

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

AMPHENOL CORPORATION,
Petitioner,

v.

CREDO TECHNOLOGY GROUP LTD.,
Patent Owner

Case IPR2025-00834
U.S. Patent No. 11,012,252

PATENT OWNER'S REQUEST FOR DISCRETIONARY DENIAL

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LIST OF EXHIBITS

- Ex-2001 Order No. 6: Setting Procedural Schedule, *In the Matter of Certain Active Electrical Cables and Components Thereof*, Inv. No. 337-TA-1446, issued May 19, 2025
- Ex-2002 September 1, 2023 Letter re Credo Technology Group, Ltd.’s Intellectual Property
- Ex-2003 USPTO, “FAQs for Interim Processes for PTAB Workload Management,” *available at* <https://www.uspto.gov/patents/ptab/faqs/interim-processes-workload-management>
- Ex-2004 “Credo Introduces PAM4 DSP for High Performance Data Centers and Enterprise Networks,” March 17, 2021, <https://credosemi.com/credo-introduces-pam4-dsp-for-high-performance-data-centers-and-enterprise-networks/>
- Ex-2005 “AEC Applications,” <https://credosemi.com/products/hiwire-aec/applications/>
- Ex-2006 “Credo Introduces 800G HiWire ZeroFlap AECs to Support AI Backend Networks,” October 10, 2024, *available at* https://s205.q4cdn.com/511065572/files/doc_news/2024/10/credo-introduces-800g-hiwire-zeroflap-aecs-to-support-ai-backend-networks.pdf
- Ex-2007 Respondents’ Initial Invalidity Contentions, *In the Matter of Certain Active Electrical Cables and Components Thereof*, Inv. No. 337-TA-1446, served June 26, 2025
- Ex-2008 Exhibit B-1, Patent Invalidity Chart (Lugthart414), Respondents’ Initial Invalidity Contentions, *In the Matter of Certain Active Electrical Cables and Components Thereof*, Inv. No. 337-TA-1446, served June 26, 2025

Ex-2009	Exhibit B-2, 252 Patent Invalidity Chart (Tang), Respondents' Initial Invalidity Contentions, <i>In the Matter of Certain Active Electrical Cables and Components Thereof</i> , Inv. No. 337-TA-1446, served June 26, 2025
Ex-2010	RESERVED
Ex-2011	RESERVED
Ex-2012	Exhibit B-11, 252 Patent Invalidity Chart (Aronson727, TI-Retimer), Respondents' Initial Invalidity Contentions, <i>In the Matter of Certain Active Electrical Cables and Components Thereof</i> , Inv. No. 337-TA-1446, served June 26, 2025
Ex-2013	U.S. Pat. No. 10,148,414 ("Lugthart414")
Ex-2014	U.S. Pat. Pub. No. 2007/0237464 ("Aronson464")
Ex-2015	RESERVED
Ex-2016	Bert Reiser & Ruthie Wu, Why the International Trade Commission is such an appealing forum for patent disputes," <i>Reuters</i> (June 11, 2025), https://www.reuters.com/legal/legalindustry/why-international-trade-commission-is-such-an-appealing-forum-patent-disputes-2025-06-11/
Ex-2017	United States International Trade Commission, Section 337 Statistics: Average Length of Investigations, Updated 4/11/2025, https://www.usitc.gov/intellectual_property/337_statistics_average_length_investigations.htm
Ex-2018	RESERVED
Ex-2019	RESERVED
Ex-2020	U.S. Pat. No. 7,401,985 ("Aronson985")

I. INTRODUCTION

Credo is an American innovator. Its patented technologies power the next generation of energy-efficient data center interconnects. The subject patent of this IPR proceeding—U.S. Pat. No. 11,012,252 (“the ’252 patent”)—is one of three patents asserted in a pending Section 337 investigation before the International Trade Commission (ITC) (Inv. No. 337-TA-1446). These patents are not abstract ideas or litigation assets; they are the foundation of Credo’s HiWire® active electrical cable (AEC) products. The patents were obtained through careful and transparent examination by the Office. Credo is thereby asserting its patents rights after having built real products around this domestic innovation.

The ITC Investigation underscores the stakes associated with these patents and the urgency of their enforcement. Credo is seeking exclusionary relief to protect its core technology from infringement by competitors, including, among others, Petitioner Amphenol. This case is advancing quickly—the ITC has instituted the investigation and is proceeding toward an evidentiary hearing on the merits. Even under the most conservative timeline comparison, the Commission is expected to issue a Final Determination on October 15, 2026, **before** the Final Written Decision is expected on November 12, 2026 (“FWD Date”). The ITC will therefore have adjudicated validity of the subject patent before the PTAB reaches the FWD Date, resulting in judicial inefficiency. Meanwhile, the underlying legal

and factual issues before the ITC and the PTAB are the same. The patents are the same. The parties are the same. And the asserted prior art and challenged claims are virtually identical.¹ *Fintiv* therefore supports discretionary denial.

Beyond *Fintiv*, this proceeding presents precisely the situation the Office's leadership envisioned when the Stewart Memo² was issued in March 2025. That memo reaffirmed the Acting Director's authority to deny institution not only to prevent inefficient use of the Board's resources, but also to protect the integrity of the patent system as a whole. That integrity depends on the reasonable expectations of patent owners who play by the rules, prosecute diligently, disclose truthfully, and invest in commercialization.

Credo did all of this. It earned its patents under a well-functioning patent examination process before the Office. It also built a domestic industry around the

¹ Amphenol's preliminary invalidity contentions before the ITC include references with different patent numbers, but have near-identical disclosures to references included in its IPR grounds (each of which are similarly relied upon by Amphenol for addressing invalidity). See §IV.A.4, *infra* (addressing *Fintiv* factor 4).

² Memorandum to All PTAB Judges from Coke Morgan Stewart, Acting Secretary of Commerce for Intellectual Property, Regarding the Interim Processes for PTAB Workload Management (March 26, 2025) ("Stewart Memo").

patents. And now, it is using those patents productively in a good-faith enforcement campaign. Amphenol, for its part, is simply recycling the same pool of decade-old prior art—repackaged, recombined, and re-litigated—to gum up the gears of that enforcement effort.

This scenario is not what IPR was designed to enable. And it is what discretionary denial was designed to prevent. The PTAB’s resources are not appropriate to adjudicate issues the party seeking review (i.e., petitioner) sought to litigate elsewhere.³ The PTAB is a component of a balanced and efficient patent system, entrusted with the authority to decline review when institution would undermine—not promote—fairness, efficiency, and technological progress. Institution denial of the subject proceeding under § 314(a) advances these objectives and is necessary to protect the role of the PTAB as a partner in a functional U.S. patent system. Adoption of the bifurcated process reflects a clear policy shift toward protecting patent owner expectations and avoiding duplicative proceedings—precisely the situation presented here.

³ The issues before the ITC and the PTAB pertaining to the ’252 patent are nearly identical (same prior art, claims at-issue). Despite this overlap, Amphenol has not filed a stipulation or otherwise pursued any narrowing. See §IV.A.4, *infra* (addressing *Fintiv* factor 4).

II. CREDO'S PATENTED TECHNOLOGY

The application that issued as the '252 patent was filed on August 13, 2019, and issued on May 18, 2021. Credo is the original assignee and owner of the '252 patent. The patent was neither recently-acquired nor dormant. Instead, it arose directly from Credo's own research and development into active electrical cable (AEC) technology, i.e., high-speed Ethernet cables with integrated digital signal-processing electronics.

The '252 patent also protects Credo's AEC products. It embodies critical features of the AEC products that improve cable performance, such as advanced transmitter and receiver equalization, adaptive equalization, and retiming. *See* Ex-1035, 5-12⁴ (summarizing the technology and products at issue and the asserted patents).

The '252 patent is critically important to Credo by virtue of its protection of AEC products offered by Credo. These products have led to meaningful commercial uses, such “high-performance serial connectivity solutions for the Hyperscale data center, 5G carrier, enterprise networking, artificial intelligence, and high-performance computing markets.” Ex-2004; *see also* Ex-2005 (“The

⁴ Unless otherwise indicated, citations to page numbers in this Request refer to page numbers specified in the corresponding document.

demand for cloud computing, instant data streaming, and emerging applications including 5G, AI, and machine learning have pushed Hyperscale, enterprise and edge data centers to accelerate the deployment of 400G and 800G networks”).

By 2024, Credo reported “millions of units” of AEC products deployed at tier-1 hyperscaler customers. *See* Ex-2006. The AEC products have won industry awards and play a significant role in modern data center architectures. *Id.* Credo’s senior VP of product noted that the company “invented AECs” based on years of engineering and has invested tens of millions of dollars developing this pioneering technology. *Id.* Credo’s long-term investment and active marketing underscore how these patents are central to Credo’s business, not idle paper patents. Indeed, Credo’s overall solutions portfolio explicitly includes AEC cables alongside its semiconductor integrated circuit (IC) products. Protecting these patented AEC innovations is strategically vital for Credo’s competitive position in high-speed connectivity.

III. LEGAL STANDARDS

A. Discretionary Denial Under 35 U.S.C. § 314(a)

Instituting or denying a petition under §314(a) “is a matter committed to the Patent Office’s discretion.” *Cuozzo Speed Techs., LLC v. Lee*, 579 U.S. 261, 273 (2016); *see also Harmonic Inc. v. Avid Tech., Inc.*, 815 F.3d 1356, 1367 (Fed. Cir. 2016) (under §314(a) “the PTO is permitted, but never compelled, to institute an

IPR proceeding”). In *NHK*, the Board used its discretion to deny institution under §314(a) because the parallel district court proceeding was scheduled to end before the FWD deadline and “Petitioner assert[ed] the same prior art and arguments” in that parallel proceeding. *NHK Spring Co Ltd v. Intri Plex Technologies Inc.*, IPR2018-00752, Pap. 8, at 19-20 (Sep. 10, 2019).

Fintiv articulated six factors (*infra* §V.A) to consider in determining whether to exercise discretion to deny institution based on a parallel district court or ITC proceeding. *Apple Inc. v. Fintiv, Inc.*, IPR2020-00019, Pap. 11, at 5-6 (Mar. 20, 2020) (“*Fintiv*”). The factors are evaluated by taking “a holistic view of whether efficiency and integrity of the system are best served by denying or instituting review.” *Id.*

The Office has also made clear that “the Board will apply the *Fintiv* factors when there is a parallel proceeding at the International Trade Commission (‘ITC’).” Boalick Memo, at 2.⁵ Further, “the Board is more likely to deny institution where the ITC’s projected final determination date is earlier than the Board’s deadline to issue a final written decision...” *Id.*

⁵ Memorandum, Guidance on USPTO’s rescission of “Interim Procedure for Discretionary Denials in AIA Post-Grant Proceedings with Parallel District Court Litigation (Mar. 24, 2025), at 2 (“Boalick Memo”)

B. Recent USPTO Guidance

The Stewart Memo specified a bifurcated approach for considering discretionary denial, and further identified additional considerations for discretionary denial:

- Whether the PTAB or another forum has already adjudicated the validity or patentability of the challenged patent claims;
- Whether there have been changes in the law or new judicial precedent issued since issuance of the claims that may affect patentability;
- The strength of the unpatentability challenge;
- The extent of the petition’s reliance on expert testimony;
- Settled expectations of the parties, such as the length of time the claims have been in force;
- Compelling economic, public health, or national security interests; and
- Any other considerations bearing on the Director’s discretion

As explained below, denial is warranted under 35 U.S.C. § 314(a) based on these additional factors. Credo has developed settled expectations and yet there is no sufficient justification for institution. *See* §IV.B.1, *infra*. Furthermore,

Amphenol’s contentions in its Petition rely on expert testimony to gap-fill prior art disclosures in addressing limitation [1.e]. *See* §IV.B.2, *infra*. Thus, institution denial is appropriate under these circumstances to “improve PTAB efficiency,

maintain PTAB capacity to conduct AIA proceedings, . . . and promote consistent application of discretionary considerations in the institution of AIA proceedings.”

Stewart Memo, 3.

IV. DISCRETIONARY FACTORS FAVOR INSTITUTION DENIAL

A. The *Fintiv* Factors Weigh In Favor Of Discretionary Denial

The Petition should be denied institution because (i) at least factors 1-5 support discretionary denial; and (ii) the Petition does not provide a strong meritorious challenge (factor 6).

1. Factor 1—The ITC Investigation Will Not Be Stayed

No stay has been requested in the ITC investigation. And if one were, the stay is unlikely to be granted. Ex-2016, 2 (“discovery proceeds at a more expedited pace in the ALJ setting, and ITC proceedings are **rarely stayed**”) (emphasis added). The ITC is under a congressional mandate to conclude its investigations and make determinations “at the earliest practicable time.” 19 U.S.C. § 1337(b)(1). The ITC typically does not stay its proceedings based on a pending IPR.

2. Factor 2—The ITC’s Projected Final Determination Date Is Earlier Than The FWD Deadline

The projected statutory deadline for issuing a FWD in this proceeding is November 12, 2026 (“FWD Date”). By contrast, the Commission is expected to

issue a Final Determination on October 15, 2026. Thus, the ITC is scheduled to complete its investigation around 19 months after the March 13, 2025 filing date of the ITC complaint. This schedule is more conservative than the ITC's average length of investigations in the past 10 years. *See* Ex-2017 (average length for Fiscal Years 2014 to 2024 never reached 19 months). Further, in the first two quarters of Fiscal Year 2025 ("FY2025"), the average length of Section 337 investigations was 18.04 and 18.2 months, respectively, resulting in an average length of 18.12 months over the first half of 2025. *See* Ex-2017. Based on this average statistic for FY2025, the ITC Investigation would be expected to complete in September 2026—a month earlier than the scheduled completion date.

As such, it is unlikely that the FWD in this proceeding will issue before the ITC completes its investigation. *See Caihong Display Devices Co. Ltd v. Corning, Inc.*, IPR2025-00439, Pap. 18, at 2 (Jul. 10, 2025) ("*Caihong*") (finding that "it is unlikely that a final written decision in this proceeding will issue before the final determination in the ITC investigation" because "the projected final written decision due date for this proceeding is September 10, 2026" and "the target date for completion is August 7, 2026"); *see also* Boalick Memo, 2 ("[I]nstituting an IPR or a PGR where the ITC has set a target date for completing its investigation (i.e., the full Commission's final determination) to occur earlier than the Board's deadline to issue a final written decision in a challenge involving the same patent

claims means that multiple tribunals may be adjudicating validity at the same time, which may increase duplication and expenses for the parties and the tribunals”).

Fintiv factor 2 therefore weighs in favor of denial. *See Biofrontera Inc. v. Sun Pharmaceutical Industries, Inc.*, IPR2025-00287, Pap. 10 (Jul. 2, 2025) (Director discretionary decision denying institution based on a parallel ITC investigation scheduled to complete before FWD); *see also Ringconn LLC, v. Ouraring, Inc.*, PGR2025-00018, Pap. 11 (Jun. 25, 2025) (same); *see also Ultrahuman Healthcare SP LLC et al. v. Ouraring Inc.*, IPR2025-00411, Pap. 12 (Jun. 25, 2025) (same).

As discussed in §IV.A.4, *infra*, the ITC Investigation also presents overlapping issues with the IPRs, including Amphenol’s reliance on substantially the same prior art and arguments. Amphenol has not filed a stipulation or otherwise narrowed its invalidity positions before the ITC in a manner that prevents duplication. Thus, the Commission’s early resolution will directly address the asserted grounds of unpatentability in this proceeding. If the Board were to proceed, it would not be providing an efficient alternative to litigation but rather a second, duplicative review of issues already adjudicated.

3. *Factor 3—Fact Discovery And Expert Reports Will Complete Before A Decision On Institution*

Factor 3 weighs in favor of discretionary denial because the parties will have committed significant resources to the ITC Investigation by the time this

proceeding reaches a Decision on Institution (DI), and that investment will only increase materially if the proceeding progresses to a final written decision (by November 2026).

The deadline for issuing the DI is November 12, 2025. By that time, the parties to the ITC Investigation will have already: (i) exchanged proposed claim constructions (July 28, 2025), (ii) completed fact discovery (September 12, 2025), and (iii) exchanged initial expert reports (October 1, 2025) and rebuttal expert reports (October 31, 2025). Indeed, expert discovery will be complete by November 14, 2025—only two days after the expected DI. Ex-2001, 2. In practical terms, the ITC investigation will be well past the halfway point and approaching expert discovery cut-off by the time the PTAB even considers institution. *Caihong*, at 2 (finding that “there has been meaningful investment” in a parallel ITC investigation because the parties will “have exchanged expert reports” and “complete fact discovery before a decision on institution is due”); *Arashi Visionus LLC v. GoPro Inc.*, IPR2025-00017, Pap. 11, at 11 (Apr. 28, 2025).

If this proceeding is instituted, the parties’ investment in the ITC Investigation will only materially increase by the FWD Date. The evidentiary hearing in the ITC Investigation is scheduled to be completed the week of January 20, 2026—over 10 months before the FWD. Ex-2001, 3. Further, an initial

determination in the ITC Investigation is scheduled to issue on June 15, 2026 (roughly five months before FWD) and the target date for completion of the ITC Investigation is October 15, 2026 (roughly a month before FWD). Ex-2001, 2.

4. *Factor 4—Complete Overlap Exists Between The Petition And The ITC Investigation And Amphenol Has Not Stipulated Otherwise*

Amphenol relies on the same prior art disclosures to address the same claims of the '252 patent (claims 1-14) before the ITC and the PTAB. Compare Ex-2007, 134, and Pet., 2. This overlap is summarized in the table below with respect to prior art that Amphenol applies as primary references in each forum.

Preliminary Invalidity Contentions (ITC)			IPR Grounds (PTAB)		
Claims	Reference	Exhibit	Claims	Reference	Exhibit
1-14	Lugthart414	Ex-2013	1-14 (Ground 1)	Lugthart933	Ex-1005
1-14	Tang	Ex-1007	1-4, 6-9, 11-14 (Ground 2)	Tang	Ex-1007
1-4, 6-14	Aronson727	Ex-1006	1-14 (Grounds 1, 2)	Aronson727	Ex-1006

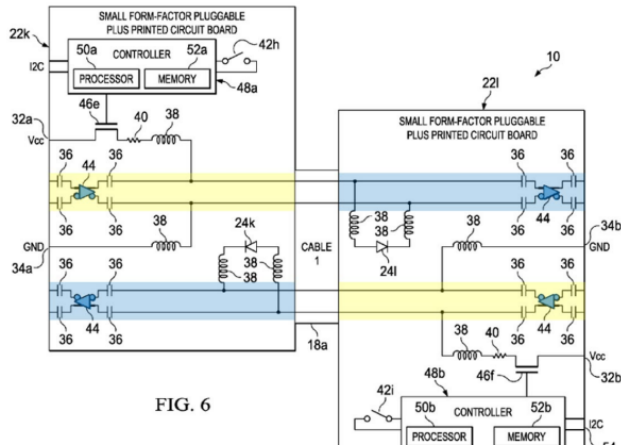
1, 2, 6, 7, 11, 12	TI-Retimer	Ex-1008	1-4, 6-9, 11-14 (Ground 2)	TI-Retimer	Ex-1008
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a) Amphenol Applied the Same Disclosure From The Same Tang Reference Before the ITC and the PTAB

Amphenol relied upon the same Tang reference (U.S. Pat. App. No. 2013/0115803) before the ITC and the PTAB. *See* Ex-2009 (Exhibit B-2 to Amphenol’s preliminary invalidity contentions, with invalidity contentions with respect to Tang); Pet., 65-97 (IPR Ground based on Tang+TI-Retimer+Aronson727).

The overlap is further confirmed by Amphenol’s reliance on the same prior art disclosure from the Tang reference in its invalidity positions in each forum. In addressing claim 1, Amphenol’s invalidity contentions based on Tang and its IPR ground based on Tang include the same annotated figure 6 from Tang. *Compare* Ex-2009, 9-10, *and* Pet., 85-87. To illustrate, below are excerpts from relevant portions of Amphenol’s claim chart based on Tang (Ex-2009) and its Petition based on Tang addressing limitation [1.e]:

Amphenol's Preliminary Invalidity Contentions Based on Tang in the ITC

1[e] the respective transceivers each employing fixed, cable-independent equalization parameters for each of: the remodulation of the transit data stream as the outbound data stream, and the clock and data recovery performed on the electrical input signal.	Tang discloses and/or renders obvious this limitation. Tang's transceivers handle both the inbound data stream and the outbound data stream as highlighted blue and yellow, respectively, in Tang Fig. 6 below.  FIG. 6 To the extent that this limitation is not disclosed, either explicitly or inherently, by Tang, this limitation is
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Ex-2009, 9

Amphenol's IPR Ground Based on Tang in the PTAB

7. Limitation [1.E]

Tang+TI-Retimer+Aronson's *transceivers* (TI-Retimer's retimer) each performs equalization *for the remodulation of the transit data stream as the outbound data stream* (by the retimer's FIR filter) and *for the [CDR] performed on the electrical input signal* (by the retimer's EQ), both using *fixed cable-independent parameters*. Min, ¶292.

As explained *supra* §§VII.C (explaining the combination), VII.D.5 ([1.C]) and VII.D.6 ([1.D]), in Tang+TI-Retimer+Aronson, TI-Retimer's retimer implements Tang's signal driver 44 and handles both the inbound data stream and the outbound data stream as highlighted blue and yellow, respectively, in Tang Fig. 6 below. Min, ¶293.

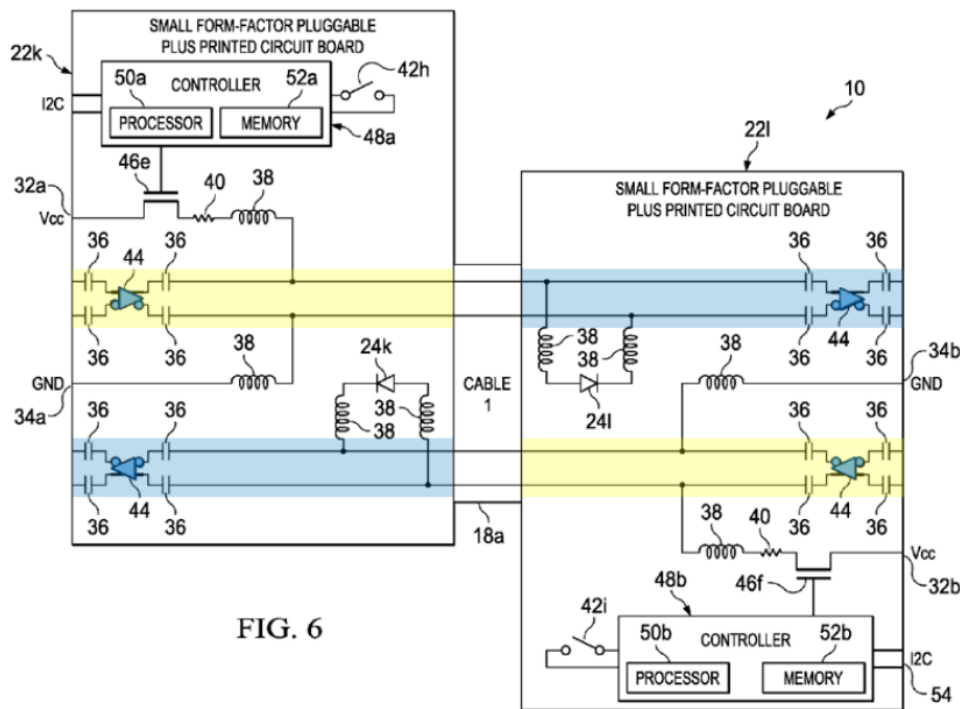


FIG. 6

Pet., 85-86

b) Amphenol Applied The Same Disclosure from Near-Identical Lugthart References Before the ITC and the PTAB

Amphenol also applied U.S. Pat. No. 10,148,414 (Lugthart414; Ex-2013) in its preliminary invalidity contentions before the ITC, which has nearly-identical disclosures to U.S. Pat. No. 9,337,993 (Lugthart993; Ex-1005) applied in Ground 1 of the Petition.

Lugthart414 and Lugthart993 have near-identical prior art disclosures. Each of their 32 figures are identical (FIGS. 1A-1D, 2A, 2B, 3A-3C, 4A, 4B, 5, 6A, 6B, 7A, 7B, 8, 9A, 9B, 10, 11, 12A, 12B, 13A-13C, 14-16, 17A, 17B, 18). And as to

their written description, a side-by-side review confirms no meaningful difference in technical substance. Amphenol’s contentions confirm this overlap, since they rely on the **same disclosures** found in each reference in addressing key claim limitations. Indeed, in addressing claim 1, Amphenol’s invalidity contentions based on Lugthart414 and its IPR grounds based on Lugthart993 include the same annotated figures. *Compare* Ex-2008, 2-14, and Pet., 29-46. To illustrate, below are excerpts from relevant portions of Amphenol’s claim chart based on Lugthart414 (Ex-2008) and its Petition based on Lugthart993 addressing limitation [1.e]:

Amphenol’s Preliminary Invalidity Contentions Based on Lugthart414 in the ITC

1[e] the respective transceivers each	Lugthart '414 discloses and/or renders obvious this limitation. Claim limitation 1[e] recites using “fixed cable-independent equalization parameters” for the equalizing the
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Claim 1	Lugthart '414
employing fixed, cable-independent equalization parameters for each of: the remodulation of the transit data stream as the outbound data stream, and the clock and data recovery performed on the electrical input signal.	input signal from the host and pre-equalizing the outbound data stream to the host. The transceivers (107a/107b) of Lugthart '414 performs equalization for the remodulation of the transit data stream as the outbound data stream (by FIRs 27a/27b coupled to DACs 24a/24b) and for the [CDR] performed on the electrical input signal (by equalizers 11a/11b), both using fixed cable-independent parameters as detailed below. Electrical Input Signal The equalizers 11a/11b of Lugthart '414 equalize the electrical input signal conveying inbound data stream TX DATA so CDR circuits 12a/12b and FFE/DFE 15a/15b perform clock and data recovery on the equalized input signal. <i>See, e.g.,</i> claim limitation 1[c], Lugthart '414 at Fig. 1A (below). FIG. 1A Equalizers 11a/11b “compensate for transmission line losses on the host side” so an ordinarily skilled

Claim 1	Lugthart '414
	artisan understood they use at least some parameters that are cable-independent equalization parameters. <i>See, e.g.</i>, Lugthart '414 at 9:14-29. As explained for claim limitation 1[c], the '252 Patent performs equalization before performing CDR, and thus claim limitation 1[e]'s requirement that the transceiver employ equalization parameters "for ... the [CDR]" is properly construed to cover equalization by an equalizer before a CDR circuit performs CDR on the equalized signal, as disclosed by Lugthart '414. <i>See, e.g.</i>, EDTX Exhibit 5 at 11-25 (discussed claim limitation 1[c]). <i>Outbound Data Stream</i> The FIRs 27a/27b of Lugthart '414 provide output pre-emphasis in the remodulation of the transit data stream as the outbound data stream performed by PCS 26 and FIRs 27a/27b and DACs 24a/24b. <i>See, e.g.</i>, claim limitation 1[d], Lugthart '414 at Fig. 1A (below).

Ex-2008, 12-13 (excerpted)

Amphenol's IPR Ground Based on Lugthart993 in the PTAB

a. *electrical input signal*

Lugthart-993's equalizers 11a/11b equalize the *electrical input signal*

conveying inbound data stream TX DATA so CDR circuits 12a/12b and

FFE/DFE 15a/15b perform *clock and data recovery* on the equalized input signal.

§VI.D.5 ([1.C]) *supra*; Lugthart-993, Fig. 1A (below).

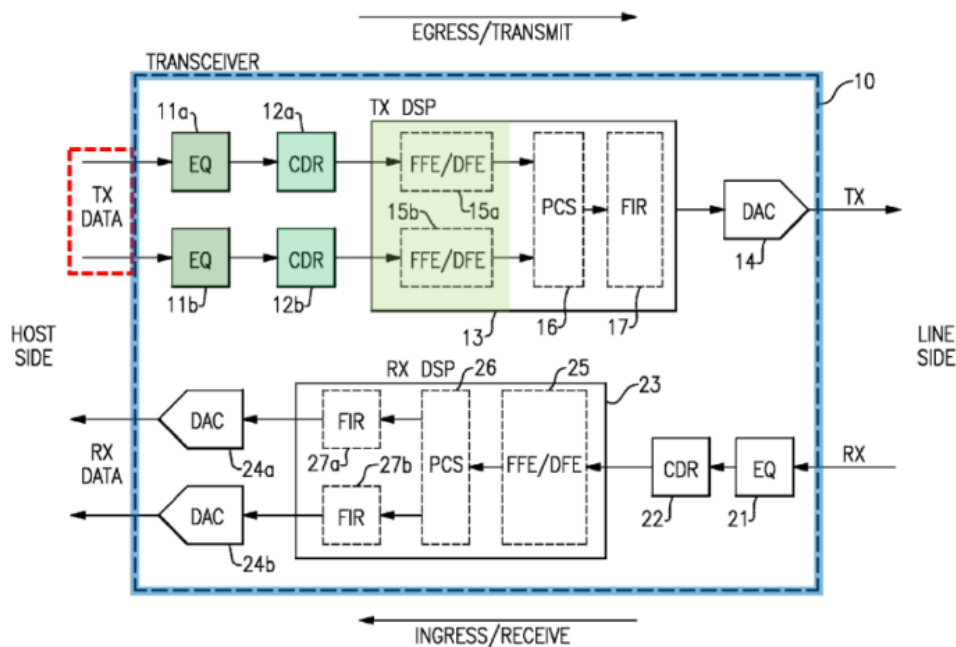


FIG.1A

Equalizers 11a/11b “compensate for transmission line losses on the *host*

side” so POSAs understood they use at least some *parameters* that are *cable-independent equalization parameters*. Lugthart-993, 8:58-9:5; §VI.C.1 *supra*; Min,
¶¶185-186.

As shown above, in addressing the “electrical input signal” recited in limitation [1.e], Amphenol relies on the same (1) identical annotated figure from Lugthart414 and Lugthart993, (2) the same prior art disclosures (Lugthart414, 9:14-29; Lugthart993, 8:58-9:5), and (3) the same disclosed elements (e.g., equalizers 11a/11b) within that disclosure. The cited portions of Lugthart414 and Lugthart993 are reproduced below:

The receive path equalizer 21 can be used to provide signal equalization to compensate for transmission line losses on the line side, and the first and second transmit path equalizers 11a, 11b can be used to provide signal equalization to compensate for transmission line losses on the host side. For example, in certain implementations, an equalizer can be used to compensate for high-frequency signal loss by boosting high frequency components of a signal relative to low frequency components of the signal, thereby improving signal fidelity. In certain configurations, an equalizer can also be

used for balancing amplitude and/or frequency characteristics associated with non-inverted and inverted components of a differential signal. In one embodiment, the transmit path equalizers 11a, 11b and/or the receive path equalizer 21 are implemented as continuous-time linear equalizers (CTLEs).

The receive path equalizer 21 can be used to provide signal equalization to compensate for transmission line losses on the line side, and the first and second transmit path equalizers 11a, 11b can be used to provide signal equalization to compensate for transmission line losses on the host side. For example, in certain implementations, an equalizer can be used to compensate for high-frequency signal loss by boosting high frequency components of a signal relative to low frequency components of the signal, thereby improving signal fidelity. In certain configurations, an equalizer can also be used for balancing amplitude and/or frequency characteristics associated with non-inverted and inverted components of a differential signal. In one embodiment, the transmit path equalizers 11a, 11b and/or the receive path equalizer 21 are implemented as continuous-time linear equalizers (CTLEs).

Ex-1005 (Lugthart993), 8:58-9:5 (left); Ex-2013 (Lugthart414), 9:14-29 (right)

Amphenol's strategy reflects a deliberate attempt to use prior art references with different patent numbers to avoid discretionary denial.

c) Amphenol Applied the Same Disclosure From Aronson727 (Ex-1006) Before the ITC and the PTAB

Amphenol relied upon the same Aronson727 reference (U.S. Pat. No. 7,762,727) before the ITC and the PTAB. See Ex-2012 (Exhibit B-11 to Amphenol's preliminary invalidity contentions, with invalidity contentions with respect to Aronson727), 229-30; Pet., 44-45 (analysis of Limitation [1.e] based on Lugthart993+Aronson727).

The overlap is further confirmed by Amphenol's reliance on the same prior art disclosure from Aronson727 in its invalidity positions in each forum. In addressing limitation [1.e], Amphenol's invalidity contentions and its IPR ground each rely on 7:17-20, 14:19-23, 15:1-8, 5:17-24, and Figures 12A and 12B of

Aronson727. Compare Ex-2012, 229-30, and Pet., 14-20, 41-46, 71, 87. To illustrate, below are excerpts from relevant portions of Amphenol’s claim chart based on Aronson727 (Ex-2012) and its Petition based on Aronson727 addressing limitation [1.e]:

Amphenol’s Preliminary Invalidity Contentions Based on Aronson727 in the ITC

Claim 1	Disclosure
	Aronson discloses an active cable for high-speed transmissions between network nodes. See, e.g., Aronson at Abstract, 1:12-21. While Aronson’s title recites an optical cable, Aronson also discloses copper twisted-pair or coaxial cables like Lugthart ’414. See, e.g., <i>id.</i> at 1:29-2:23, 7:17-20. Figures 12A-12B (below) illustrate features “incorporated into the ICs in a copper active cable design.” See, e.g., <i>id.</i> at 14:16-15:24. FIG. 12A FIG. 12B Figure 12A’s circuit processes TX signals from the host and transmits signals over the cable, where equalization “compensat[es] for high frequency loss in the host board traces,” and pre-equalization overcomes loss on the cable and “match[es]” loss from “the particular length [and] characteristics of the copper cabling.” See Aronson at 14:16-43. Figure 12B’s circuit handles dataflow in the other direction: it receives RX signals from the cable, performs equalization “to compensate for” cable losses, and—before transmitting to the host—performs pre-emphasis to “overcome high frequency losses on long [host-side] PCB traces.” See, e.g., <i>id.</i> at 15:1-6, 15:17-24. Signal pre-emphasis and/or equalization can be “fixed, adjustable, or adaptable.” See, e.g., <i>id.</i> at Abstract, 14:19-23, 14:33-34, 15:1-8, 15:17-23.

Claim 1	Disclosure
	Aronson discloses the host-side equalization and pre-equalization use fixed cable-independent parameters to address host-side losses. See, e.g., Aronson at 12:10-17, 14:16-23, 15:17-24. “Fixed” parameters reduced complexity and manufacturing costs. See, e.g., U.S. Patent No. 7,239,665 at 1:7-18 (discussing slow convergence with adaptive equalization); U.S. Patent App. Pub. No. 2011/0228821 at [0009]-[0011] (discussing tradeoffs between fixed and adaptive equalization); U.S. Patent No. 6,621,862 at 1:52-55 (large gate count for adaptive equalization can cause “high chip costs”); U.S. Patent App. Pub. No. 2006/0045176 at [0034] (“The adaptive equalizer can be trapped in a failure state (i.e., incorrect state) and not able to recover from the failure state.”); U.S. Patent App. Pub. No. 2017/0187463 at [0058] (“[E]qualization techniques... come with different engineering tradeoffs, including trade-offs in power consumption, performance, and/or cost.”).

Amphenol's IPR Ground Based on Aronson727 in the PTAB

Aronson's PCB traces are on the host (Aronson, 15:1-8 ("host PCB traces"))
so pre-equalization parameters addressing them are *cable-independent*. Min,
¶137.

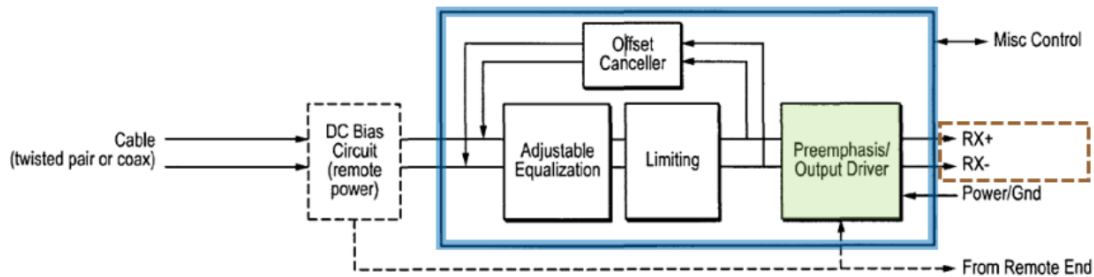


FIG. 12B

Aronson's teachings to use *cable-independent* parameters to perform
equalization compensating for *host-side losses* gave POSAs reason to implement
Lugthart-993 in the same manner. Min, ¶138.

Pet., 17 (annotated)

fixed parameters

Aronson also teaches that these cable-independent parameters are *fixed*.

While Figure 12A shows “adjustable” equalization, “[s]uch equalization could be *fixed*.” Aronson, 14:20-23. Min, ¶¶135-136.

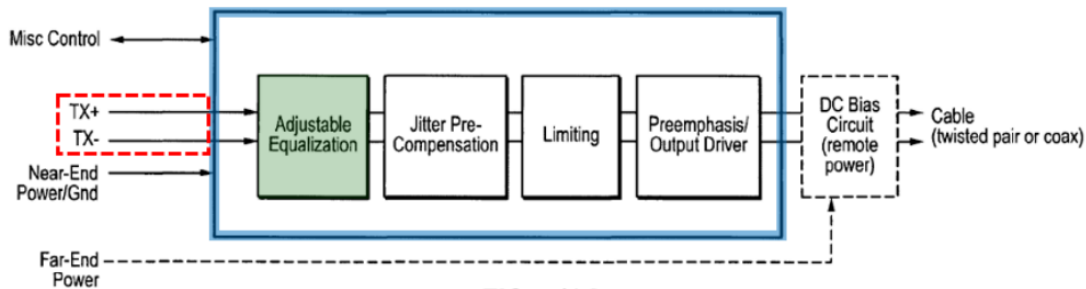


FIG. 12A

The cable’s receiver IC generates outbound data stream RX+/RX- to the host by, *inter alia*, performing equalization in a pre-emphasis/output driver that drives “host PCB traces.” Aronson, Fig. 12B (below), 15:1-8. Pre-emphasis was another term for pre-equalization. Min, ¶137; EX1022, 2:39-41. Pre-equalizing outbound stream RX+/RX- addresses “losses on long PCB traces” and “could be *fixed*.” Aronson, 15:17-24.

POSAs understood that the design choice between fixed or adaptive equalization involved tradeoffs between, e.g., accuracy, speed, manufacturing cost, and complexity when equalizing a communication channel like an active copper cable’s host interface. Aronson, 15:17-24. “Fixed” parameters reduced complexity and manufacturing costs. Min, ¶139 (discussing tradeoffs); EX1016,

Pet., 18 (annotated)

d) Amphenol Applied The Same Disclosure From TI-Retimer (Ex-1008) Before The ITC and the PTAB

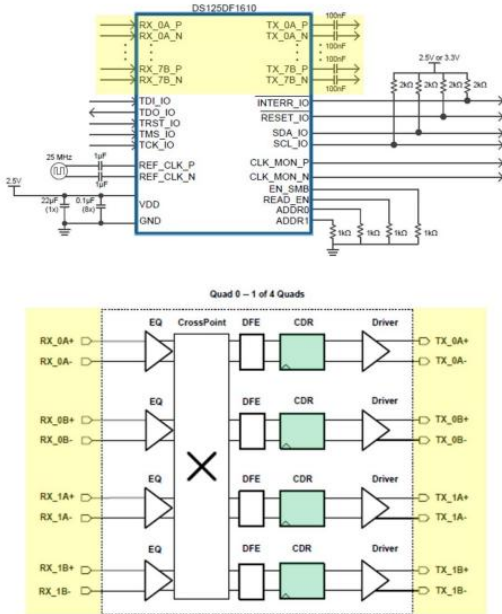
Amphenol relied upon the same TI-Retimer publication (DS125DF1610 9.8 to 12.5 Gbps 16-Channel Retimer Datasheet, SNLS482B, Texas Instruments Incorporated (January 2017)) before the ITC and the PTAB. *See* Ex-2012 (Exhibit B-11 to Amphenol's preliminary invalidity contentions, with invalidity contentions with respect to TI-Retimer), 139-141; Pet., 80-83 (analysis of Limitation [1.c] based on Tang+TI-Retimer+Aronson727).

The overlap is further confirmed by Amphenol's reliance on the same prior art disclosure from TI-Retimer in its invalidity positions in each forum. In addressing limitation [1.c], Amphenol's invalidity contentions and its IPR ground each rely on §§3, 7.1, 7.2, 7.3.6-7.3.9, and Figures 1 and 2 of TI-Retimer. *Compare* Ex-2012, 139-141, *and* Pet., 80-83. To illustrate, below are excerpts from relevant portions of Amphenol's claim chart based on TI-Retimer (Ex-2012) and its Petition based on TI-Retimer addressing limitation [1.c]:

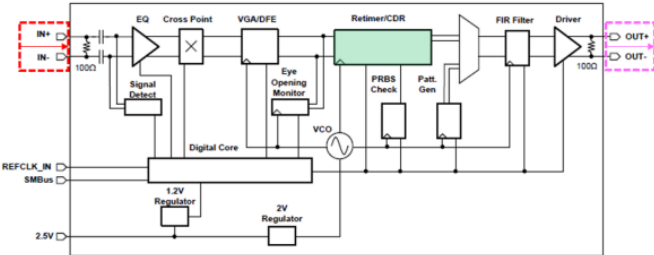
Amphenol's Preliminary Invalidity Contentions Based on TI-Retimer in the ITC

DS125DF1610 Retimer Publication

The DS125DF1610 circuit is illustrated in the Simplified Schematic and Figure 1 below. The highlighted pins illustrate sixteen channels of data, with each channel having two differential (Positive and Negative) input pins (RX_0A_P/N through RX_7B_P/N) to receive the channel of data and corresponding output pins (TX_0A_P/N through TX_7B_P/N) to transmit the channel of data after processing. *See, e.g.*, DS125DF1610 at §§ 3, 7.2. Thus, DS125DF1610's retimer is a transceiver that, when used in Tang's cable, receives one or more inbound data streams (on RX_0A_P/N through RX_7B_P/N), and transmits one or more transit data streams (via pins TX_0A_P/N through TX_7B_P/N).

Claim 1	Disclosure
	Simplified Schematic  Figure 1. DS125DF1610 Simplified Cross Point Diagram Figure 1 above shows four channels and illustrates that DS125DF1610's retimer processes each data channel by, inter alia, performing "clock and data recovery (CDR)." <i>See id.</i> at §§ 3, 7.1. A channel's data path is shown in more detail in DS125DF1610 Figure 2 (below), which illustrates the input signal conveying an inbound data stream and the transit signal conveying a transit data stream in Tang's cable

Ex-2012, 139-40

Claim 1	Disclosure
	when DS125DF1610's retimer implements Tang's signal driver 44.  Figure 2. DS125DF1610 Simplified Data Path Diagram The Retimer/CDR circuit performs clock and data recovery on the electrical input signal to extract and re-modulate the inbound data stream for transit via the electrical conductors as a respective electrical transit signal conveying a transit data stream. <i>See id.</i> at § 7.3.6. The '252 Patent specification makes clear that the input signal from the host can be pre-processed before CDR is performed on it. An ordinarily skilled artisan understood that DS125DF1610's retimer remodulates the data for output as the transit data stream because after extracting the input signal's timing and using that timing to sample and extract the input signal's data in an analog-to-digital CDR process, the retimer generates a new data stream for equalization by the FIR Filter (a digital-to-analog process) and to be driven for output by the differential driver (which produces an analog signal with configurable output voltage levels) to convey the output data stream (transit data stream when outputting over the cable) as an analog signal over the cable conductors, where the new signal is a "re-modulation" of the data. <i>See id.</i> at §§ 7.3.6-7.3.9. .

Ex-2012, 141

Amphenol's IPR Ground Based on TI-Retimer in the PTAB

TI-Retimer's retimer is illustrated in the Simplified Schematic and Figure 1 below. The highlighted pins illustrate sixteen channels of data, with each channel having two differential (Positive and Negative) input pins (RX_0A_P/N through RX_7B_P/N) to receive the channel of data and corresponding output pins (TX_0A_P/N through TX_7B_P/N) to transmit the channel of data after processing. **TI-Retimer, §§3, 7.2.** Thus, TI-Retimer's retimer is a transceiver that, when used in Tang's cable, receives one or more inbound data streams (on RX_0A_P/N through RX_7B_P/N), and transmits one or more transit data streams (via pins TX_0A_P/N through TX_7B_P/N). Min, ¶284.

Pet., 80 (annotated)

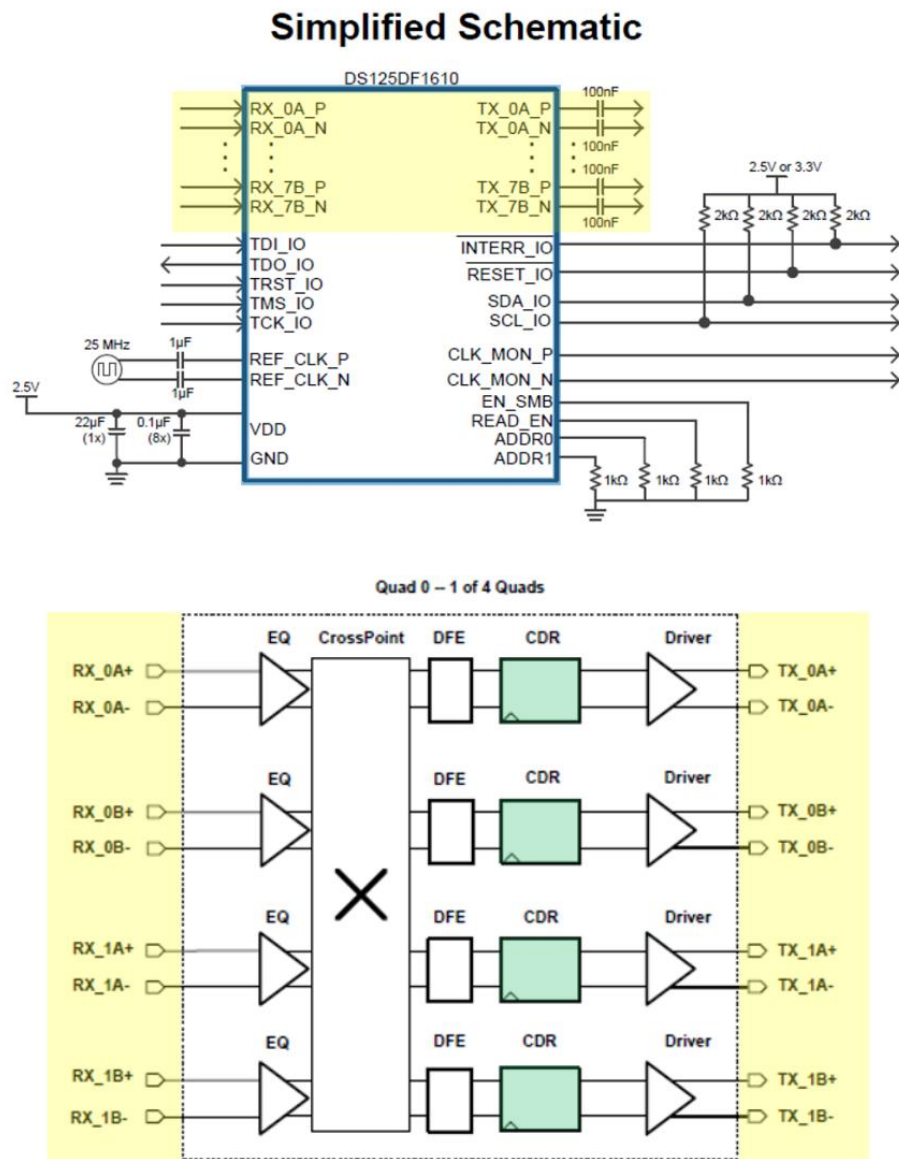


Figure 1. DS125DF1610 Simplified Cross Point Diagram

Figure 1 above shows four channels and illustrates that TI-Retimer's retimer processes each data channel by, *inter alia*, performing “clock and data recovery (CDR).” TI-Retimer, §§3, 7.1; Min, ¶285. A channel's data path is shown in more

Pet., 81 (annotated)

detail in TI-Retimer Figure 2 (below), which illustrates the input signal conveying an inbound data stream and the transit signal conveying a transit data stream in Tang's cable when TI-Retimer's retimer implements Tang's signal driver 44.

Min, ¶285.

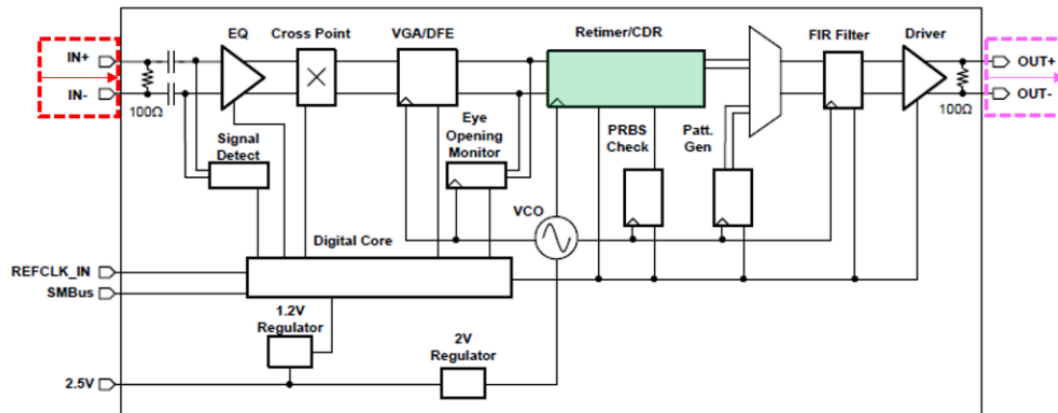


Figure 2. DS125DF1610 Simplified Data Path Diagram

The Retimer/CDR circuit performs clock and data recovery on the electrical input signal to extract and re-modulate the inbound data stream for transit via the electrical conductors as a respective electrical transit signal conveying a transit data stream. TI-Retimer, §7.3.6. As discussed *supra* §VI.D.5 (Ground 1 [1.C]), the '252 Patent specification makes clear that the input signal from the host can be pre-processed before CDR is performed on it. Min, ¶286.

POSAs understood that TI-Retimer's retimer remodulates the data for output as the transit data stream because after extracting the input signal's timing and

Pet., 82 (annotated)

using that timing to sample and extract the input signal's data in an analog-to-digital CDR process, the retimer generates a new data stream for equalization by the FIR Filter (a digital-to-analog process) and to be driven for output by the differential driver (which produces an analog signal with configurable output voltage levels) to convey the output data stream (transit data stream when outputting over the cable) as an analog signal over the cable conductors, where the new signal is a "*re-modulation*" of the data. **TI-Retimer, §§7.3.6-7.3.9**; Min, ¶¶91-105, 287. PO has likewise admitted that "retiming" extracts and re-modulates signals. EX1039, 11-17 ("retiming'... to extract and re-modulate"). To the extent TI-Retimer is considered to not expressly disclose this, that would have been the conventional and obvious way to implement what TI-Retimer discloses. Min, ¶¶287-288.

Pet., 83 (annotated)

e) Amphenol Has Not Narrowed Issues Between The PTAB And The ITC

As explained above, Amphenol's invalidity theories in the ITC and the PTAB are identical. This results in inefficient use of judicial resources in each. And yet, Amphenol has taken no action to reduce this overlap. As of the filing of this request, Amphenol has not filed any stipulation with the ITC or otherwise narrowed the issues in this proceeding. *Fintiv* factor 4 therefore weighs in favor of discretionary denial.

Any effort by Amphenol to later narrow the issues would also be ineffective.

Each of the IPR grounds in the Petition apply, as primary references, prior art that is included in Amphenol's invalidity contentions (Lugthart993, Tang). This duplication makes Amphenol's IPR grounds distinguishable from those implicated in *Samsung*, where institution was granted with a parallel ITC investigation. See *Samsung Electronics Co Ltd v. SiOnyx LLC*, IPR2024-01431, Pap. 21, at 14-16 (Apr. 10, 2025) ("*Samsung*"). There, institution was premised on the petitioner's withdrawal of specific IPR grounds raised before the ITC, thereby removing all overlap with the ITC Investigation. *Id.*, 14-15. In other words, in *Samsung*, institution was premised on the petitioner avoiding overlap by withdrawing IPR grounds from consideration by the ITC.

Finally, any stipulation subsequently submitted by Amphenol should be deemed late. The Office has made clear that timely filing of a stipulation for consideration in discretionary denial briefing is one month from the Notice of Filing Date Accorded (NOFDA). In this instance, the NOFDA issued on May 12, 2025, which resulted in a stipulation deadline on June 12, 2025. Amphenol failed to file any stipulation by that date. Based on recent USPTO guidance, a stipulation should be filed "as soon as practicable, so that a patent owner may address the impact of the stipulation." Ex-2003, 5. Amphenol chose not to pursue any stipulation as of the filing date of this request, foreclosing the opportunity for Credo to assess the impact on discretionary denial.

5. *Factor 5—Parties Involved In This IPR and the ITC
Investigation Overlap*

Factor 5 weighs in favor of denying institution because the parties in the parallel litigation are the same. *See* Pet., x-xi; *Fintiv II*, 15 (“Because the petitioner and the defendant in the parallel proceeding are the same party, this factor weighs in favor of discretionary denial.”).

6. *Factor 6—The Petition Fails To Demonstrate That One Or
More Of The Claims Are Unpatentable*

Factor 6 weighs in favor of denying institution because the merits of the Petition are weak. As will be explained in Patent Owner’s Preliminary Response (POPR),⁶ the Petition fails to establish that the challenged claims would have been obvious over the various combinations of references in Grounds 1 and 2. Weak merits are further demonstrated by Amphenol’s over-reliance on expert testimony (*see* §IV.B.2, *infra*) and presentation of prior art analyses previously considered and deemed by the Examiner as not material to patentability (*see* §IV.C, *infra*), each of which establish distinct bases for discretionary denial.

⁶ Credo asks the Acting Director to consider the merits briefing presented in the POPR when considering *Fintiv* factor 6. *See* Ex-2003, 7 (“when filing a brief for discretionary denial, a patent owner may direct attention to an anticipated POPR and evidence for a discussion of the merits.”)

B. Additional Factors Set Forth In The Stewart Memo Support Discretionary Denial

1. *Settled Expectations And Patent Maturity Further Reinforce Discretionary Denial*

While “there is no bright-line rule on when settled expectations become settled, in general, the longer the patent has been in force, the more settled expectations should be.” *Dabico Airport Solutions Inc v. HydraFacial LLC et al.*, IPR2025-00408, Pap. 21, at 3 (June 18, 2025). Here, Credo has invested in, relied on, and commercialized the challenged patents for half a decade—destabilizing them now undercuts the certainty that the patent system is meant to foster. The challenged patents have been enforced and licensed as part of a publicly disclosed patent portfolio. *See* Ex-1035. As noted in §II, *supra*, claimed inventions in the ’252 patent protect Credo’s AEC products, which are relied upon by (a) customers, including major data center operators, and (b) domestic industry partners. *See* Ex-2004; Ex-2005; Ex-2006. The claims have also been unchallenged for almost four years, indicating market acceptance and long-term reliance.

Further, Amphenol’s prior knowledge of the ’252 patent, coupled with a failure to seek early review, is an independent ground for discretionary denial under §314(a). *See, e.g., iRhythm Inc et al. v. Welch Allyn Inc.*, IPR2025-00363, Pap. 10, at 2-3 (Jun. 6, 2025) (“*iRhythm*”) (finding that “settled expectations favor denial of institution” because of “Petitioner’s awareness of Patent Owner’s

applications and failure to seek early review of the patents”).

Here, Amphenol was made aware of the ’252 patent on September 1, 2023—more than a year prior to filing its Petition in April 2025. *See* Ex-2002. This lengthy delay undermines any claim of prejudice and strongly supports the denial of institution based on Credo’s “settled expectations.” In *iRhythm*, “discretionary denial of institution [was] appropriate” because Patent Owner’s settled expectations were found to outweigh “[s]everal arguments weigh[ing] against discretionary denial, e.g., “that a final written decision [the PTAB] proceeding will issue before the district court trial occur” (*Fintiv* factor 2), “little investment by the parties in the district court proceeding” (*Fintiv* factor 3), and “a high likelihood of a stay if an *inter partes* review is instituted” (*Fintiv* factor 1). *iRhythm*, at 1. As explained in §IV.A, *supra*, the *Fintiv* factors are even more favorable such that there is no indication that Credo’s settled expectations are outweighed.

Further, Amphenol has not demonstrated why institution is justified. There is no persuasive reason the Board should now review the challenged claims of the ’252 patent. As discussed in §II, *infra*, this is not an instance where “a patent may have been in force for years but may not have been commercialized, asserted, marked, licensed, or otherwise applied in a petitioner’s particular technology space, if at all.” *Zepp Health Corp v. Slyde Analytics LLC*, IPR2025-00327, Pap.

12, at 2-3 (Jun. 26, 2025). To the contrary, Credo expressly marked its rights and asserted the '252 patent by providing Amphenol with actual notice of its infringement in September 2023. *See* Ex-2002. There is also no “significant change in law ... since the patent issued” and, thus, Amphenol cannot show “how [a] change in law directly bears on the patentability of the challenged claims.” *Id.* Thus, based on the absence of this information, the Office should be “disinclined to disturb” the settled expectations that Credo has developed for the '252 patent. *Id.*, 3.

Finally, the '252 patent also supports technology that helps decarbonize U.S. infrastructure by reducing energy consumption. Weakening this patent through the PTAB, as pursued by Amphenol, serves no public purpose. *See* Ex-1001, 1:5-22. They also enable lower-power, lower-cost data centers (energy efficiency is a national priority). *Id.* Credo is a U.S.-based innovator asserting its patent rights. The ITC proceeding already promotes national trade policy and patent enforcement.

2. *Amphenol's Contentions For Limitation [1.e] Rely On Expert Testimony To Fill Gaps In Third Party Evidence*

Amphenol's IPR grounds each rely on Aronson⁷²⁷ to address limitation

[1.e] of claim 1.⁷ See Pet., 14-20, 41-46 (Ground 1); see also *id.*, 72, 85-87 (Ground 2). And yet, Amphenol’s contentions with respect to Aronson727 in relation to limitation [1.e] (specifically, “cable-independent parameters” recited in the limitation) reveal reliance on expert testimony to gap-fill prior art disclosures in an effort to sidestep § 325(d). Indeed, as will be explained in the POPR, Aronson727 fails to disclose or suggest limitation [1.e], rendering Amphenol’s contentions substantively defective (beyond the type of expert testimony reliance that separately warrants institution denial).

a) Amphenol’s Contentions Addressing Limitation [1.e] in Ground 1

More specifically, in Ground 1, Amphenol effectively concedes the primary reference (Lugthart993) lacks express or inherent disclosure to satisfy the “cable-independent parameters” recited in the limitation [1.e]. See Pet., 45. Amphenol is therefore forced to rely on a hypothetical configuration outside Lugthart993’s disclosure that, in its view, is “conventional and [an] obvious way to implement”

⁷ This reliance creates a separate and distinct basis for discretionary denial under § 325(d) because the relied-upon disclosures from Aronson727 were previously presented to the Office and specifically considered by the Examiner in original prosecution. See §IV.C, *infra*.

the Lugthart993 system based on “Aronson and other references corroborating a POSA’s background knowledge...” Pet., 45. Amphenol then purports that this hypothetical configuration satisfies the “cable-independent parameters” element of limitation [1.e] because, according to Amphenol, “it would have been obvious to use.” Pet., 45. In other words, in attempting to address the elements recited in [1.e] (including the “cable-independent parameter”), Amphenol’s contentions gap-fill Lugthart993’s disclosure by relying instead on Aronson727 and “POSA’s background knowledge.” *Id.* This amounts to over-reliance on expert testimony because (1) Amphenol’s contentions fail to identify any teaching or suggestion within the prior art to support its allegation of a “conventional and obvious way to implement” Lugthart-993’s disclosure, and (2) the only evidence cited in the contentions is testimony from a declaration from Dr. Min (“Min Declaration”) that merely parrots the arguments included in the Petition. As will be explained in greater detail in the forthcoming POPR, this reliance is also substantively defective since neither the Petition nor the Min Declaration sufficiently address how a POSITA would have relied upon the disclosures of third-party evidence (e.g., Lugthart993, Aronson727) to arrive at the hypothetical configuration that Amphenol’s contentions require to achieve satisfaction of limitation [1.e].

Below is a chart showing a comparison of Amphenol’s contentions with respect to the “fixed, cable-independent parameters” element of limitation [1.e]

and declaration testimony from Dr. Min cited for evidentiary support:

Amphenol’s Contentions (Pet., 45-46)	Cited Testimony From Min Declaration (Ex-1003, ¶¶192-194)
c. fixed, cable-independent To the extent Lugthart-993 does not explicitly describe its equalizers 11a/11b and FIRs 27a/27b as utilizing “cable-independent” parameters, as confirmed by Aronson and other references corroborating a POSA’s background knowledge, that would have been the conventional and obvious way to implement what Lugthart-993 describes. <i>Supra</i> §VI.C. Additionally, as the same corroborating references and Aronson teach, it would have been obvious to use “fixed cable-independent” parameters for Lugthart-993’s equalizers 11a/11b and FIRs 27a/27b. <i>Supra</i> §VI.C.1. Thus, Lugthart-993+Aronson’s pre-equalization of the output data stream to the host, and its equalization of the input stream’s electrical signal from the host, both use <i>fixed cable-independent equalization parameters</i>. Min, ¶¶192-194.	(3) Fixed, cable-independent parameters 192. To the extent Lugthart-993 does not explicitly describe its equalizers 11a/11b and FIRs 27a/27b as utilizing “cable-independent” parameters, that would have been the conventional and obvious way to implement what Lugthart-993 describes, as confirmed by Aronson and other references corroborating a POSA’s background knowledge. Additionally, it would have been obvious to use “fixed cable-independent” parameters for Lugthart-993’s equalizers 11a/11b and FIRs 27a/27b as taught by Aronson and other references corroborating a POSA’s background knowledge. I discuss these reasons in Section VI.A.3.a.i above. 193. Thus, Lugthart-993+Aronson’s pre-equalization of the output data stream to the host, and its equalization of the input stream’s electrical signal from the host, both use <i>fixed cable-independent equalization parameters</i>. 194. Thus, it is my opinion that Lugthart-993+Aronson meets Limitation [1.E].

Tellingly, Amphenol’s contentions for the “fixed, cable-independent parameters” of limitation [1.e] are limited to a single paragraph. *See* Pet., 45-46. As explained above, the contentions fail to cite to any specific paragraph from any third party evidence, and rely exclusively on testimony from the Min Declaration. The cited testimony also parrots the contentions in the Petition. For instance, like the Petition, paragraph 192 of the Min Declaration provides a conclusory allegation that the hypothetical configuration of Lugthart993 required to satisfy the “cable-independent parameters” would have been a “conventional and obvious way to implement what Lugthart-993 describes” without citation to a scintilla of

evidence. Ex-1003, ¶192.

To the extent that Amphenol argues its contentions for [1.e] incorporate-by-reference prior analysis regarding the proposed Lugthart-993+Aronson combination in Section VI.C.1 of the Petition, its position still demands reliance on expert testimony. In that section of the Petition (Pet., 14-20), Amphenol contends “[t]o the extent Lugthart-993 is considered to not expressly teach or suggest using ***cable-independent*** parameters for pre-equalizing and equalizing signals to and from the host, Aronson does.” Pet., 17 (emphasis in original).

That is, Amphenol’s reliance on the Lugthart-993+Aronson combination to address limitation [1.e] requires Aronson to have disclosed “cable-independent” parameters for equalization. But, as will be explained in more detail in the POPR, none of the relied-upon disclosures from Aronson cited on pages 14-20 of the Petition for this concept (i.e., 14:16-23, 15:1-8, 15:17-24, FIGS. 12A, 12B) support this proposition. And, because of the lack of this disclosure, Amphenol’s application of the Lugthart-993+Aronson combination to limitation [1.e] necessarily requires reliance on expert testimony. And yet, the testimony cited in pages 14-20 of the Petition (i.e., paragraphs 132-142 of the Min Declaration) fails to corroborate key assertions with secondary evidence, and in any event, largely parrots the analysis in the Petition. For example, in paragraph 138 of the Min Declaration includes the following conclusory statement without any further

analysis or explanation or corroboration with secondary evidence: “Aronson’s teachings to use cable-independent parameters to perform equalization compensating for host-side losses gave POSAs reason to implement Lugthart-993 in the same manner.” Ex-1003, ¶138.

b) Amphenol’s Contentions Addressing Limitation [1.e] in Ground 2

In Ground 2, Amphenol similarly concedes that the primary references (Tang, TI-Retimer) lack express or inherent or inherent disclosure to satisfy the “cable-independent parameters” recited in the limitation [1.e]. *See* Pet., 87. As with the contentions advanced in Ground 1, Amphenol is forced to rely on hypothetical configurations outside the disclosures of these references that, in its view, “use fixed cable-independent parameters to address host-side losses.” *Id.* Amphenol concedes reliance on an interpretation of Aronson’s disclosure since it purports that the hypothetical configurations are “taught by Aronson and numerous references corroborating a POSA’s background knowledge.” *Id.* (citing Ex-1003, ¶¶295-296, and Aronson727, 12:10-17, 14:16-23, 15:17-24).

Like the defects discussed above for Ground 1, Amphenol’s contentions in Ground 2 attempt to address the elements recited in [1.e] (including the “cable-independent parameter”), by gap-filling the disclosure of Tang and TI-Retimer by relying instead on Aronson727 and “POSA’s background knowledge.” This

argument amounts to over-reliance on expert testimony because (1) Amphenol’s contentions fail to identify any teaching or suggestion within the prior art to support its allegation that, in the Tang+TI-Retimer+Aronson⁷²⁷ combination, “the host-side equalization (performed by EQ) and pre-equalization (performed by FIR Filter) use fixed cable-independent parameters,” and (2) relied-upon declaration testimony from Min Declaration merely parrots the arguments included in the Petition. As will be explained in more detail in the POPR, this reliance is also substantively defective since neither the Petition nor the Min Declaration sufficiently address how a POSITA would have relied upon the disclosures of third-party evidence (e.g., Tang, TI-Retimer, Aronson) to arrive at the hypothetical configuration that Amphenol’s contentions require to achieve satisfaction of limitation [1.e].

Below is a chart showing a comparison of Amphenol’s contentions with respect to the “fixed, cable-independent parameters” element of limitation [1.e] and declaration testimony from Dr. Min cited for evidentiary support:

Amphenol’s Contentions (Pet., 87)	Cited Testimony From Min Declaration (Ex-1003, ¶¶295, 296)
As discussed supra §VII.C.2.a, in the Tang+TI-Retimer+Aronson combination the host-side equalization (performed by EQ) and pre-equalization (performed by FIR Filter) use fixed cable-independent parameters to address host-side losses as taught by Aronson and numerous references corroborating a POSA’s background knowledge. Min, ¶¶295-296; Aronson, 12:10-17, 14:16-23, 15:17-24.	295. As discussed above in Section VI.B.4.b.i, in the Tang+TI-Retimer+Aronson combination, the host-side equalization (performed by EQ) and pre-equalization (performed by FIR Filter) use fixed cable-independent parameters

	to address host-side losses as taught by Aronson and numerous references corroborating a POSA's background knowledge. 296. Thus, it is my opinion that Tang+TI-Retimer+Aronson meets Limitation [1.E].
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Tellingly, Amphenol's contentions for the "fixed, cable-independent parameters" of limitation [1.e] is limited to a single paragraph. See Pet., 87. The cited testimony also parrots the contentions in the Petition.

To the extent that Amphenol argues its contentions for [1.e] incorporate-by-reference prior analysis regarding the proposed Tang+TI-Retimer+Aronson⁷²⁷ combination in §VII.C.2(a) of the Petition, its position still requires over-reliance on expert testimony. In that section of the Petition (Pet., 71), Amphenol concedes reliance on similar rationale as that expressed with respect to the proposed Lugthart-993+Aronson combination:

For the same reasons discussed supra §VI.C.1 concerning host-side equalization and pre-equalization in Lugthart-993, POSAs would have implemented the host-side equalization (via the yellow-highlighted EQ) and the host-side pre-equalization (via the blue-highlighted FIR Filter) in Tang/TI-Retimer by using fixed cable-independent parameters to address host-side losses as taught by Aronson and numerous references corroborating a POSA's background knowledge. Min, ¶266.

Pet., 71

That is, like its contentions for Ground 1, Amphenol's reliance on the Tang+TI-

Retimer+Aronson combination in Ground 2 to address limitation [1.e] requires Aronson to have disclosed “cable-independent” parameters for equalization. But, as will be explained in more detail in the POPR, none of the relied-upon disclosures from Aronson support this proposition. And, because of the lack of this disclosure, Amphenol’s application of the Tang+TI-Retimer+Aronson combination to limitation [1.e] necessarily requires reliance on expert testimony. And yet, the testimony cited in pages 71 and 87 of the Petition (i.e., paragraphs 265, 266, 295, and 296 of the Min Declaration) fails to corroborate key assertions with secondary evidence, and in any event, largely parrots the analysis in the Petition. For example, in paragraph 266 of the Min Declaration includes the following conclusory statement without any further analysis or explanation or corroboration with secondary evidence:

...POSAs would have implemented the host-side equalization (via the yellow-highlighted EQ) and the host-side pre-equalization (via the blue-highlighted FIR Filter) in Tang/TI-Retimer by using fixed cable-independent parameters to address host-side losses as taught by Aronson and numerous references corroborating a POSA’s background knowledge.

Ex-1003, ¶266

C. 35 U.S.C. § 325(d) Also Weighs In Favor Of Discretionary Denial

Amphenol also relitigates the same issues that were resolved during original examination of the '252 patent—in particular, patentability of limitation [1.e], which the Examiner specifically deemed allowable over substantially the same prior art disclosures that Amphenol now applies in both grounds of its Petition.

Amphenol purports to advance two “distinct” grounds in the Petition:

Ground	References	Claims	Post-AIA Basis
1	Lugthart-993+Aronson	1-14	§103
2	Tang+TI-Retimer+Aronson	1-4, 6-9, 11-14	§103

Pet., 2

As discussed below, each ground presents essentially the same analysis with respect to limitation [1.e]. As to Ground 1, each of the relied-upon disclosures (Lugthart933, Aronson727) were previously presented to, and considered by, the Examiner in original examination. As to Ground 2, newly-cited prior art disclosures (Tang, TI-Retimer) are cumulative over the Lugthart933 disclosure, leaving only Amphenol’s reliance on Aronson727 to establish a “new” patentability analysis.

Each ground also relies on Aronson727 in the same way—to remedy the same defects of primary references with respect to limitation [1.e]. Amphenol admits the same, observing that “**[f]or the same reasons discussed supra §VI.C.1**

concerning host-side equalization and pre-equalization in Lugthart-993,

POSAs would have implemented the host-side equalization...and the host-side pre-equalization...in Tang/TI-Retimer by using fixed cable-independent parameters to address host-side losses as taught by Aronson and numerous references corroborating a POSA's background knowledge." Pet., 71 (emphasis added). That is, each of the prior art combinations advanced in the Petition rely on the same teachings of Aronson to remedy the same defect (i.e., lack of disclosure of "cable-independent parameters" within Lugthart993, Tang, and TI-Retimer).

More specifically, each ground cites to Aronson727 to address the "cable-independent, equalization parameters" element recited in limitation [1.e]. See Pet., 17-20, (citing Aronson727, 14:16-23, 15:1-8, 15:17-24, Figures 12A, 12B), 45-46; *see also id.*, 71, 85-87 (12:10-17, 14:16-23, 15:17-24). But, as explained in §IV.C.2(a), *infra*, each of these cited portions were not only previously presented to the Office during original examination, but were considered material to patentability by the Examiner for ***the very same element*** added in an amendment that led to allowance.⁸

⁸ The "cable-independent, equalization parameters" element was recited in original claim 3, which was identified by the Examiner in a October 29, 2020 Office Action

The Petition therefore fails to present a new patentability analysis with respect to limitation [1.e] that was not previously before the Office. Worse, it fails to identify with particularity how the cited portions of Aronson727 sufficiently disclose limitation [1.e] or render it obvious, failing to meet Amphenol’s burden to demonstrate material error by the Office. Despite Amphenol’s arguments to the contrary, exercise of discretion under § 325(d) is appropriate.

1. *Relevant Prosecution*

Prosecution of the application that issued as the ’252 patent involved consideration of key prior art references included in Amphenol’s IPR grounds, such as Lugthart993 (applied in Ground 1) and Aronson727 (applied in both IPR grounds).

As a preliminary matter, while Amphenol’s IPR grounds also apply prior art not previously presented to the Office—Tang (Ex-1007), TI-Retimer (Ex-1008)—

as being “allowable if rewritten in independent form...” Ex-1002, 198. Applicant subsequently amended claim 3 into independent form in a response filed December 1, 2020 (*see id.*, 211) and the Examiner subsequently issued a Notice of Allowance on January 6, 2021 (*id.*, 227). Thus, the file history reflects the “cable-independent, equalization parameters” (now recited in limitation [1.e]) as having been material to patentability with respect to the prior art of record.

these references are relied upon by Amphenol to address claim features not directed to the limitations that the file history indicates as being material to patentability (i.e., limitation [1.e]). See Pet., 29-40 (Ground 1), 74-84 (Ground 2). Indeed, as discussed in detail below, the file history confirms that limitation [1.e] is what both the Applicant and the Examiner considered allowable over the prior art of record.

As to previously presented prior art (Lugthart993, Aronson727), the Petition applies the same exact Lugthart reference that was before the Office during original examination. Pet., 2 (identifying IPR grounds of rejection based on Lugthart993) and Ex-1002, 193 (Non-Final Office action citing rejections based on Lugthart993). As to Aronson, Amphenol relies on U.S. Patent No. 7,762,727 (“Aronson727”) in its IPR grounds (Ex-1006), which Amphenol concedes was previously presented to the Office as the Petition fails to address *Advanced Bionics* step 1 in relation to Ground 1. See Pet., 102-104. Indeed, as discussed in §IV.C.2(a), *infra*, the same underlying disclosure was considered by the Office during prosecution in two separate forms: (1) U.S. Patent Application Publication No. 2007/0237464 (“Aronson464”) (Ex-2014) and (2) U.S. Patent No. 7,401,985 (“Aronson985”) (Ex-2020). See Ex-1002, 2-3, 69-70, 220-223, 247-250. Aronson985 and Aronson464 were cited in separate IDS submissions—before and after the applicant’s critical claim amendment—and each was affirmatively

initialed by the Examiner.

Further, the disclosures of Aronson464, Aronson985, and Aronson727 are largely identical.⁹ Amphenol does not rely upon any unique disclosure within Aronson727 in its contentions for limitation [1.e]. *See* Pet., 41-46, 85-87.

Unsurprisingly, Amphenol downplays the examiner's consideration of Aronson985 and Aronson464 because of its critical significance to the *Advanced Bionics* framework. This significance includes the following:

- Aronson985 and Aronson464 were each presented to, and considered by, the Examiner at distinct stages of examination in relation to Applicant-initiated amendments that led to issuance of the '252 patent;
- Disclosure present in Aronson985 and Aronson464 is critical to Amphenol's invalidity theories because it is relied upon in both IPR grounds to remedy deficiencies in other relied-upon references with respect to limitation [1.e]; and
- The file history confirms actions of the Applicant and the Examiner each

⁹ Amphenol downplays the correspondence in characterizing these references as having "overlapping disclosure." Pet., 102. This characterization grossly oversimplifies the similarity in disclosures of the two references, which share all but two non-technical paragraphs. *See* §IV.C.2(c), *infra*.

yielded identification of claim features now recited in limitation [1.e] as deemed by the Examiner as specifically resulting in a patentability determination.

Thus, not only is the presentation of Aronson985 and Aronson464 during original examination pertinent to whether the analysis presented in the Petition was previously considered by the Office, it further relates to the very limitation deemed allowable from that examination (limitation [1.e]).

In effect, Amphenol seeks to use the PTAB's resources to address an already-answered question: whether the Aronson disclosure teaches or suggests elements recited limitation [1.e]. But the Examiner's patentability analysis already confirms that this disclosure is not material to the patentability of limitation [1.e]. And the Petition's cryptic reliance on its disclosure only confirms it.

Worse, beyond conclusory statements, Amphenol fails to raise any new patentability question that would warrant reconsideration of Aronson's disclosure. It instead applies Aronson as a "back-up" position in a manner that fails to demonstrate material error. *See Ecto World, LLC v. RAI Strategic Holdings, Inc.*, IPR2024-01280, Pap. 13, at 5 (May 19, 2025) ("*Ecto World*") (precedential as to § A) ("a petitioner **must provide an analysis** even when the asserted prior art is on an IDS, but the Examiner did not apply the reference") (emphasis added).

Below is an overview of key milestones occurring during original

examination:

Date	Event	Relevance	Excerpt from Ex-1002
8/13/2019	Applicant submits First IDS	IDS listed 4 documents, including Aronson985	2-3
1/15/2020	Examiner indicates consideration of references cited in First IDS	Confirms affirmative consideration of Aronson985	69-70
3/11/2020	Examiner issues <i>Ex parte</i> Quayle Office Action	Indicated all original claims (claims 1-20) were in condition for allowance (but for a certified copy of a foreign priority application) Identified four prior art references “considered pertinent to applicant’s disclosure,” but did not include Aronson985	63-66
6/4/2020	First Notice of Allowance	Identified US 2016/0197434 (“Lett”) as “closest reference” amongst prior art of record	118-125
9/24-9/25/2020	Applicant submits Second IDS Applicant files RCE to re-open prosecution	IDS listed 7 documents, including Lugthart993 (applied in ground 1 of the Petition)	155-157, 169-170
10/1/2020	Examiner indicates consideration of references cited in	Confirms affirmative consideration of Lugthart993 by the Examiner	175-177

	Second IDS		
10/29/2020	Examiner Issues Non-Final Office Action	Included prior art rejections of claims 1, 2, 8, 9, 15, and 16 over Lugthart993, affirmatively confirming both consideration of Lugthart993 and a determination that its disclosure was deemed material to patentability of pending claims Claims 3-7, 10-14, and 17-20 indicated as reciting allowable subject matter. Claim 3 recited “respective transceivers each employ fixed, cable-independent, equalization parameters for each of: the remodulation of the transit data stream as the outbound data stream, and the clock and data recovery performed on the electrical input signal” (recited in limitation [1.e] of issued claim 1)	193-199
12/1/2020	Applicant files Response to Office Action and amends claims	Amendments incorporated allowable dependent claims into independent claims (e.g., by cancelling claims 1, 2 and amending claim 3 to be in independent form)	210-217
12/2/2020	Applicant submits Third IDS	IDS listed 9 documents, including Aronson464	220-223
12/19/2020	Examiner indicates consideration of references cited in Third IDS	Confirms affirmative consideration of Aronson985 and Aronson464 in relation to claim amendments filed by Applicant on 12/1/2020	247-250
1/6/2021	Examiner issues Second Notice of Allowance	Identified US Lugthart993 (previously applied in 10/29 Office Action) as “closest reference” amongst prior art of record based on “further consideration and comparison with prior art of	227-233

		record.”	
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2. *Advanced Bionics, First Prong—Amphenol’s Relied-Upon Prior Art Disclosures Material To Patentability Were Previously Presented To The Office*

The first prong of *Advanced Bionics* is met because Amphenol’s relied-upon disclosures were either before the Office during original examination (Lugthart993, Aronson727) or cumulative to previously presented prior art (Tang, TI-Retimer). Amphenol’s proposed prior art combinations are also not “new” because they rely on previously presented prior art disclosures to address the very limitation that resulted in allowance (i.e., limitation [1.e]).

a) A Signed IDS Represents Sufficient Prior Consideration For Satisfaction For *Advanced Bionics*, First Prong

As discussed below, the disclosures of Lugthart993 and Aronson727 were previously presented to the Office via multiple IDS documents submitted by the applicant, which is relevant to the first prong of the *Advanced Bionics* framework. *Advanced Bionics*, 8 (explaining that previously presented prior art includes “art provided to the Office by the applicant, such as **on an Information Disclosure Statement (IDS)**, in the prosecution history of the challenged patent”) (emphasis added); see also *Ecto World*, at 4 (“[c]hallenging the claims using the same prior art that was previously presented on an IDS is sufficient to satisfy the first part of the *Advanced Bionics* framework”); *Ivantis, Inc. v. Sight Sciences, Inc.*, IPR2022-

01530, Pap. 14, at 17 (Mar. 27, 2023) (“[T]here is no requirement that Examiner needs to rely on a reference in a rejection during prosecution in order for the reference to be ‘considered’ during prosecution.”).

Indeed, the Board has frequently held that a signed IDS is sufficient evidence to show consideration by the Examiner. *See, e.g., Palo Alto Networks, Inc. v. Centripetal Networks, Inc.*, IPR2021-01156, Pap. 10, at 13-14 (Jan. 24, 2022) (rejecting argument that “the first part of the *Advanced Bionics* framework is not met because [the prior art was] not substantively discussed or applied in a rejection during prosecution” because “[u]nder the Board’s precedent in *Advanced Bionics*, however, ‘[p]reviously presented art includes . . . art provided to the Office by an applicant, such as on an [IDS]’”) (quoting *Advanced Bionics* at 7-8) (alterations in original); *Eyenovia, Inc. v. Sydnexus*, IPR2022-00963, Pap. 7, at 10-11 (Nov. 8, 2022) (Because “references appear in the references cited section of the [challenged] patent and were identified in Information Disclosure Statements (‘IDSs’) during prosecution[,] . . . these references were ‘previously presented’ for the purposes of assessing the application of discretion under 35 U.S.C. § 325(d).”); *BMW of N. Am., LLC v. Stragent, LLC*, IPR2021-00419, Pap. 14, at 12-13 (July 19, 2021) (exercising discretion to deny institution under § 325(d) in part because relied-upon prior art was cited on an IDS), *reh’g denied*, Pap. 21, at 5 (Mar. 21, 2022); *Vovomart (HK) Enters. Co. v. Office Kick, Inc.*, PGR2022-00048, Pap. 14,

at 9 (Jan. 12, 2013), *reh'g denied*, Pap. 16 (Mar. 9, 2023) (same); *Microsoft Corp. v. AlmondNet, Inc.*, IPR2022-01319, Pap. 9 at 8, 10 (Jan. 30, 2023) (same), POP request denied, Pap. 13 (Mar. 24, 2023), *reh'g denied*, Pap. 14 (Apr. 23, 2023).

Other than simply saying so, Amphenol fails to establish why the Examiner's initialing of IDS documents is not itself evidence of affirmative consideration. Pet., 102-103; Ex-1002, 2-3, 69-70. Indeed, as discussed in further detail below, the file history demonstrates the opposite—not only were references cited on IDS documents presented at different time points of examination, the Examiner considered them before and after amendments resulting in allowance of the amended claims. Specifically, the file history reveals that elements recited in limitation [1.e] led to allowance, and the Examiner considered prior art references cited on IDS documents in relation to the entry of these amendments. The Examiner's initialization therefore reflects careful consideration (especially in view of the modest number of total references presented on each IDS reference).

b) Relied-Upon Prior Art Disclosures In Ground 1
(Lugthart993, Aronson727) Were Previously Presented
To The Office

(1) The Same Lugthart993 Reference Applied In
Ground 1 Was Previously Presented To The Office

Lugthart993 was indisputably before the Office in original examination. See Ex-1002, 155-157 (IDS citing Lugthart993), 193-99 (Non-Final Office Action

including §102 rejections based on Lugthart993), 227-33 (Notice of Allowance identifying Lugthart993 as “closest reference”). Thus, not only was Lugthart993 previously presented to the Office, its disclosure was substantively applied in a prior art ground of rejection, and discussed in relation to features that led to allowance. This circumstance satisfies the first prong of the *Advanced Bionics* framework (which Amphenol concedes since the Petition fails to contend otherwise). See Pet., 102-104. Moreover, as discussed in §IV.C.3, *infra*, Amphenol’s arguments regarding material error are legally deficient and factually inaccurate.

(2) Amphenol’s Relied-Upon Disclosures From
Aronson727 Were Also Previously Presented To
The Office

While Aronson727 itself was not cited in original examination, the disclosure included within it and relied upon by Amphenol to address limitation [1.e] within each ground was considered. That disclosure was presented to the Office at two distinct time points in examination and in two distinct forms: (1) U.S. Patent Application Publication No. 2007/0237464 (“Aronson464”) and (2) U.S. Patent No. 7,401,985 (“Aronson985”).¹⁰ See Ex-1002, 2-3, 69-70, 220-223, 247-

¹⁰ Aronson464 is the patent publication of Aronson985 and therefore are identical in terms of substantive disclosures.

250. Aronson464 and Aronson985 were cited in separate IDS submissions—before and after the applicant’s claim amendment that led to the second allowance¹¹—and each was affirmatively initialed by the Examiner. *Id.* Again, the Petition concedes similar Aronson-based arguments were before the Office as it fails to address *Advanced Bionics* step 1 in relation to Ground 1. Pet., 102-104.

The disclosures of Aronson464, Aronson985, and Aronson727 are largely identical in terms of technical substance. More importantly, every portion of the Aronson727 disclosure that Amphenol cites to in addressing limitation [1.e] is literally present, word-for-word in each of Aronson464 and Aronson985. These relied-upon portions of Aronson727 include 12:10-17, 14:16-23, 15:1-8, 15:17-24, and Figures 12A, 12B. See Pet., 45-46 (Ground 1); see also *id.*, 71, 85-87 (Ground 2). And, as shown in the table below, each of these portions is literally present in Aronson464:

¹¹ The Applicant withdrew the ’252 patent from issue after its first allowance to provide an IDS submission, after which the Examiner rejected the claims using the Lugthart reference (provided by the Applicant on this IDS). Ex-1002, 155-156, 163, 192-199. The Applicant amended the claims to distinguish the Lugthart reference and the claims were again allowed. *Id.*, 210-217, 227-233.

Amphenol's Relied-Upon Disclosure From Aronson727 (Ex-1006)	Corresponding Disclosure in Aronson464 (Ex-2014)
As described in the some of the implementations of the copper based solution, the cable may also include a mechanism for supporting adaptive equalization of an input high speed electrical signal to reduce total link jitter, a mechanism for providing host selectable equalization of an input high speed electrical signal to reduce total link jitter, a mechanism that provides pre-emphasis of an output high speed electrical signal to reduce total link jitter, a mechanism for providing host selectable pre-emphasis of an output high speed electrical signal to reduce total link jitter. Different host systems may require different degrees of equalization and/or pre-emphasis because of the particular length or other nature of the electrical interconnect between the cable receptacle and the next IC elements. The integrated cable may support predefined limits of added deterministic and total jitter of a high speed signal, where such limits may be chosen to allow concatenation of up to 3 cables. 12:1-17	[0091] As described in the some of the implementations of the copper based solution, the cable may also include a mechanism for supporting adaptive equalization of an input high speed electrical signal to reduce total link jitter, a mechanism for providing host selectable equalization of an input high speed electrical signal to reduce total link jitter, a mechanism that provides pre-emphasis of an output high speed electrical signal to reduce total link jitter, a mechanism for providing host selectable pre-emphasis of an output high speed electrical signal to reduce total link jitter. Different host systems may require different degrees of equalization and/or preemphasis because of the particular length or other nature of the electrical interconnect between the cable receptacle and the next IC elements. The integrated cable may support predefined limits of added deterministic and total jitter of a high speed signal, where such limits may be chosen to allow concatenation of up to 3 cables. [0091]
FIGS. 12A and 12B illustrates some of the useful features which might be incorporated into the ICs in a copper active cable design. FIG. 12A shows the transmitter Integrated Circuit (IC). The first block in this IC would provide equalization to compensation for high frequency loss in the host board traces. Such equalization could be fixed, host selectable via a serial interface or automatically adaptive to the host impairments. The next block shown is jitter precompensation. In this relatively new technique, particular data transitions which tend to have the most significant associated deterministic timing errors (jitter) are detected and fixed small time delays are added to compensate. This can be used to compensate for both host board impairments as well as for at least a portion of the bandwidth impairment of the copper cable. The next block is a limiting function which restores the signal levels amplitudes which vary according to the host ICs and may have been further attenuated by the host transmission lines. The final block provides preemphasis to the high frequency content of the transmitted signal to overcome the larger loss on the cable of these high frequencies. This is well known technique and gains of 12 dB or larger may be used. The amount of gain can be adjusted at factory setup individually to match the particular length of the characteristics of the copper cabline. 14:16-39	[0104] FIGS. 12A and 12B illustrates some of the useful features which might be incorporated into the ICs in a copper active cable design. FIG. 12A shows the transmitter Integrated Cicruity (IC). The first block in this IC would provide a equalization to compensation for high frequency loss in the host board traces. Such equalization could be fixed, host selectable via a serial interface or automatically adaptive to the host impairments. The next block shown is jitter precompensation. In this relatively new technique, particular data transitions which tend to have the most significant associated deterministic timing errors (jitter) are detected and fixed small time delays are added to compensate. This can be used to compensate for both host board impairments as well as for at least a portion of the bandwidth impairment of the copper cable. The next block is a limiting function which restores the signal levels amplitudes which vary according to the host ICs and may have been further attenuated by the host transmission lines. The final block provides preemphasis to the high frequency content of the transmitted signal to overcome the larger loss on the cable of these high frequencies. This is well known technique and gains of 12 dB or larger may be used. The amount of gain can be adjusted at factory setup individually to match the particular length of the characteristics of the copper cabling. [0104]

The next block shown, completely within the IC, is adjustable equalization. This block of equalization is provided to compensate for the cable high frequency rolloff, rather than the host PCB traces in the case of the driver. As in the case of the driver, it may provide fixed, adjustable or adaptive equalization. Adjustable but factory set equalization is of particular interest because the cable length and characteristics will be established at the time of the cable manufacture. 15:1-8	[0110] The next block shown, completely within the IC, is adjustable equalization. This block of equalization is provided to compensate for the cable high frequency rolloff, rather than the host PCB traces in the case of the driver. As in the case of the driver, it may provide fixed, adjustable or adaptive equalization. Adjustable but factory set equalization is of particular interest because the cable length and characteristics will be established at the time of the cable manufacture. [0110]
Finally, for driving the host PCB traces at this end of the cable, an output driver is provided with optional preemphasis. In the case of the receiver, the preemphasis would be provided to help overcome high frequency losses on long PCB traces which can add significant jitter at 10 G operation. The preemphasis could be fixed, adjustable with adjustment at the factory or based on host control information on the expected loss characteristics of the PCB channel. 15:17-24	[0112] Finally, for driving the host PCB traces at this end of the cable, an output driver is provided with optional preemphasis. In the case of the receiver, the preemphasis would be provided to help overcome high frequency losses on long PCB traces which can add significant jitter at 10 G operation. The preemphasis could be fixed, adjustable with adjustment at the factory or based on host control information on the expected loss characteristics of the PCB channel. [0112]

Thus, as shown above, Amphenol's characterization that Aronson464 and Aronson985 have "overlapping disclosure" to Aronson727 is, at best, an oversimplification and at worst, a mischaracterization. Pet., 102. In practical terms, Amphenol relies on the same disclosure found in each reference, rendering the overlap highly relevant for §325(d) purposes.

The Examiner also considered the Aronson disclosure referenced above at multiple time points in relation to the claims during original prosecution. This is because: (1) Aronson484 and Aronson985 were presented to, and considered by, the Examiner *before* and *after* Applicant-initiated claim amendments that led to allowance (Ex-1002, 2-3, 69-70), and (2) the Examiner identified references

material to patentability in both Notices of Allowance, and in each instance did not identify either Aronson484 and Aronson985 (*id.*, 122-125, 231-233). As discussed below, the Examiner's lack of patentability rejections based on Aronson484 and Aronson985 do not reflect material error. *See* §IV.C.3, *infra*. Rather, the lack of Aronson-based rejections represents a consistent pattern of the Examiner indicating the lack of Aronson's relevance to the feature ultimately deemed allowable over the prior art of record—limitation [1.e].

The Petition relies solely upon previously presented and cumulative art for limitation [1.e] (Lugthart993 and Aronson727 in Ground 1, and Aronson727 alone in Ground 2). Pet., 14-28, 41-45, 71-73, 85-87. The file history confirms actions of the Applicant and the Examiner each yielded identification of claim features now recited in limitation [1.e] as deemed by the Examiner as specifically resulting in a patentability determination. Ex-1002, 192-199, 210-217, 231-233. Thus, not only is the presentation of Aronson484 and Aronson985 during original examination cumulative to Amphenol's Aronson727, but this same disclosure also relates to the very limitation deemed allowable from that examination (limitation [1.e]). *Id.*

Although Amphenol may purport that the Petition's presentation of Aronson727 in combination with other references in its second ground reflects the presentation of Aronson727 in a new light, its contentions and proffered expert

testimony fail to demonstrate such a presentation. Pet., 14-28, 41-45, 71-73, 85-87. Indeed, the Petition clearly turns to Aronson727's disclosure alone for limitation [1.e] in this second ground. *Id.* As a consequence, the same Aronson727 disclosure is critical to Amphenol's invalidity theories in both IPR grounds. *Id.*

In effect, the Petition seeks to use IPR to address an already-answered question—does Aronson (*any* of Aronson727, Aronson484, or Aronson985) disclose or suggest limitation [1.e]? But the Examiner's patentability analysis already demonstrates Aronson is not relevant to limitation [1.e]. Worse, beyond conclusory statements, the Petition fails to raise any new patentability question that would warrant reconsideration of the Aronson disclosure. Pet., 102-104. It instead applies Aronson as a "back-up" position in a manner that fails to demonstrate material error. *See Ecto World*, at 5 ("a petitioner **must provide an analysis** even when the asserted prior art is on an IDS, but the Examiner did not apply the reference") (emphasis added).

(3) The Proposed Lugthart993+Aronson727
Combination Was Previously Before The Office

As discussed above, the disclosures of each of Lugthart993 and Aronson727 were previously presented to the Office during original examination. In combining their teachings in Ground 1, Amphenol merely relies on Aronson727 to remedy

defects in Lugthart993 with respect to the “fixed cable-independent equalization parameters” recited in limitation [1.e]. Specifically, according to Amphenol, “Aronson explains that a cable’s transmitter performs cable-independent equalization on inbound data streams to ‘compensat[e] for high frequency loss in the **host board trace**[.]’ and “[h]ost board traces are independent of the cable so parameters compensating for them are cable-independent.” Pet., 103 (citing Aronson727, 14:16-23). But, as explained in §IV.C.3(b)(2), *infra* (and more specifically in the POPR), Aronson727 fails to disclose or suggest limitation [1.e], making Amphenol’s proposed Lugthart993+Aronson727 combination not “new” to warrant further consideration by the PTAB.

c) Relied-Upon Prior Art Disclosures In Ground 2 (Tang, TI-Retimer, Aronson727) Were Previously Presented To The Office

(1) Tang And TI-Retimer Are Cumulative Over Lugthart993

Although Amphenol’s IPR grounds also apply prior art not literally before the Office in original examination—Tang (Ex-1007) and TI-Retimer (Ex-1008)—their disclosures are cumulative over Lugthart993. Indeed, Amphenol relies on Tang and TI-Retimer to address claim features not purportedly directed to what the Examiner found to be allowable. Pet., 29-40 (Ground 1), 74-84 (Ground 2). Indeed, as discussed above in §IV.C.1, *supra*, original examination confirms that

limitation [1.e] was found to be allowable over the prior art, and the Petition turns to Aronson727's disclosure in both grounds for this limitation. Pet., 14-28, 41-45, 71-73, 85-87.

By including Tang and TI-Retimer, Amphenol tries to game the system. Amphenol knows it cannot present only Lugthart933 and Aronson727 and distinguish *Advanced Bionics* to survive a §325(d) challenge. In an attempt to tip the *Advanced Bionics* scale, Amphenol advances a second ground still using Aronson727—but with new references in place of Lugthart993 (but teaching limitations that were not found by the Examiner to be the reason for allowance). Ex-1002, 122-125, 231-233. In so doing, Amphenol can claim to have a “new” combination not before considered by the Office, when in actuality, this combination rises and falls with the same disclosure of Aronson727 in the first Lugthart993-based ground. *Compare* Pet., 71-73, 87 with Pet., 14-28, 41-45. The similar nature of both grounds is further evidenced by Amphenol's frequent use of “*supra*” citations in the second ground that refer the reader to the analysis in the first ground. *Id.* This second ground would not have provided anything additional to the Office that would have meaningfully changed the patentability determination with respect to the '252 patent.

The Office cannot reward Amphenol's attempt to subvert the *Advanced Bionics* inquiry. The two grounds of the Petition ultimately depend on the same

disclosure that was previously before the Office, and the new references offered by Amphenol do nothing to meaningfully counsel against a §325(d) denial.

(2) The Proposed Tang+TI-Retimer+Aronson727
Combination Is Not “New” To Warrant Further
Review

As discussed above, the disclosures of Tang and TI-Retimer are merely cumulative over Lugthart993, which was indisputably before the Office during original examination. In combining the teachings of Tang, TI-Retimer, and Aronson727 in Ground 2, Amphenol merely relies on Aronson727 to remedy defects in Tang and TI-Retimer with respect to the “fixed cable-independent equalization parameters” recited in limitation [1.e]. This is the same type of reliance on Aronson727 as that pursued in Ground 1 with respect to Lugthart993—namely with respect to the fixed cable-independent parameters recited in limitation [1.e]. See Pet., 71 (“**For the same reasons discussed supra §VI.C.1 concerning host-side equalization and pre-equalization in Lugthart-993,** POSAs would have implemented the host-side equalization (via the yellow-highlighted EQ) and the host-side pre-equalization (via the blue-highlighted FIR Filter) in Tang/TI-Retimer...” (emphasis added). And, as explained in §IV.C.3(b)(2), *infra* (and more specifically in the POPR), Aronson727 fails to disclose or suggest limitation [1.e], making Amphenol’s proposed Tang+TI-Retimer+Aronson727 combination not “new” to warrant further consideration by the PTAB.

3. *Advanced Bionics, Second Prong—Amphenol Failed To Demonstrate Material Error*

The second prong of *Advanced Bionics* is met because each of Amphenol’s proposed prior art combinations (Lugthart993+Aronson727 (Ground 1); Tang+TI-Retimer-Aronson727 (Ground 2)) rely on disclosure in Aronson727 (previously presented to the Office via Aronson464 and Aronson985), and yet, the Petition fails to demonstrate why lack of application of the disclosures in Aronson464 and Aronson985 amounted to material error. Under *Ecto World*, the burden to demonstrate material error under *Advanced Bionics*, second prong falls on the petitioner, and Amphenol fails to carry its burden. *Ecto World*, 5 (clarifying that “a **petitioner must provide an analysis** even when the asserted prior art is on an IDS, but the Examiner did not apply the reference.”) (emphasis added).

As discussed below, Amphenol’s contentions fail to meet the *Ecto World* standard because they are conclusory and factually inaccurate.

a) Amphenol Oversimplifies The File History (Both Grounds)

Amphenol’s showing of material error is based on a flawed premise that “the Examiner never considered Lugthart-993 in view of [Aronson727].” Pet., 102. But, as explained in §IV.C.2(b)(2), *supra*, the relied-upon disclosure from Aronson727 cited in Ground 1 was considered by the Examiner via presentation of Aronson484 and Aronson985 (each of which have the same disclosure as

Amphenol's relied-upon disclosure from Aronson⁷²⁷). Moreover, Amphenol's statement that "[t]he extent of the Examiner's evaluation was initialing an IDS" is presumptuous at best. Pet., 102. As previously noted, the file history demonstrates consideration of the Aronson disclosure by December 19, 2020 (*see* Ex-1002, 247-50), which is after applicant amended the claims on December 1, 2020 to accept allowable subject matter (*id.*, 210-217). The Petition fails to set forth any reasonable basis for its conclusion that the Examiner's lack of application of the Aronson disclosure was itself material error.

Moreover, Amphenol's assertion that "Examiner never discussed either Aronson-like reference, and never addressed their teachings in combination with Lugthart-993 as in Ground 1[]" is similarly suspect. Pet., 2. Amphenol overlooks that the Aronson disclosure was already made of record and considered by the Examiner by January 15, 2020 (Ex-1002, 69-70). This was before a first Notice of Allowance was issued on June 4, 2020 (*id.*, 118-25). By this time point, however, Lugthart993 had not yet been made of record, which instead occurred on September 24, 2020 based on applicant's subsequent IDS submission (*id.*, 155-57). The Examiner then considered Lugthart993 by October 1, 2020 (*id.*, 175-77), and subsequently issued a Non-Final Office Action applying prior art rejections based on Lugthart993 on October 29, 2020 (*id.*, 193-99). That Office Action identified allowable subject matter in dependent claim 3. That is, because the Aronson

disclosure had been considered by the Examiner by January 15, 2020, when the Examiner issued a Non-Final Office Action including substantive rejections based on Lugthart993, this was the result of consideration of Lugthart993 and the Aronson disclosure and a determination by the Examiner of the lack of relevance of the Aronson disclosure. Indeed, had the Examiner deemed the Aronson disclosure relevant, the Non-Final Office Action would have included such a rejection based on that disclosure. Mere silence does not amount to material error, and yet, Amphenol has not established that no reasonable examiner would have applied the Aronson disclosure differently. *Advanced Bionics*, 9 (“If reasonable minds can disagree regarding the purported treatment of the art or arguments, it cannot be said that the Office erred in a manner material to patentability”).

b) Amphenol’s Explanations Do Not Demonstrate Material Error (Both Grounds)

Beyond oversimplifying the file history as discussed above, Amphenol identifies three types of material error:¹²

¹² While Amphenol discusses these points in relation to Ground 1, its *Advanced Bionics* second prong arguments for Ground 2 demonstrates that it relies on the same identifications for both grounds. See Pet., 105-06 (“**For the same reasons discussed for BD Factor (e) (Ground 1) above**, BD factor (e) weighs against

- “that Lugthart-993 already employed equalization parameters for such remodulation and CDR”;
- “that Aronson teaches using fixed cable-independent equalization parameters for such remodulation and CDR for use in active copper cables like Lugthart-993’s”; and
- “that Aronson would have motivated a POSA to use fixed cable-independent equalization parameters for Lugthart-993’s remodulation and CDR on the host-side data streams.”

Pet., 103.

As a preliminary matter, each of the identifications above fails to reach the *Ecto World* standard for petitioners to demonstrate material error. This reflects “generalized statements as to the strength of its Petition to identify a material error.” *Ecto World*, 6. For instance, in addressing *Becton Dickinson* factor (e), Amphenol merely falls back to its contentions with respect to individual claim limitations, effectively suggesting that “the Board should have scoured the Petition to cobble together an argument under the second part of *Advanced Bionics*.” *Id.* (fn 2). Indeed, instead of citing to relevant portions of Lugthart993, Amphenol

denial. The Examiner erred in failing to evaluate the teachings of the Aronson-like references...” (emphasis added).

instead cites to parts of its Petition, thereby “improperly shift[ing] Petitioner’s burden to demonstrate material error onto the Board.” *Id.*; see Pet., 102 (citing “*Supra* §§VI.C, VI.D.7 (Ground 1, [1.E])” without any citation to Lugthart993).

(1) Amphenol’s IPR Grounds For Limitation [1.e]
Confirm A Lack Of Material Error In Relation To
Lugthart993

Amphenol’s assertion that the Examiner overlooked that “Lugthart-993 already employed **equalization parameters** for such remodulation and CDR” is at odds with its IPR grounds. Pet., 103 (emphasis added). Amphenol’s reference to Lugthart993’s “equalization parameters” in this sentence suggests reference to the Examiner’s analysis of Lugthart993 in relation to limitation [1.e]. See *id.* (citing “*Supra* §§VI.C, VI.D.7 (Ground 1, **[1.E]**)”).

But Amphenol’s own IPR grounds confirm the Examiner’s analysis with respect to the elements recited in limitation [1.e]. As previously noted, in a Non-Final Office Action issued October 29, 2020, the Examiner indicated then-pending claim 3 (which recited the elements now recited in [1.e]) as being allowable over Lugthart993. See Ex-1002, 199 (“Claims 3-7, 10-14, 17-20 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form...”). And Amphenol’s Ground 1 effectively concedes Lugthart993’s disclosure, alone, is insufficient to satisfy limitation [1.e] because it instead relies on Aronson727. See Pet., 45 (“**To the extent Lugthart-993 does**

not explicitly describe its equalizers 11a/11b and FIRs 27a/27b as utilizing

“cable-independent” parameters, as confirmed by Aronson and other references

corroborating a POSA’s background knowledge, that would have been the

conventional and obvious way to implement what Lugthart-993 describes.”)

(emphasis added). In other words, Amphenol’s contention regarding material error

requires disclosure from Lugthart993 that was purportedly overlooked by the

Examiner in identifying limitation [1.e] as allowable. And yet, Amphenol’s own

contentions reveal the same gap in the Lugthart993 disclosure. If Amphenol and

its expert thought the Lugthart993 disclosure was sufficient to reach limitation

[1.e], Ground 1 would not have included Aronson727.¹³

(2) Amphenol’s Reliance On The Aronson Disclosure
To Address Limitation [1.e] Requires Inference

Amphenol also asserts the Examiner erred in not applying the Aronson disclosure because, in its view, “Aronson teaches using fixed cable-independent equalization parameters for such remodulation and CDR for use in active copper

¹³ Tellingly, Amphenol’s only mappings to claim 1 within Ground 1 cite to the Aronson727 disclosure in reference to limitation [1.e]. *See* Pet., 29-46. In other words, Amphenol only relies on Aronson727 to remedy the defects of Lugthart993 with respect to limitation [1.e].

cables like Lugthart-993's." Pet., 103. According to Amphenol, "Aronson explains that a cable's transmitter performs cable-independent equalization on inbound data streams to 'compensat[e] for high frequency loss in the host board traces.'" Pet., 104 (citing Aronson727, 14:16-23). Amphenol further contends that "[h]ost board traces are independent of the cable so parameters compensating for them are cable-independent." *Id.* Again, these statements are in reference to the Examiner not having advanced a ground of rejection based on the Aronson disclosure in relation to limitation [1.e].

Amphenol fails to demonstrate that the Examiner's decision not to apply the Aronson disclosure amounted to material error. The Petition relies on a brief excerpt from Aronson727 describing an equalization block in a transmitter IC that compensates for host board impairments, noting only that such equalization "could be fixed." Ex-1006, 14:20-21. But, as will be explained in more detail in the POPR, this disclosure does not address the full scope of limitation [1.e]. In short, the Aronson disclosure does not link equalization to functions recited in limitation [1.e], nor does it limit the contemplated equalization to a fixed configuration. Amphenol's arguments regarding the Examiner's lack of analysis depends entirely on inference, not specific disclosure. The Petition therefore fails to identify a specific teaching overlooked by the Examiner.

Finally, Amphenol's assertion that the Examiner "overlooked" a motivation

from Aronson to apply fixed, cable-independent equalization parameters to Lugthart-993's remodulation and clock/data recovery operations is circular and fraught with impermissible hindsight bias. This argument presumes that Aronson contains a clear teaching or rationale linking its equalization discussion to the specific functions recited in limitation [1.e]—namely, remodulation and CDR. But the cited portion of Aronson discloses only that equalization in a transmitter IC “could be fixed” and is used to compensate for high-frequency loss in host board traces. Ex-1006, 14:20-21. Absent impermissible hindsight, Amphenol fails to advance record evidence explaining how this description identifies or associates these equalization parameters with remodulation or CDR.

V. CONCLUSION

For the reasons set forth above, Credo requests discretionary denial of the Petition.

Respectfully submitted,

Date: July 14, 2025

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CERTIFICATION UNDER 37 CFR § 42.24(d)

Under the provisions of 37 CFR § 42.24, the undersigned hereby certifies that the word count for the foregoing Patent Owner's Request for Discretionary Denial totals 11,192, which is less than the 14,000 allowed.

Respectfully submitted,

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CERTIFICATE OF SERVICE

Pursuant to 37 C.F.R. § 42.6(e)(4), the undersigned certifies that on July 14, 2025, a complete and entire copy of this Patent Owner's Request for Discretionary Denial and all supporting exhibits were provided via email, to the Petitioner, by serving the correspondence address of record as follows:

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