent with whatever RAND obligations it may have. (*Id.*)

Respondents assert that Netlist's offers to Respondents have not been on terms that are "reasonable" and "demonstrably free of any unfair discrimination." (RIB at 101-117.) Respondents argue that new evidence shows [REDACTED] [REDACTED] [REDACTED] (RRB at 67 (citing RDX-3873; Hong, Tr. at 108:25-109:4, 125:12-130:19; Whitley, Tr. at 211:9-214:3, 217:17-220:22; RX-2220C; RX-580C), 71-77.) Respondents further contend that they are not engaging in a patent hold-out and are not unwilling licensees. (*Id.* at 77-78.) Respondents argue that their refusal to acquiesce to Netlist's licensing demands does not suggest that they negotiated in bad faith or engaged in a holdout because the determination in the 1023 Investigation found that they did not infringe any asserted patents, Netlist also has failed suits in Germany and China, and the PTO found every asserted claim invalid. (*Id.* at 78.) Respondents therefore maintain that their [REDACTED] is "if anything, generous." (*Id.*)

Staff submits that "if the Commission accepts the private parties' contention that the patents are essential, and then accepts the private parties' contention that an obligation exists, then the remaining question is whether the evidence shows that Netlist has failed to comply with the 'RAND obligation' in a manner that has caused harm to one of the Commission's public interest facts such that Commission's relief should be modified." (SIB at 109-10 (footnote omitted).) Staff

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argues that whether Respondents are required to take Netlist's highest license offer or are subject to an exclusion order, the effect in both cases is a high cost of the product for consumers. (*Id.* at 110.) Staff therefore contends that a six to twelve month delay would sufficiently mitigate the harm to the public interest in both cases. (*Id.*) In addition, Staff submits that evidence of increased cost/prices is generally not relevant to the public interest factors and thus, Staff argues that the evidence does not support deviating from the recommended six to twelve month delay even though this Investigation implicates a standard. (*Id.*) Staff also claims that the only material "new" evidence pertains to [REDACTED] (*Id.* at 111.) Staff asserts that the evidence shows that [REDACTED] and Netlist [REDACTED] (*Id.* (citing Sasaki, Tr. at 259:11-25).) Therefore, should the RAND issue require further adjudication, Staff contends that the evidence may support finding that [REDACTED] would be a relevant agreement for the purposes of a RAND rate analysis. (*Id.*) However, Staff states that "it would appear to be an inefficient use of Commission resources to determine a RAND rate for patents that have been determined to be unpatentable by the PTO." (*Id.*)

At the outset, it is important to reiterate that "the burden to prove an affirmative defense based on a breach of Complainant's RAND obligations lies with Respondents." (1023 ID at 192-93.) In the 1023 Investigation, the undersigned found that Respondents did not establish a violation of the JEDEC agreement by Netlist. (*Id.* at 195-97.) In particular, the undersigned found that the JDLA "is not the same type of agreement that is required under the JEDEC Patent Policy", the undersigned was "not persuaded by Respondents' argument that the [REDACTED] [REDACTED] [REDACTED]" and the undersigned found that "at the time [REDACTED] [REDACTED] Complainant apparently believed it was receiving valuable consideration from having [REDACTED]

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[REDACTED] (*Id.*) Therefore, the undersigned found that “Respondents have not made out a showing of unfair discrimination based on [REDACTED] (*Id.*) Thus, the central question here is whether Respondents have presented any evidence not considered in the 1023 Investigation that justifies a deviation from the determination in that investigation.

Staff contends that the only material new evidence since the 1023 Investigation is “the status of the [REDACTED] JDLA agreement and whether it may be applied as an ‘effective rate’” and Respondents argue that new evidence shows [REDACTED]

[REDACTED] (See SIB at 111; RRB at 67 (citing RDX-3873; Hong, Tr. at 108:25-109:4, 125:12-130:19; Whitley, Tr. at 211:9-214:3, 217:17-220:22; RX-2220C; RX-580C), 71-77.) The majority of this evidence, however, is not new and was considered in the 1023 Investigation. (See 1023 ID at 184-97.) For example, evidence showing Mr. Whitley’s “[REDACTED] [REDACTED] [REDACTED]” was considered in the 1023 Investigation. (See *id.*) Similarly, the JDLA itself, as well as evidence of various terms in the JDLA, were considered in the 1023 Investigation. (See *id.*)

Respondents present evidence showing that Netlist pursued various patent cases against Hynix and none of the cases found a Netlist patent valid and infringed, and that to comply with the obligations in the JDLA, [REDACTED]

[REDACTED] (See Hong, Tr. at 125:12-126:10; Whitley, Tr. at 219:2-220:22.) Moreover, the evidence shows that [REDACTED]

[REDACTED] and [REDACTED]

(Sasaki, Tr. at 259:11-25.) As in the 1023 Investigation, Respondents’ central argument here is that Netlist is obligated to offer them licensing terms comparable to the JDLA. (See, e.g., RRB at

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72.) The undersigned, however, finds that this evidence does not negate the conclusion from the 1023 Investigation that the JDLA is not the same type of agreement that is required under the JEDEC Patent Policy nor the finding that “at the time the JDLA was executed, Complainant apparently believed it was receiving valuable consideration from having [REDACTED] [REDACTED] [REDACTED] (See 1023 ID at 195-96.) Therefore, Respondents have failed to show why the undersigned should deviate from the previous determination in the 1023 Investigation that Respondents have not made out a showing of unfair discrimination based on the JDLA. (See *id.*)

Accordingly, even assuming the Asserted Patents are standard essential and the JEDEC agreement is enforceable, the undersigned finds no reason to deviate from the previous determination that Netlist did not violate its RAND obligations. (See *id.* at 196-97.) Therefore, the undersigned finds that the evidence does not support foregoing or delaying an exclusion order on the basis of a RAND obligation by Netlist. However, even if the Commission were to find that Netlist breached its RAND obligations, the undersigned agrees with Staff that the practical effect would be a high product cost for consumers, which would be sufficiently mitigated by a six to twelve month delay for imposition of an exclusion order. (See SIB at 110.) Moreover, as Staff notes, the Commission has found that “evidence that an exclusion order could lead to higher prices is not dispositive of the public interest.” See *Certain Automotive Parts*, Inv. No. 337-TA-557, Comm’n Op. at 12-13 (July 5, 2007) (citing *Certain Crystalline Cefadroxil Monohydrate*, Inv. No. 337-TA-293, Comm’n Op. at 6 (Jan. 1990)). Thus, the undersigned finds that even if the Commission determines that Netlist breached its RAND obligations, the evidence does not support recommending deviation from the previously stipulated six to twelve month delay for imposition of an exclusion order.

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4. Recommendation

Based on the foregoing, the undersigned recommends that should the Commission find a violation, entry of an exclusion order be delayed by six to twelve months.

XI. INITIAL DETERMINATION

Based on the foregoing, it is the Initial Determination of the undersigned that Respondents do not infringe any asserted claim of U.S. Patent No. 9,525,623, but do infringe the asserted claims 1-8, 10, 12, 14, and 15 of U.S. Patent No. 9,606,907. The undersigned further determines that asserted claims 1, 2, 3, 4, 5, 7, 8, 10, 14, and 15 of the '907 patent have been shown to be invalid, but claims 6 and 12 have not been so shown. Additionally, the domestic industry requirement has been satisfied for the '907 patent, but not for the '623 patent.

The undersigned hereby CERTIFIES to the Commission this Initial Determination and the Recommended Determination. The parties' briefs, which include the final exhibits lists, are not certified as they are already in the Commission's possession in accordance with Commission rules. *See* 19 C.F.R. § 210.38(a).

The Secretary shall serve the confidential version of this Initial Determination upon counsel who are signatories to the Protective Order (Order Nos. 1, 3) issued in this Investigation. A public version will be served at a later date upon all parties of record.

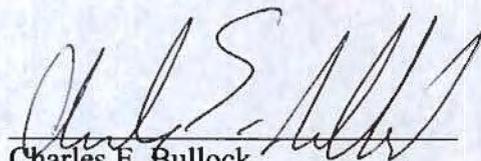
Pursuant to 19 C.F.R. § 210.42(h), this Initial Determination shall become the determination of the Commission unless a party files a petition for review pursuant to 19 C.F.R. §210.43(a) or the Commission, pursuant to 19 C.F.R. § 210.44, orders on its own motion a review of the Initial Determination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

Within ten days of the date of this document, the parties shall submit to the Office of Administrative Law Judges a joint statement regarding whether or not they seek to have any portion of this document deleted from the public version. The parties' submission shall be made

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by hard copy and must include a copy of this Initial Determination with red brackets indicating any portion asserted to contain confidential business information to be deleted from the public version.²³ The parties' submission shall include an index identifying the pages of this document where proposed redactions are located. The parties' submission concerning the public version of this document need not be filed with the Commission Secretary.

SO ORDERED.


Charles E. Bullock
Chief Administrative Law Judge

²³ If the parties submit excessive redactions, they may be required to provide an additional written statement, supported by declarations from individuals with personal knowledge, justifying each proposed redaction and specifically explaining why the information sought to be redacted meets the definition for confidential business information set forth in Commission Rule 201.6(a). 19 C.F.R. § 201.6(a).

PUBLIC CERTIFICATE OF SERVICE

I, Lisa R. Barton, hereby certify that the attached **PUBLIC VERSION FINAL INITIAL DETERMINATION ON VIOLATION OF SECTION 337 AND RECOMMENDED DETERMINATION ON REMDY AND BOND** has been served by hand upon the Commission Investigative Attorney, **Monisha Deka, Esq.**, and the following parties as indicated, on **11/4/2019**.



Lisa R. Barton, Secretary
U.S. International Trade Commission
500 E Street SW, Room 112A
Washington, DC 20436

FOR COMPLAINANT NETLIST, INC.	
James M. Wodarski, Esq. MINTZ LEVIN COHN FERRIS GLOVSKY and POPEO PC One Financial Center Boston, MA 02111	<input type="checkbox"/> Via Hand Delivery <input checked="" type="checkbox"/> Express Delivery <input type="checkbox"/> Via First Class Mail <input type="checkbox"/> Other: _____
FOR RESPONDENTS SK HYNIX, INC., SK HYNIX AMERICA, INC. and SK HYNIX MEMORY SOLUTIONS, INC.	
Michael R. Franzinger, Esq. SIDLEY AUSTIN LLP 1501 K Street NW Washington, DC 20005	<input type="checkbox"/> Via Hand Delivery <input checked="" type="checkbox"/> Express Delivery <input type="checkbox"/> Via First Class Mail <input type="checkbox"/> Other: _____