

Exhibit B-1

Invalidity of U.S. Patent No. 10,877,233 (the “’233 Patent”) in View of U.S. Patent No. 10,148,414 to Lugthart et al.

U.S. Patent No. 10,148,414 to Lugthart *et al.* (Lugthart ’414) was filed on June 30, 2017, was published October 19, 2017, and claims domestic priority to at least U.S. Patent Application No. 14,581,979 filed on December 23, 2014. Lugthart ’414 qualifies as prior art under 35 U.S.C. § 102(a)(1) (AIA) and 35 U.S.C. § 102(a)(2) (AIA).

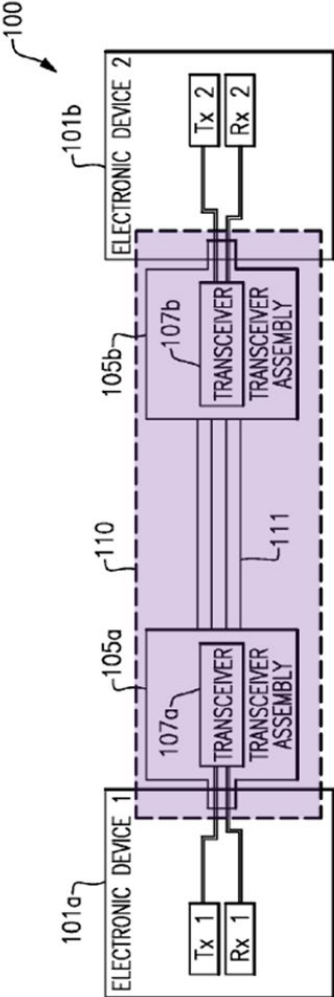
The Administrative Law Judge has not yet construed the claims and therefore the meaning of the terms in the claims has yet to be resolved. The support identified here for limitations of the Asserted Claims of the ’252 Patent is responsive to Complainant’s apparent infringement contentions in its Complaint, which Respondents disagree with. As such, nothing in Respondents’ claim charts should be construed as an admission regarding infringement, either literally or under the doctrine of equivalents, or as an admission regarding Respondents’ understanding of the proper scope of the Asserted Claims of the ’252 Patent.

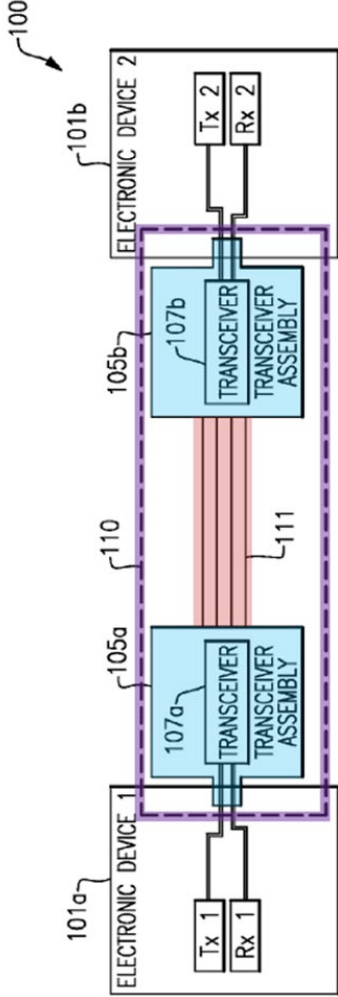
All cross-references should be understood to include material that is cross-referenced within the cross-reference. Where a particular Figure is cited, the citation should be understood to encompass the caption and description of the Figure as well as any text relating to or describing the Figure. Conversely, where particular text referring to a Figure is cited, the citation should be understood to include the Figure as well. Respondents reserve the right to rely on additional citations or sources of evidence that also may be applicable, or that may become applicable in light of claim construction, changes in Complainant’s infringement and/or domestic industry contentions, and/or information obtained during discovery as the Investigation progresses.

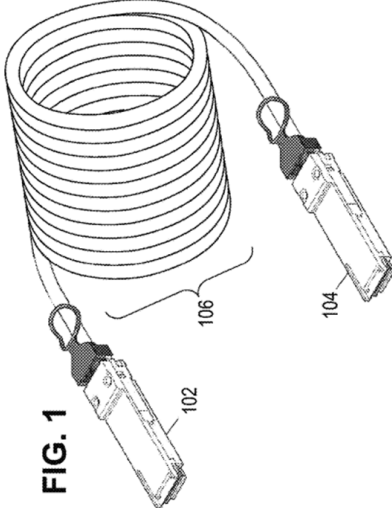
To the extent Complainant alleges that Lugthart ’414 does not disclose any particular limitation of the Asserted Claims of the ’252 Patent, either expressly or inherently, it would have been obvious to a person of ordinary skill in the art as of the priority date of the ’252 Patent to modify Lugthart ’414 and/or to combine the teachings of Lugthart ’414 with other prior art references, including but not limited to the prior art references cited in the Cover Pleading and the relevant section(s) of claim charts for other prior art references for the ’252 Patent in a manner that would have rendered the Asserted Claims invalid as obvious.

Because Complainant has yet to identify any limitation of the Asserted Claims of the ’252 Patent that it contends is not fully disclosed by Lugthart ’414, either alone or in combination with other prior art cited by Respondents, Respondents expressly reserve the right to rebut any such contention, including by identifying additional obviousness combinations, if any such contention is made by Complainant. Respondents further reserve the right to amend or supplement this claim chart at a later date as more fully set forth in the Cover Pleading.

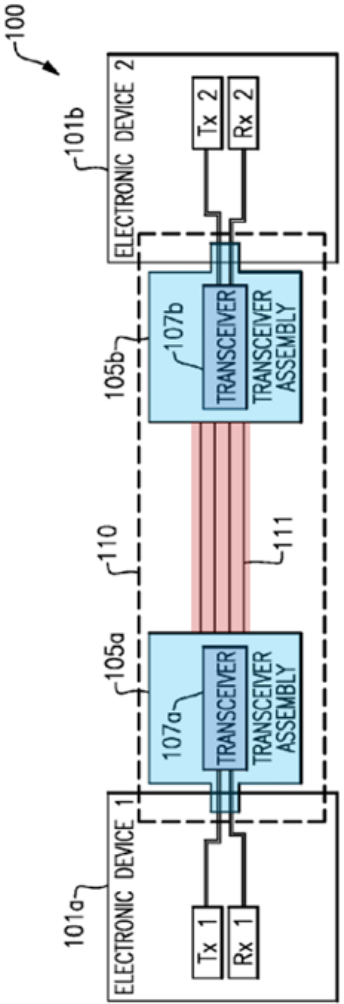
A. INDEPENDENT CLAIM 1

Claim 1	Lugthart '414
1[pre] An active Ethernet cable that comprises:	To the extent the preamble is limiting, Lugthart '414 discloses and/or renders obvious the preamble. Lugthart '414 discloses an active cable 110 including “actively powered componentry.” See, e.g., Lugthart '414 at 14:32-34, Fig. 2A (below highlighting cable 110). The cable 110 is an active Ethernet cable because it is configured to support data communications according to the Ethernet standard. See, e.g., <i>id.</i> at 16:35-43 (supports the “gigabit Ethernet” protocol).  FIG. 2A To the extent that this preamble is not disclosed, either explicitly or inherently, by Lugthart '414, this preamble is obvious to a person of ordinary skill in the art based on (1) Lugthart '414 alone, (2) the knowledge of a person of ordinary skill in the art; and/or (3) the teachings with respect to this preamble as detailed in the Cover Pleading, this Exhibit, and/or other invalidity claim charts. The motivations to modify or combine may come from, for example, the knowledge of the person of ordinary skill themselves, or from known problems and predictable solutions as embodied in these references, examples of which are discussed in the Cover Pleading or in this Exhibit.
1[a] electrical conductors connected between a first	Lugthart '414 discloses and/or renders obvious this limitation.

Claim 1	Lugthart '414
connector and a second connector,	Lugthart '414 discloses a cable 110 that includes "electrical conducting lines 111." See Lugthart '414 at 16:18-30. Conducting lines 111 are electrical conductors connected between first and second transceiver assemblies 105a/105b configured to be "electrically connected" to first and second electronic devices 101a/101b, respectively. See, e.g., <i>id.</i> 14:32-45, Fig. 2A (below).  FIG. 2A Lugthart '414 discloses transceiver assemblies 105a/105b each comprising "an input port that is configured to mechanically and electrically connect ... in a releasable fashion, to a corresponding port or other interface" on respective electronic devices 101a/101b, where the input ports include connectors similar to "small form-factor pluggable (SFP)" and/or "quad [SFP] (QSFP)" connectors, meeting the first and second connector, respectively. See Lugthart '414 at 15:43-59. To the extent that this limitation is not disclosed, either explicitly or inherently, by Lugthart '414, this limitation is obvious to a person of ordinary skill in the art based on (1) Lugthart '414 alone, (2) the knowledge of a person of ordinary skill in the art; and/or (3) the teachings with respect to this limitation as detailed in the Cover Pleading, this Exhibit, and/or other invalidity claim charts. The motivations to modify or combine may come from, for example, the knowledge of the person of ordinary skill themselves, or from known problems and predictable solutions as embodied in these references, examples of which are discussed in the Cover Pleading or in this Exhibit.

Claim 1	Lugthart '414
1[b] each of the first and second connectors being adapted to fit into an Ethernet port of a corresponding host device to receive from that host device an electrical input signal conveying an inbound data stream to the cable and to provide to that host device an electrical output signal conveying an outbound data stream from the cable,	Lugthart '414 discloses and/or renders obvious this limitation. The '252 Patent describes cable connectors with plugs “adapted to fit a standard-compliant Ethernet port” of host devices. <i>See</i> '252 Patent at 4:27-34; <i>see also id.</i> at 6:44-54 (specifications for connections are in the Ethernet standard and “within the [POSA]’s knowledge”). '252 Patent Figure 1 (below) illustrates connectors 102 and 104. The illustrated connectors are industry-standard SFP or QSFP-type Ethernet port connectors. FIG. 1  The cable 110 of Lugthart '414 discloses the subject matter of claims limitation 1[a] because each connector (transceiver assembly 105a/105b) is adapted to “mechanically and electrically connect ... to a corresponding port” on an electronic device 101a/101b which is a host device. <i>See, e.g.,</i> Lugthart '414 at 15:49-54, Fig. 2A (below). Each host device port is an Ethernet port of a corresponding host device because cable 110 is configured for Ethernet communications (Lugthart '414 at 16:35-43) and transceiver assemblies 105a/105b have connectors compliant with the same standards shown in '252 Patent Figure 1. <i>See, e.g.,</i> Lugthart '414 at 15:43-59 (e.g., SFP, QSFP).

Claim 1	Lugthart '414
	FIG.2A “[I]nbound” and “outbound” streams are between hosts and the cable, named from the cable’s perspective: “inbound data streams ... enter the cable” and “outbound data streams ... exit the cable.” See ’252 Patent at 3:67-4:3, 4:27-32. For the cable 110 disclosed in Lugthart ’414, “EGRESS/TRANSMIT” path is “inbound,” and its “INGRESS/RECEIVE” path is “outbound.” See, e.g., claim 1[pre]; Lugthart ’414 at Fig. 1A (below).

Claim 1	Lugthart '414
11c] each of the first and second connectors including a respective transceiver that 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,	knowledge of a person of ordinary skill in the art; and/or (3) the teachings with respect to this limitation as detailed in the Cover Pleading, this Exhibit, and/or other invalidity claim charts. The motivations to modify or combine may come from, for example, the knowledge of the person of ordinary skill themselves, or from known problems and predictable solutions as embodied in these references, examples of which are discussed in the Cover Pleading or in this Exhibit. Lugthart '414 discloses and/or renders obvious this limitation. Lugthart '414 discloses connectors (transceiver assemblies 105a/105b disclosed in Lugthart '414) and each ... includes a respective transceiver (transceivers 107a/107b, respectively). See Lugthart '414 at 14:50-56, 15:30-34, Fig. 2A (below). Transceivers 107a/107b each perform clock and data recovery on the input signal to extract and re-modulate the inbound data stream for transit via conductive lines 111, as discussed below.  FIG. 2A As shown in Figure 1A (below), Lugthart '414 discloses that each transceiver processes an electrical input signal conveying inbound data stream TX by equalizing the signals using equalizers 11a/11b, and then performs clock and data recovery ("CDR"), via CDR circuits 12a/12b and DSP13's FFE/DFE 15a/15b, on the equalized electrical input signal to extract the inbound data stream. See, e.g., Lugthart '414 at 9:30-41,

Claim 1	Lugthart '414 1:65-2:45, 8:3-26; <i>see also</i> 35:16-36:19 (“CDR system” of equalizer, CDR, and FFE/DFE).
	The diagram illustrates a transceiver system (10) operating between a HOST SIDE and a LINE SIDE. The system is divided into a TRANSCIVER block (10) and external components. TX Path (Egress/Transmit): Host Side: TX DATA (dashed red box) is input to EQ 11a. Transceiver: EQ 11a connects to CDR 12a, which connects to FFE/DFE 15a. FFE/DFE 15a connects to PCS 16, which connects to FIR 17. FIR 17 connects to DAC 14. Line Side: DAC 14 outputs to TX. RX Path (Ingress/Receive): Line Side: RX is input to EQ 21. Transceiver: EQ 21 connects to CDR 22, which connects to FFE/DFE 25. FFE/DFE 25 connects to PCS 26, which connects to FIR 27a. FIR 27a connects to DAC 24a. Host Side: DAC 24a outputs to RX DATA. Internal Transceiver Blocks: TX DSP: Includes FFE/DFE 15a, PCS 16, and FIR 17. RX DSP: Includes FFE/DFE 25, PCS 26, and FIR 27a. Arrows indicate the direction of signal flow: EGRESS/TRANSMIT (upward) and INGRESS/RECEIVE (downward).

FIG. 1A

Shown in Figure 1A (below), the extracted and recovered data is processed by PCS 16 and FIR 17 to “generate a serialized or multiplexed output signal having a desired modulation format” and to perform output pre-emphasis for the output signal, respectively, which DAC 14 converts into an analog signal for transmission as line-side signal TX. *See, e.g.,* Lugthart '414 at 4:23-31, 8:17-26, 9:42-10:7; *see also* 8:54-64 (transceivers 107a/107b communicate NRZ-modulated host-side signals and PAM-4-modulated line-side signals), 10:2-7, 13:16-51, 23:59-63, and 54:27-55:39 (listing modulation formats/conversions), 10:8-26 (DACs convert digital-to-analog); 23:64-24:7, 29:25-30, and 31:10-24 (FIR filters used for output pre-emphasis). Therefore, each transceiver further re-modulate[s] the extracted inbound data stream for transit via the electrical conductors as a respective electrical transit signal conveying a transit data stream.

Claim 1	Lugthart '414 The diagram illustrates a transceiver (10) with two main sections: a TX DSP (13) and an RX DSP (23). The TX path (labeled 'EGRESS/TRANSMIT') starts on the 'HOST SIDE' with TX DATA entering an EQ (11a), followed by a CDR (12a). The signal then enters the TX DSP (13), which contains an FFE/DFE (15a) and a PCS (16). The output of the TX DSP goes through an FIR (17) and a DAC (14) to the 'LINE SIDE' TX. The RX path (labeled 'INGRESS/RECEIVE') starts on the 'LINE SIDE' with RX DATA entering an EQ (21), followed by a CDR (22). The signal then enters the RX DSP (23), which contains an FFE/DFE (25), a PCS (26), and two FIRs (27a, 27b). The output of the RX DSP goes through two DACs (24a, 24b) back to the 'HOST SIDE'. FIG. 1A Nothing in the '252 Patent specification precludes pre-processing the input signal conveying the inbound data stream received from the host before performing CDR (i.e., processing by equalizers 11a/11b before CDR as disclosed in Lugthart '414), as CDR in the '252 Patent specification is performed on a signal that is pre-processed in the transceiver. See, e.g., '252 Patent at 6:62-7:16, Fig. 4 (below; CTLE 404 equalizes prior to CDR 408). Complainant has alleged infringement by products that perform “input equalization,” which does not appear internal to CDR functions. See, e.g., Exhibit 5 to Complaint, <i>Credo Semiconductor Inc. et al. v. Amphenol Corp.</i>, No. 2:25-cv-00296 (E.D. Tex. Mar. 13, 2025) (“EDTX Exhibit 5”) at 11-17 (limitations [1.C]-[1.D], identifying clock and data recovery via “retiming”), 17-25 (limitation [1.E], identifying parameters for “input equalization” and “output equalization”).
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Claim 1	Lugthart '414 FIG. 4 To the extent that this limitation is not disclosed, either explicitly or inherently, by Lugthart '414, this limitation is obvious to a person of ordinary skill in the art based on (1) Lugthart '414 alone, (2) the knowledge of a person of ordinary skill in the art; and/or (3) the teachings with respect to this limitation as detailed in the Cover Pleading, this Exhibit, and/or other invalidity claim charts. The motivations to modify or combine may come from, for example, the knowledge of the person of ordinary skill themselves, or from known problems and predictable solutions as embodied in these references, examples of which are discussed in the Cover Pleading or in this Exhibit.	1[d] the respective transceiver for each of the first and second connectors performing clock and data recovery on the respective electrical transit signal to extract and remodulate the transit data stream as the outbound data stream from the cable, and Lugthart '414 discloses and/or renders obvious this limitation. As disclosed by Lugthart '414 (Lugthart '414 Figure 1A below), in generating outbound data stream RX DATA, the respective transceiver (transceiver 107a/107b) for each of the first and second connectors (transceiver assemblies 105a/105b) perform[s] clock and data recovery on the respective electrical transit signal (line-side received signal RX) by equalizing the signal using equalizer 21, and performing CDR, via CDR circuit 22 and FFE/DFE 25, on the equalized electrical transit signal to extract the transit data stream. See, e.g., Lugthart '414 at 1:65-2:45, 9:30-41; see also 35:16-36:19 ("CDR system" of equalizer, CDR, and FFE/DFE), 9:14-41, 23:26-28, 24:8-15 (similar components/functions in egress and ingress paths).
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Claim 1	Lugthart '414 The diagram illustrates a transceiver system (10) divided into a HOST SIDE and a LINE SIDE. On the HOST SIDE, TX DATA enters a TX path through an EQ block (11a), a CDR block (12a), and another EQ block (11b). The RX path on the HOST SIDE starts with RX DATA entering two DAC blocks (24a and 24b), followed by two FIR blocks (27a and 27b). The TX path continues through an FFE/DFE block (15a), a PCS block (16), and a final FIR block (17) before reaching a DAC block (14) and the TX output. The RX path continues from the RX FIR blocks through an FFE/DFE block (25), a PCS block (26), and a CDR block (22) before reaching an EQ block (21) and the RX output. A dashed box (13) encloses the FFE/DFE and PCS blocks on both sides. A dashed box (23) encloses the FIR and FFE/DFE blocks on the RX side. Arrows indicate EGRESS/TRANSMIT and INGRESS/RECEIVE directions. FIG. 1A To the extent that this limitation is not disclosed, either explicitly or inherently, by Lugthart '414, this limitation is obvious to a person of ordinary skill in the art based on (1) Lugthart '414 alone, (2) the knowledge of a person of ordinary skill in the art; and/or (3) the teachings with respect to this limitation as detailed in the Cover Pleading, this Exhibit, and/or other invalidity claim charts. The motivations to modify or combine may come from, for example, the knowledge of the person of ordinary skill themselves, or from known problems and predictable solutions as embodied in these references, examples of which are discussed in the Cover Pleading or in this Exhibit.
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

Claim 1	Lugthart '414 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. See, e.g., claim limitation 1[c], Lugthart '414 at Fig. 1A (below). The diagram illustrates a transceiver (10) operating between a HOST SIDE and a LINE SIDE. The TX path (EGRESS/TRANSMIT) starts with TX DATA (in a red dashed box) entering the HOST SIDE, passing through equalizers 11a and 11b, then CDR circuits 12a and 12b. The signals then enter the TX DSP (13), which contains FFE/DFE blocks 15a and 15b, followed by PCS blocks 16 and FIR filters 17. The TX DSP output goes to DAC 14 and then to the TX output on the LINE SIDE. The RX path (INGRESS/RECEIVE) starts with RX on the LINE SIDE, passing through EQ 21, CDR 22, and FFE/DFE 23. The signal then enters the RX DSP (26), which contains PCS blocks 25 and FIR filters 27a and 27b. The RX DSP output goes to DACs 24a and 24b, and then to RX DATA on the HOST SIDE. FIG.1A Equalizers 11a/11b “compensate for transmission line losses on the host side” so an ordinarily skilled
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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).

Claim 1	Lugthart '414
	The diagram illustrates a transceiver (10) with two main sections: a Host Side and a Line Side, separated by a dashed line. The Host Side contains TX DATA and RX DATA inputs/outputs. The Line Side contains TX and RX outputs/inputs. The TX path (top) starts with TX DATA entering a DAC (24a), followed by a DAC (24b), then a TX DSP (13) block. The TX DSP (13) contains two parallel paths: one with EQ (11a), CDR (12a), and FFE/DFE (15a); the other with EQ (11b), CDR (12b), and FFE/DFE (15b). These paths converge into a PCS (16) block, followed by an FIR (17) block, and finally a DAC (14) outputting TX. The RX path (bottom) starts with RX entering an EQ (21), followed by a CDR (22), then an RX DSP (23) block. The RX DSP (23) contains two parallel paths: one with FIR (27a) and PCS (26); the other with FIR (27b) and PCS (26). These paths converge into an FFE/DFE (25) block, followed by a DAC (24a), then a DAC (24b), and finally RX DATA outputting to the Host Side. Arrows indicate 'EGRESS/TRANSMIT' for the TX path and 'INGRESS/RECEIVE' for the RX path. FIG. 1A FIRs 27a/27b's output pre-emphasis uses cable-independent equalization parameters for the remodulation. Specifically, FIRs 27a/27b condition the data signal by outputting time-varying levels that, when converted to analog by DACs 24a/24b, yield a remodulated signal equalized to suffer less distortion/degradation when transmitted. <i>See, e.g., Lugthart '414</i> at 31:10-24 (the FIR filters condition signals for output), 23:67-24:2 ("FIR filters ... perform emphasis on the signal to compensate for channel losses"), 22:10-23 (FIR filter tap coefficients are equalization parameters), 23:19-28 (DSP 13 and DSP 23 components are functionally similar), 29:25-30 (transceivers perform "output pre-emphasis") (pre-emphasis means pre-equalization). FIRs 27a/27b prepare the outbound data stream for transmission to the host and operates on a data stream already equalized (by equalizer 21) for line-side losses. <i>See, e.g., Lugthart '414</i> at 9:14-18; <i>see also</i> claim

Claim 1	Lugthart '414
	2. Thus, an ordinarily skilled artisan understood that FIRs 27a/27b employ “cable-independent” equalization parameters to pre-equalize the signal for host-side losses. <i>See, e.g.</i>, '252 Patent at 5:2-5 (“equalization parameters” include parameters for transmitter-side pre-equalizers). The FIRs 27a/27b and associated DACs 24a/24b meet the claim language. They collectively perform the same functions as transmit filter 506 of the '252 Patent. <i>See, e.g.</i>, '252 Patent at 7:53-56. Even if “re-modulation” was clearly linked to transmit filter 506, which it is not, nothing in the '252 Patent specification supports interpreting claim limitation 1[e] to require that equalization and remodulation be performed by a single functional block in Lugthart '414's transceiver. <i>Cross Med. Prods. v. Medtronic Sofamor Danek</i>, 424 F.3d 1293, 1309 (Fed. Cir. 2005) (“mere depiction of a structural claim feature as unitary in an embodiment, without more, does not mandate that the structural limitation be unitary.”). To the contrary, claim limitation 1[e] uses the same “employing ... equalization parameters for” language in connection with “each of” remodulation as the outbound stream to the host and CDR on the input signal from the host, and the specification is explicit that equalization can be performed by a different functional block than the one that does the CDR. <i>See, e.g.</i>, EDTX Exhibit 5 at 11-25 (discussed above in claim limitation 1[c]). Thus, claim limitation 1[e]'s requirement that the transceiver employ equalization parameters “for ... remodulation ... as the outbound data stream” is properly construed to cover conditioning the signal for transmission via pre-equalization and then converting it to analog form as an outbound data stream to the host, as disclosed in Lugthart '414. <i>Fixed, Cable-Independent</i> To the extent Lugthart '414 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 an ordinarily skilled artisan's background knowledge, that would have been the conventional and obvious way to implement what Lugthart '414 describes. Additionally, as the same corroborating references and Aronson teach, it would have been obvious to use “fixed cable-independent” parameters for the equalizers 11a/11b and FIRs 27a/27b of Lugthart '414. Thus, the pre-equalization of the output data stream to the host as disclosed in Lugthart '414, and its equalization of the input stream's electrical signal from the host, both use fixed cable-independent equalization parameters.

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Claim 1	Lugthart '414
	To the extent that this limitation is not disclosed, either explicitly or inherently, by Lugthart '414, this limitation is obvious to a person of ordinary skill in the art based on (1) Lugthart '414 alone, (2) the knowledge of a person of ordinary skill in the art; and/or (3) the teachings with respect to this limitation as detailed in the Cover Pleading, this Exhibit, and/or other invalidity claim charts. The motivations to modify or combine may come from, for example, the knowledge of the person of ordinary skill themselves, or from known problems and predictable solutions as embodied in these references, examples of which are discussed in the Cover Pleading or in this Exhibit.

B. DEPENDENT CLAIM 2

Claim 2	Lugthart '414
2[a] The active Ethernet cable of claim 1, wherein the respective transceivers each employ cable-dependent equalization parameters for at least one of: the remodulation of the inbound data stream for transit, and	Lugthart '414 discloses and/or renders obvious this limitation. Dependent claim 2 recites the transceivers as each employing “cable-dependent equalization parameters for at least one of: the remodulation of the inbound data stream for transit [to the line-side], and the [CDR] performed on the electrical transit signal” from the line-side. Meeting claim 2 only requires meeting “at least one” of those uses. The Lugthart-Aronson discloses the subject matter of both alternatives recited in claim 2. <i>Remodulation of Inbound Data Stream for Transit</i> Lugthart '414's transceivers (107a/107b), via PCS 16, FIR 17, and DAC 14, each remodulates the inbound data stream for transit over the cable as a line-side signal TX. <i>See, e.g.,</i> claim limitation 1[c]. FIR 17 performs part of the re modulation by shaping signals for better transmission through the cable's conductors, with DAC 14 converting the shaped signal to an analog signal. <i>See, e.g.,</i> Lugthart '414 at 23:49-24:7, 31:10-24, Fig. 1A.

Claim 2	Lugthart '414 The diagram illustrates a transceiver (10) divided into a HOST SIDE and a LINE SIDE. The TX path (Egress/Transmit) starts with TX DATA entering an EQ block (11a), followed by a CDR block (12a). The signal then enters the TX DSP (13), which contains an FFE/DFE block (15a) and a PCS block (16). The output of the TX DSP goes through an FIR block (17) and a DAC block (14) before being sent to the TX output. The RX path (Ingress/Receive) starts with RX DATA entering a DAC block (24a), followed by an FIR block (27a). The signal then enters the RX DSP (23), which contains a PCS block (25) and an FFE/DFE block (26). The output of the RX DSP goes through a CDR block (22) and an EQ block (21) before being sent to the RX output. The diagram also shows a dashed box around the TX output and a dashed box around the RX input. FIG. 1A FIR 17 employs equalization parameters for “perform[ing] emphasis on the signal to compensate for channel losses.” See, e.g., Lugthart '414 at 23:49-24:7, 31:10-24. An ordinarily skilled artisan understood this describes pre-equalization for “channel” losses through the cable’s conductors (line-side) because equalizers 11a/11b already compensated for host-side losses for CDR and because the transceivers of Lugthart'414 perform pre-equalization. See, e.g., <i>id.</i> at 9:42-55 (DSPs process data already recovered by CDR circuits), 29:25-30 (output pre-emphasis), 30:44-57, 31:10-24 (the FIR filters condition signals for output). Because its equalization compensates for transmission losses over the cable, POSA’s understood that FIR 17 employs equalization parameters that are “cable dependent.” To the extent Lugthart '414 is considered to not explicitly describe FIR 17’s equalization as using “cable dependent” parameters, that would have been the conventional and obvious way to implement the
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Claim 2	Lugthart '414
	equalization described in Lugthart '414 to address losses over the cable. Performing equalization and conversion to analog in separate functional blocks meets the proper construction of employing “equalization parameters for the remodulation” of a data stream for the same reasons discussed claim limitation 1[e]. Thus, Lugthart '414 meets claim 2’s alternative (“at least one”) of employing cable-dependent equalization parameters for the remodulation of the inbound data stream for transmit. To the extent that this limitation is not disclosed, either explicitly or inherently, by Lugthart '414, this limitation is obvious to a person of ordinary skill in the art based on (1) Lugthart '414 alone, (2) the knowledge of a person of ordinary skill in the art; and/or (3) the teachings with respect to this limitation as detailed in the Cover Pleading, this Exhibit, and/or other invalidity claim charts. The motivations to modify or combine may come from, for example, the knowledge of the person of ordinary skill themselves, or from known problems and predictable solutions as embodied in these references, examples of which are discussed in the Cover Pleading or in this Exhibit.
2[b] the clock and data recovery performed on the electrical transit signal.	Lugthart '414 discloses and/or renders obvious this limitation. <i>CDR on the Received Transit (Line-Side) Signal</i> CDR circuit 22 and FFE/DFE 25 in Lugthart '414’s transceiver (107a/107b) performs CDR on the equalized received line-side transit data stream. <i>See, e.g.</i>, claim limitation 1[d]. Equalizer 21 “compensate[s] for transmission line losses on the line side” and thus uses cable dependent equalization parameters. <i>See, e.g.</i>, Lugthart '414 at 9:14-29, 22:49-54 (compensates for losses “over the cable”), Fig. 1A.

Claim 2	Lugthart '414 The diagram illustrates a transceiver (10) divided into a HOST SIDE and a LINE SIDE. On the HOST SIDE, TX DATA enters the TX path through an EQ (11a) and a CDR (12a). The RX path enters through a DAC (24a) and a CDR (27a). On the LINE SIDE, TX DATA enters through an EQ (11b) and a CDR (12b). The RX path enters through a DAC (24b) and a CDR (27b). Both TX and RX paths pass through a TX DSP (13) and an RX DSP (23). The TX DSP (13) includes FFE/DFE blocks (15a, 15b), a PCS block (16), and an FIR block (17). The RX DSP (23) includes FFE/DFE blocks (25, 26), a PCS block (27), and an FIR block (28). The TX path ends with a DAC (14) and the RX path ends with an EQ (21) and a CDR (22). The RX path is shown in a dashed box. Arrows indicate EGRESS/TRANSMIT and INGRESS/RECEIVE directions. FIG. 1A To the extent Lugthart '414 is considered to not explicitly describe equalizer 21 as using “cable dependent” parameters, that would have been a conventional and obvious way to compensate for the cable losses using cable dependent parameters based on cable length and characteristics. Performing equalization and CDR in separate functional blocks meets the proper construction of employing “equalization parameters for [CDR]” for the same reasons discussed for claim limitation 1[e]. Thus, using cable-dependent parameters in Lugthart '414's equalizer 21 meets claim 2's alternative (“at least one”) of employing cable-dependent equalization parameters for the CDR performed on the electrical transit signal. To the extent that this limitation is not disclosed, either explicitly or inherently, by Lugthart '414, this limitation is obvious to a person of ordinary skill in the art based on (1) Lugthart '414 alone, (2) the
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Claim 2	Lugthart '414
	knowledge of a person of ordinary skill in the art; and/or (3) the teachings with respect to this limitation as detailed in the Cover Pleading, this Exhibit, and/or other invalidity claim charts. The motivations to modify or combine may come from, for example, the knowledge of the person of ordinary skill themselves, or from known problems and predictable solutions as embodied in these references, examples of which are discussed in the Cover Pleading or in this Exhibit.

C. DEPENDENT CLAIM 3

Claim 3	Lugthart '414
3. The active Ethernet cable of claim 2, wherein said cable-dependent equalization parameters adapt during usage of the Ethernet cable.	Lugthart '414 discloses and/or renders obvious this limitation. The '252 Patent describes three "usage" phases: (1) the cable is tested during a manufacturing-testing phase (8:16-38); (2) after cable installation in the field a training phase is performed during which equalization parameters can be adapted from factory-set values (7:27-47, 8:31-37); and (3) "normal operations" begin after the training phase (7:46-50). While claim 4 refers to "normal usage," claim 3 more broadly recites "during usage" which encompasses adaptation during use of the cable in a training phase. Lugthart '414 discloses training phases during which "parameters of the components in the transceivers connected to the first and second electronic devices are adjusted" including "parameters for the equalizers." <i>See</i> Lugthart '414 at 48:64-49:37. An ordinarily skilled artisan understood that the transceivers "connected to" the host electronic devices are the cable's transceivers. <i>See, e.g., id.</i> at 29:25-30 (cable transceivers are "adaptive" for performing equalization including pre-emphasis) (pre-emphasis means pre-equalization). The recitation in claim 3 of "said cable-dependent equalization parameters" find their antecedent basis in claim 2, which requires their use in "at least one" of two alternative ways. The cable-dependent equalization performed by the FIR 17 and equalizer 21 of Lugthart '414 meet both alternatives. <i>See, e.g., claim 2; Lugthart '414 at 9:14-18, Fig. 1A (below).</i> To the extent Lugthart '414 is considered to not specifically teach adapting the equalization coefficients used by FIR 17 and equalizer 21 during the training phases described by Lugthart '414.

Claim 3	Lugthart '414 The diagram illustrates a transceiver system (10) operating between a HOST SIDE and a LINE SIDE. The system is divided into two main functional blocks: the TX DSP (Transmit Digital Signal Processor) and the RX DSP (Receive Digital Signal Processor). TX Path (Transmit): Host Side: TX DATA enters the TX DSP. It passes through an EQ (Equalizer) block (11a) and a CDR (Clock Data Recovery) block (12a). Line Side: The signal enters the TX DSP through an EQ (11b) and a CDR (12b). It then passes through two FFE/DFE (Feed Forward Equalization / Decision Feedback Equalization) blocks (15a and 15b), a PCS (Pulse Cancellation System) block (16), and an FIR (Finite Impulse Response) filter (17). The output of the FIR filter is then processed by a DAC (Digital-to-Analog Converter) block (14) to produce the TX signal. RX Path (Receive): Line Side: The RX signal enters the RX DSP through an EQ (21) and a CDR (22). Host Side: The signal then passes through two FFE/DFE blocks (25a and 25b), a PCS block (26), and two FIR filter blocks (27a and 27b). The outputs of these FIR filters are then processed by DAC blocks (24a and 24b) to produce the RX DATA. The entire system is labeled as FIG. 1A. Lugthart '414 discloses cable-dependent parameters (1) used by FIR 17 to perform equalization for the remodulation of the inbound data stream for transmit to the line side, and (2) used by equalizer 21 for the [CDR] performed on the electrical transit signal (see, e.g., claim 2), are adapted during training and thus “adapt[ed] during use of the Ethernet cable” because, as discussed above, claim 3’s “during usage of the Ethernet cable” is broader than claim 4’s “normal usage” and encompasses usage during training. To the extent that this claim is not disclosed, either explicitly or inherently, by Lugthart '414, this limitation is obvious to a person of ordinary skill in the art based on (1) Lugthart '414 alone, (2) the knowledge of a person of ordinary skill in the art; and/or (3) the teachings with respect to this claim as detailed in the Cover Pleading, this Exhibit, and/or other invalidity claim charts. The motivations to modify
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Claim 3	Lugthart '414
	or combine may come from, for example, the knowledge of the person of ordinary skill themselves, or from known problems and predictable solutions as embodied in these references, examples of which are discussed in the Cover Pleading or in this Exhibit.

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D. DEPENDENT CLAIM 4

Claim 4	Lugthart '414
4[a] The active Ethernet cable of claim 2, wherein said cable-dependent equalization parameters are fixed during normal usage of the Ethernet cable, and	Lugthart '414 discloses and/or renders obvious this limitation. The recitation in claim 4 of “said cable-dependent equalization parameters” find its antecedent basis in claim 2 which requires their use in “at least one” of two alternative ways. The cable-dependent equalization performed by the FIR 17 and equalizer 21 of Lugthart '414 separately meet both claim 2 alternatives. <i>See, e.g.,</i> claim 2; Lugthart '414 at 9:14-19, Fig. 1A. To the extent that this limitation is not disclosed, either explicitly or inherently, by Lugthart '414, this limitation is obvious to a person of ordinary skill in the art based on (1) Lugthart '414 alone, (2) the knowledge of a person of ordinary skill in the art; and/or (3) the teachings with respect to this limitation as detailed in the Cover Pleading, this Exhibit, and/or other invalidity claim charts. The motivations to modify or combine may come from, for example, the knowledge of the person of ordinary skill themselves, or from known problems and predictable solutions as embodied in these references, examples of which are discussed in the Cover Pleading or in this Exhibit.
4[b] wherein said cable-dependent equalization parameters are determined during manufacturing-testing of the Ethernet cable.	Lugthart '414 discloses and/or renders obvious this limitation. To the extent that this limitation is not disclosed, either explicitly or inherently, by Lugthart '414, this limitation is obvious to a person of ordinary skill in the art based on (1) Lugthart '414 alone, (2) the knowledge of a person of ordinary skill in the art; and/or (3) the teachings with respect to this limitation as detailed in the Cover Pleading, this Exhibit, and/or other invalidity claim charts. The motivations to modify or combine may come from, for example, the knowledge of the person of ordinary skill themselves, or from known problems and predictable solutions as embodied in these references, examples of which are discussed in the Cover Pleading or in this Exhibit.

E. DEPENDENT CLAIM 5

Claim 5	Lugthart '414
5. The active Ethernet cable of claim 4, wherein the inbound data stream and the outbound data stream each have a per-lane symbol rate in excess of 50 GBd.	Lugthart '414 discloses and/or renders obvious this limitation. A "lane" is a single data communication path. <i>See, e.g.</i>, IEEE Standard for Ethernet, IEEE 802.3 (2015) Section One at 86. A "symbol" is the smallest unit of data transmission over a medium and depends on the coding system used, and a "symbol rate" is a measure of symbols transferred per second, expressed in baud ("Bd"). <i>See, e.g., id.</i> at 95-96. Data streams with a "per-lane symbol rate in excess of 50 GBd" exceed 50 giga (billion) symbols per second, per lane. The transceivers of Lugthart '414 support multiple lanes for the inbound (TX) and outbound (RX) data streams. <i>See, e.g.</i>, Lugthart '414 at Fig. 1A. CDR processing by each set of equalizer (11a), CDR circuit (12a), and FFE/DFE (15a), as in Figure 1A below, has a data rate up to 300 Gbit/s. <i>See, e.g.</i>, Lugthart '414 at 35:25-39. An ordinarily skilled artisan understood that the other components in the same lane as these components support the same data rate because Lugthart '414 's described data rate for CDR would be meaningless if other components in the same lane only supported a lower data rate. To the extent that this claim is not disclosed, either explicitly or inherently, by Lugthart '414, this limitation is obvious to a person of ordinary skill in the art based on (1) Lugthart '414 alone, (2) the knowledge of a person of ordinary skill in the art; and/or (3) the teachings with respect to this claim as detailed in the Cover Pleading, this Exhibit, and/or other invalidity claim charts. The motivations to modify or combine may come from, for example, the knowledge of the person of ordinary skill themselves, or from known problems and predictable solutions as embodied in these references, examples of which are discussed in the Cover Pleading or in this Exhibit.

F. INDEPENDENT CLAIM 6

Claim 6	Lugthart '414
6[pre] A communication method that comprises, in a network cable having conductor pairs electrically connecting a first connector to a second connector	To the extent the preamble is limiting, Lugthart '414 discloses and/or renders obvious the preamble. The cable of Lugthart '414 is a network (e.g., Ethernet) cable having conductor pairs (conducting lines 111 include sets of paired egress/transmit and ingress/receive conductors) electrically connecting a first connector (transceiver assembly 105a) to a second connector (transceiver assembly 105b). See, e.g., claim 1 (1[pre]. 1[a], 1[b]); Lugthart '414 at 14:15-31 (link between electronic devices can connect computer and network router), 16:18-43, Fig. 2A (below), 17:21-25 ("a first paired differential cable for communication in a first direction and a second paired differential cable for communication in a second direction. A paired differential cable ... includes a pair of wires"). FIG. 2A The cable disclosed in Lugthart '414 has first 141 and second 142 pairs of conducting lines to, respectively, transmit signals in the egress/transmit and ingress/receive directions. See, e.g., Lugthart '414 at 18:20-30, Fig. 3A

Claim 6	Lugthart '414
	The cable disclosed in Lugthart '414 has four pairs of conducting lines 161-164 providing two logical channels in each direction. <i>See, e.g.,</i> Lugthart '414 at 18:36-49, Fig. 3B. FIG. 3A Claim 6 recites cable-performed steps of a communication method where two data streams between first and second host devices flow in opposite directions. The cable of Lugthart '414 is used in a bi-directional communication method. <i>See, e.g.,</i> claim 1. Figures 2A and 4A (below) of Lugthart '414 show the two data streams (one blue and one yellow) and their corresponding steps in claim 6. <i>See, e.g.,</i> Lugthart '414 at 19:41-52 (Figure 4A uses Figure 1A transceivers). FIG. 3B

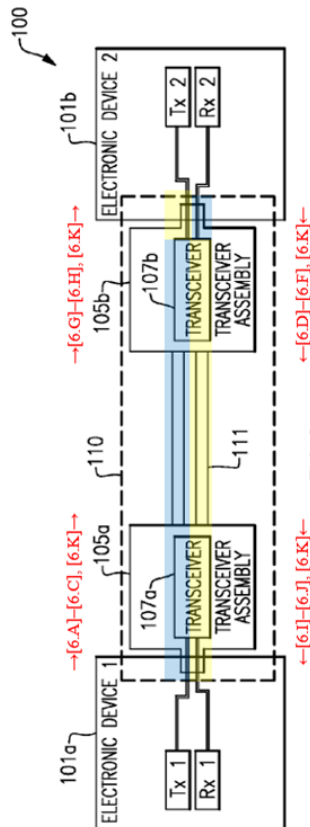


FIG. 2A

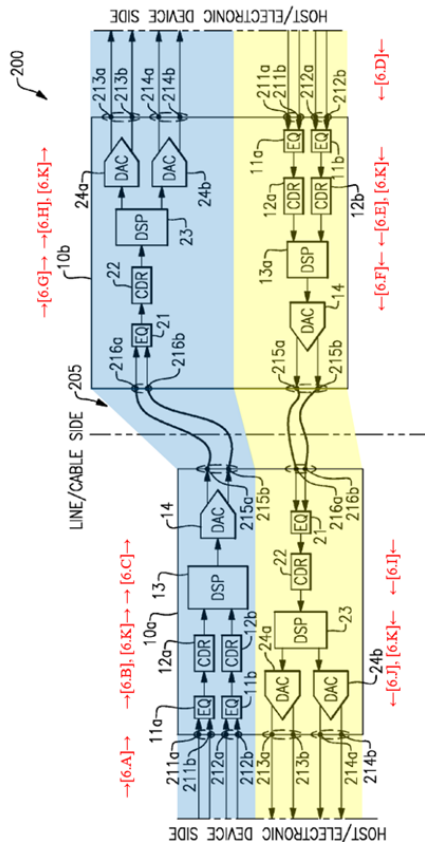


FIG. 4A

The blue stream is a first inbound data stream from a first host device [left side of Figures 2A/4A] that is received by the first connector (claim limitation 6[a]), passed through cable conductors, and conveyed as a second outbound data stream to the second host device (claim limitations 6[b], 6[c], 6[g], 6[h], 6[k]). The yellow stream is a second inbound data stream from the second host device [right side of Figures 2A/4A] that is received by the second connector (claim limitation 6[d]), passed through cable conductors, and conveyed as a first outbound data stream to the first host device (claim limitations 6[e], 6[f], 6[i], 6[j]).

Claim 6	Lugthart '414
	Claim limitations 6[a]-6[c] recite the first connector's transceiver performing CDR and re-modulating the first inbound stream for transmission over the first conductor pair, and claim limitations 6[d]-6[f] recite the same steps performed by the second connector's transceiver on the second inbound stream for transmission over the second conductor pair. The Lugthart '414-Aronson discloses the subject matter of these limitations. Claim limitations 6[g]-6[h] recite the second connector's transceiver performing CDR and re-modulating the (blue) data stream received over the first conductor pair, and claim limitations 6[i]-6[j] recite the same steps performed by the first connector's transceiver on the (yellow) data stream received over the second conductor pair. The Lugthart '414-Aronson discloses the subject matter of these limitations. Claim limitation 6[k] requires that each of the remodulating and CDR in steps claim limitations 6[b]-6[c] and claim limitations 6[c]-6[j] employ fixed, cable-independent equalization parameters. The Lugthart '414-Aronson discloses the subject matter of these limitations. To the extent that this preamble is not disclosed, either explicitly or inherently, by Lugthart '414, this preamble is obvious to a person of ordinary skill in the art based on (1) Lugthart '414 alone, (2) the knowledge of a person of ordinary skill in the art; and/or (3) the teachings with respect to this preamble as detailed in the Cover Pleading, this Exhibit, and/or other invalidity claim charts. The motivations to modify or combine may come from, for example, the knowledge of the person of ordinary skill themselves, or from known problems and predictable solutions as embodied in these references, examples of which are discussed in the Cover Pleading or in this Exhibit.
6[a] receiving with the first connector a first electrical input signal conveying a first inbound data stream from a first host device;	Lugthart '414 discloses and/or renders obvious this limitation. Lugthart '414 discloses the subject matter of claim limitation 6[a] for the same reasons that Lugthart '414 discloses the subject matter of claim limitation 1[c]. <i>See, e.g.,</i> claim 1. To the extent that this limitation is not disclosed, either explicitly or inherently, by Lugthart '414, this limitation is obvious to a person of ordinary skill in the art based on (1) Lugthart '414 alone, (2) the knowledge of a person of ordinary skill in the art; and/or (3) the teachings with respect to this limitation as detailed in the Cover Pleading, this Exhibit, and/or other invalidity claim charts. The motivations to modify or combine may come from, for example, the knowledge of the person of ordinary skill themselves, or

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Claim 6	Lugthart '414
	from known problems and predictable solutions as embodied in these references, examples of which are discussed in the Cover Pleading or in this Exhibit.
6[b] performing clock and data recovery on the first electrical input signal with a first transceiver in the first connector to extract the first inbound data stream;	Lugthart '414 discloses and/or renders obvious this limitation. Lugthart '414 discloses the subject matter of claim limitation 6[b] for the same reasons that Lugthart '414 discloses the subject matter of claim limitation 1[c]. <i>See, e.g.,</i> claim 1. To the extent that this limitation is not disclosed, either explicitly or inherently, by Lugthart '414, this limitation is obvious to a person of ordinary skill in the art based on (1) Lugthart '414 alone, (2) the knowledge of a person of ordinary skill in the art; and/or (3) the teachings with respect to this limitation as detailed in the Cover Pleading, this Exhibit, and/or other invalidity claim charts. The motivations to modify or combine may come from, for example, the knowledge of the person of ordinary skill themselves, or from known problems and predictable solutions as embodied in these references, examples of which are discussed in the Cover Pleading or in this Exhibit.
6[c] re-modulating the first inbound data stream as a first transit data stream conveyed by a first electrical transit signal over a first of the conductor pairs;	Lugthart '414 discloses and/or renders obvious this limitation. Lugthart '414 discloses the subject matter of claim limitation 6[c] for the same reasons that Lugthart '414 discloses the subject matter of claim limitation 1[c]. <i>See, e.g.,</i> claim 1. To the extent that this limitation is not disclosed, either explicitly or inherently, by Lugthart '414, this limitation is obvious to a person of ordinary skill in the art based on (1) Lugthart '414 alone, (2) the knowledge of a person of ordinary skill in the art; and/or (3) the teachings with respect to this limitation as detailed in the Cover Pleading, this Exhibit, and/or other invalidity claim charts. The motivations to modify or combine may come from, for example, the knowledge of the person of ordinary skill themselves, or from known problems and predictable solutions as embodied in these references, examples of which are discussed in the Cover Pleading or in this Exhibit.
6[d] receiving with the second connector a	Lugthart '414 discloses and/or renders obvious this limitation. Lugthart '414 discloses the subject matter of claim limitation 6[d] for the same reasons that Lugthart '414

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Claim 6	Lugthart '414
second electrical input signal conveying a second inbound data stream from a second host device;	discloses the subject matter of claim limitation 1[c]. <i>See, e.g.</i>, claim 1. To the extent that this limitation is not disclosed, either explicitly or inherently, by Lugthart '414, this limitation is obvious to a person of ordinary skill in the art based on (1) Lugthart '414 alone, (2) the knowledge of a person of ordinary skill in the art; and/or (3) the teachings with respect to this limitation as detailed in the Cover Pleading, this Exhibit, and/or other invalidity claim charts. The motivations to modify or combine may come from, for example, the knowledge of the person of ordinary skill themselves, or from known problems and predictable solutions as embodied in these references, examples of which are discussed in the Cover Pleading or in this Exhibit.
6[e] performing clock and data recovery on the second electrical input signal with a second transceiver in the second connector to extract the second inbound data stream;	Lugthart '414 discloses and/or renders obvious this limitation. Lugthart '414 discloses the subject matter of claim limitation 6[c] for the same reasons that Lugthart '414 discloses the subject matter of claim limitation 1[c]. <i>See, e.g.</i>, claim 1. To the extent that this limitation is not disclosed, either explicitly or inherently, by Lugthart '414, this limitation is obvious to a person of ordinary skill in the art based on (1) Lugthart '414 alone, (2) the knowledge of a person of ordinary skill in the art; and/or (3) the teachings with respect to this limitation as detailed in the Cover Pleading, this Exhibit, and/or other invalidity claim charts. The motivations to modify or combine may come from, for example, the knowledge of the person of ordinary skill themselves, or from known problems and predictable solutions as embodied in these references, examples of which are discussed in the Cover Pleading or in this Exhibit.
6[f] re-modulating the second inbound data stream as a second transit data stream conveyed by a second electrical transit signal over a second of the conductor pairs;	Lugthart '414 discloses and/or renders obvious this limitation. Lugthart '414 discloses the subject matter of claim limitation 6[f] for the same reasons that Lugthart '414 discloses the subject matter of claim limitation 1[c]. <i>See, e.g.</i>, claim 1. To the extent that this limitation is not disclosed, either explicitly or inherently, by Lugthart '414, this limitation is obvious to a person of ordinary skill in the art based on (1) Lugthart '414 alone, (2) the knowledge of a person of ordinary skill in the art; and/or (3) the teachings with respect to this limitation as detailed in the Cover Pleading, this Exhibit, and/or other invalidity claim charts. The motivations to modify

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Claim 6	Lugthart '414
	or combine may come from, for example, the knowledge of the person of ordinary skill themselves, or from known problems and predictable solutions as embodied in these references, examples of which are discussed in the Cover Pleading or in this Exhibit.
6[g] performing clock and data recovery on the first electrical transit signal with the second transceiver to extract the first transit data stream;	Lugthart '414 discloses and/or renders obvious this limitation. Lugthart '414 discloses the subject matter of claim limitation 6[g] for the same reasons that Lugthart '414 discloses the subject matter of claim limitation 1[d]. <i>See, e.g.</i>, claim 1. To the extent that this limitation is not disclosed, either explicitly or inherently, by Lugthart '414, this limitation is obvious to a person of ordinary skill in the art based on (1) Lugthart '414 alone, (2) the knowledge of a person of ordinary skill in the art; and/or (3) the teachings with respect to this limitation as detailed in the Cover Pleading, this Exhibit, and/or other invalidity claim charts. The motivations to modify or combine may come from, for example, the knowledge of the person of ordinary skill themselves, or from known problems and predictable solutions as embodied in these references, examples of which are discussed in the Cover Pleading or in this Exhibit.
6[h] re-modulating the first transit data stream as a second outbound data stream conveyed by a second electrical output signal to the second host device;	Lugthart '414 discloses and/or renders obvious this limitation. Lugthart '414 discloses the subject matter of claim limitation 6[h] for the same reasons that Lugthart '414 discloses the subject matter of claim limitation 1[d]. <i>See, e.g.</i>, claim 1. To the extent that this limitation is not disclosed, either explicitly or inherently, by Lugthart '414, this limitation is obvious to a person of ordinary skill in the art based on (1) Lugthart '414 alone, (2) the knowledge of a person of ordinary skill in the art; and/or (3) the teachings with respect to this limitation as detailed in the Cover Pleading, this Exhibit, and/or other invalidity claim charts. The motivations to modify or combine may come from, for example, the knowledge of the person of ordinary skill themselves, or from known problems and predictable solutions as embodied in these references, examples of which are discussed in the Cover Pleading or in this Exhibit.
6[i] performing clock and	Lugthart '414 discloses and/or renders obvious this limitation.

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Claim 6	Lugthart '414
data recovery on the second electrical transit signal with the first transceiver to extract the second transit data stream; and	Lugthart '414 discloses the subject matter of claim limitation 6[i] for the same reasons that Lugthart '414 discloses the subject matter of claim limitation 1[d]. <i>See, e.g.,</i> claim 1. To the extent that this limitation is not disclosed, either explicitly or inherently, by Lugthart '414, this limitation is obvious to a person of ordinary skill in the art based on (1) Lugthart '414 alone, (2) the knowledge of a person of ordinary skill in the art; and/or (3) the teachings with respect to this limitation as detailed in the Cover Pleading, this Exhibit, and/or other invalidity claim charts. The motivations to modify or combine may come from, for example, the knowledge of the person of ordinary skill themselves, or from known problems and predictable solutions as embodied in these references, examples of which are discussed in the Cover Pleading or in this Exhibit.
6[j] re-modulating the second transit data stream as a first outbound data stream conveyed by a first electrical output signal to the first host device,	Lugthart '414 discloses and/or renders obvious this limitation. Lugthart '414 discloses the subject matter of claim limitation 6[j] for the same reasons that Lugthart '414 discloses the subject matter of claim limitation 1[d]. <i>See, e.g.,</i> claim 1. To the extent that this limitation is not disclosed, either explicitly or inherently, by Lugthart '414, this limitation is obvious to a person of ordinary skill in the art based on (1) Lugthart '414 alone, (2) the knowledge of a person of ordinary skill in the art; and/or (3) the teachings with respect to this limitation as detailed in the Cover Pleading, this Exhibit, and/or other invalidity claim charts. The motivations to modify or combine may come from, for example, the knowledge of the person of ordinary skill themselves, or from known problems and predictable solutions as embodied in these references, examples of which are discussed in the Cover Pleading or in this Exhibit.
6[k] wherein said re-modulating the first transit data stream, said re-modulating the second transit data stream, said performing clock and data recovery on the first	Lugthart '414 discloses and/or renders obvious this limitation. Lugthart '414 discloses the subject matter of claim limitation 6[k] for the same reasons that Lugthart '414 discloses the subject matter of claim limitation 1[e]. <i>See, e.g.,</i> claim 1. To the extent that this limitation is not disclosed, either explicitly or inherently, by Lugthart '414, this limitation is obvious to a person of ordinary skill in the art based on (1) Lugthart '414 alone, (2) the knowledge of a person of ordinary skill in the art; and/or (3) the teachings with respect to this limitation as

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Claim 6	Lugthart '414
electrical input signal, and said performing clock and data recovery on the second electrical input signal, each employ fixed, cable-independent, equalization parameters.	detailed in the Cover Pleading, this Exhibit, and/or other invalidity claim charts. The motivations to modify or combine may come from, for example, the knowledge of the person of ordinary skill themselves, or from known problems and predictable solutions as embodied in these references, examples of which are discussed in the Cover Pleading or in this Exhibit.

G. DEPENDENT CLAIM 7

Claim 7	Lugthart '414
7[a] The communication method of claim 6, wherein cable-dependent equalization parameters are employed for at least one of: re-modulating the first inbound data stream,	Lugthart '414 discloses and/or renders obvious this limitation. Lugthart '414 discloses the subject matter of claim limitation 7[a] for the same reasons that Lugthart '414 discloses the subject matter of claim 2. <i>See, e.g.,</i> claim 2. To the extent that this limitation is not disclosed, either explicitly or inherently, by Lugthart '414, this limitation is obvious to a person of ordinary skill in the art based on (1) Lugthart '414 alone, (2) the knowledge of a person of ordinary skill in the art; and/or (3) the teachings with respect to this limitation as detailed in the Cover Pleading, this Exhibit, and/or other invalidity claim charts. The motivations to modify or combine may come from, for example, the knowledge of the person of ordinary skill themselves, or from known problems and predictable solutions as embodied in these references, examples of which are discussed in the Cover Pleading or in this Exhibit.
7[b] re-modulating the second inbound data stream,	Lugthart '414 discloses and/or renders obvious this limitation. Lugthart '414 discloses the subject matter of claim limitation 7[b] for the same reasons that Lugthart '414 discloses the subject matter of claim 2. <i>See, e.g.,</i> claim 2. To the extent that this limitation is not disclosed, either explicitly or inherently, by Lugthart '414, this limitation is obvious to a person of ordinary skill in the art based on (1) Lugthart '414 alone, (2) the knowledge of a person of ordinary skill in the art; and/or (3) the teachings with respect to this limitation as detailed in the Cover Pleading, this Exhibit, and/or other invalidity claim charts. The motivations to modify or combine may come from, for example, the knowledge of the person of ordinary skill themselves, or from known problems and predictable solutions as embodied in these references, examples of which are discussed in the Cover Pleading or in this Exhibit.
7[c] said performing clock and data recovery on the first electrical	Lugthart '414 discloses and/or renders obvious this limitation. Lugthart '414 discloses the subject matter of claim limitation 7[c] for the same reasons that Lugthart '414 discloses the subject matter of claim 2. <i>See, e.g.,</i> claim 2.

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Claim 7	Lugthart '414
transit signal, and	To the extent that this limitation is not disclosed, either explicitly or inherently, by Lugthart '414, this limitation is obvious to a person of ordinary skill in the art based on (1) Lugthart '414 alone, (2) the knowledge of a person of ordinary skill in the art; and/or (3) the teachings with respect to this limitation as detailed in the Cover Pleading, this Exhibit, and/or other invalidity claim charts. The motivations to modify or combine may come from, for example, the knowledge of the person of ordinary skill themselves, or from known problems and predictable solutions as embodied in these references, examples of which are discussed in the Cover Pleading or in this Exhibit.
7[d] said performing clock and data recovery on the second electrical input signal,	Lugthart '414 discloses and/or renders obvious this limitation. Lugthart '414 discloses the subject matter of claim limitation 7[d] for the same reasons that Lugthart '414 discloses the subject matter of claim 2. <i>See, e.g.,</i> claim 2. To the extent that this limitation is not disclosed, either explicitly or inherently, by Lugthart '414, this limitation is obvious to a person of ordinary skill in the art based on (1) Lugthart '414 alone, (2) the knowledge of a person of ordinary skill in the art; and/or (3) the teachings with respect to this limitation as detailed in the Cover Pleading, this Exhibit, and/or other invalidity claim charts. The motivations to modify or combine may come from, for example, the knowledge of the person of ordinary skill themselves, or from known problems and predictable solutions as embodied in these references, examples of which are discussed in the Cover Pleading or in this Exhibit.
7[e] each employ fixed, cable-independent, equalization parameters.	Lugthart '414 discloses and/or renders obvious this limitation. Lugthart '414 discloses the subject matter of claim limitation 7[e] for the same reasons that Lugthart '414 discloses the subject matter of claim 2. <i>See, e.g.,</i> claim 2. The language in claim limitation 7[e] resulted from a publication error—it was never in application-claim 11, which issued as claim 7. <i>See, e.g.,</i> U.S. Application No. 16/539,910 at 213 (application-claim 11 in Applicant's last response was "Original"), 232 (Allowance without Examiner's Amendment). The language is grammatical, nonsensical, and unsupported in the specification which never discloses using both "cable-dependent" (examined language) and "cable-independent" equalization parameters

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Claim 7	Lugthart '414
	(unexamined language). Claim 7 should be construed to not include the language of claim limitation 7[e], which was never part of the examined claim. <i>See Novo Indus. v. Micro Molds</i>, 350 F.3d 1348, 1357 (Fed. Cir. 2003) (“A patent claim may be interpreted as if it had been corrected if (1) the correction is not subject to reasonable debate based on consideration of the claim language and the specification and (2) the prosecution history does not suggest a different interpretation.”) (cleaned up); <i>see also Hoffer v. Microsoft</i>, 405 F.3d 1326, 1331 (Fed. Cir. 2005)). To the extent that this limitation is not disclosed, either explicitly or inherently, by Lugthart '414, this limitation is obvious to a person of ordinary skill in the art based on (1) Lugthart '414 alone, (2) the knowledge of a person of ordinary skill in the art; and/or (3) the teachings with respect to this limitation as detailed in the Cover Pleading, this Exhibit, and/or other invalidity claim charts. The motivations to modify or combine may come from, for example, the knowledge of the person of ordinary skill themselves, or from known problems and predictable solutions as embodied in these references, examples of which are discussed in the Cover Pleading or in this Exhibit.

H. DEPENDENT CLAIM 8

Claim 8	Lugthart '414
8. The communication method of claim 7, wherein said cable-dependent equalization parameters are adaptively updated.	Lugthart '414 discloses and/or renders obvious this limitation. The '252 Patent describes three "usage" phases: (1) the cable is tested during a manufacturing-testing phase (8:16-38); (2) after cable installation in the field a training phase is performed during which equalization parameters can be adapted from factory-set values (7:27-47, 8:31-37); and (3) "normal operations" begin after the training phase (7:46-50). While claim 4 refers to "normal usage," claim 3 more broadly recites "during usage" which encompasses adaptation during use of the cable in a training phase. Lugthart '414 discloses training phases during which "parameters of the components in the transceivers connected to the first and second electronic devices are adjusted" including "parameters for the equalizers." <i>See</i> Lugthart '414 at 48:64-49:37. An ordinarily skilled artisan understood that the transceivers "connected to" the host electronic devices are the cable's transceivers. <i>See, e.g., id.</i> at 29:25-30 (cable transceivers are "adaptive" for performing equalization including pre-emphasis) (pre-emphasis means pre-equalization). The recitation in claim 8 of "said cable-dependent equalization parameters" find their antecedent basis in claim 7, which requires their use in "at least one" of two alternative ways. The cable-dependent equalization performed by the FIR 17 and equalizer 21 of Lugthart '414 meet both alternatives. <i>See, e.g., claim 7; Lugthart '414 at 9:14-18, Fig. 1A (below).</i> To the extent Lugthart '414 is considered to not specifically teach adapting the equalization coefficients used by FIR 17 and equalizer 21 during the training phases described by Lugthart '414.

Claim 8	Lugthart '414 The diagram illustrates a transceiver system (10) operating between a Host Side and a Line Side. The system is divided into two main functional blocks: the TX DSP (Transmit Digital Signal Processor) and the RX DSP (Receive Digital Signal Processor). TX Path (Transmit): Host Side: TX DATA enters the system, passing through an EQ (Equalizer) block (11a) and a CDR (Carrier Frequency Offset Correction) block (12a). TX DSP (13): The signal then enters the TX DSP, which contains two parallel processing chains (15a and 15b). Each chain includes an FFE/DFE (Feed Forward Equalization / Decision Feedback Equalization) block, followed by a PCS (Pulse Code Modulation) block, and then an FIR (Finite Impulse Response) filter block. Line Side: The output of the TX DSP is sent to a DAC (Digital-to-Analog Converter) block (14), which produces the TX signal. RX Path (Receive): Line Side: The RX signal enters the system, passing through an EQ (Equalizer) block (21) and a CDR (Carrier Frequency Offset Correction) block (22). RX DSP (23): The signal then enters the RX DSP, which contains two parallel processing chains (27a and 27b). Each chain includes an FFE/DFE (Feed Forward Equalization / Decision Feedback Equalization) block, followed by a PCS (Pulse Code Modulation) block, and then an FIR (Finite Impulse Response) filter block. Host Side: The output of the RX DSP is sent to two DAC (Digital-to-Analog Converter) blocks (24a and 24b), which produce the RX DATA. Arrows indicate the direction of data flow: EGRESS/TRANSMIT (from Host Side to Line Side) and INGRESS/RECEIVE (from Line Side to Host Side). FIG. 1A To the extent that this claim is not disclosed, either explicitly or inherently, by Lugthart '414, this limitation is obvious to a person of ordinary skill in the art based on (1) Lugthart '414 alone, (2) the knowledge of a person of ordinary skill in the art; and/or (3) the teachings with respect to this claim as detailed in the Cover Pleading, this Exhibit, and/or other invalidity claim charts. The motivations to modify or combine may come from, for example, the knowledge of the person of ordinary skill themselves, or from known problems and predictable solutions as embodied in these references, examples of which are discussed in the Cover Pleading or in this Exhibit.
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I. DEPENDENT CLAIM 9

Claim 9	Lugthart '414
9[a] The communication method of claim 7, wherein said cable-dependent equalization parameters are fixed during normal usage, and	Lugthart '414 discloses and/or renders obvious this limitation. The recitation in claim 4 of “said cable-dependent equalization parameters” find its antecedent basis in claim 7 which requires their use in “at least one” of two alternative ways. The cable-dependent equalization performed by the FIR 17 and equalizer 21 of Lugthart '414 separately meet both claim 2 alternatives. <i>See, e.g.,</i> claim 7; Lugthart '414 at 9:14-19, Fig. 1A. To the extent that this limitation is not disclosed, either explicitly or inherently, by Lugthart '414, this limitation is obvious to a person of ordinary skill in the art based on (1) Lugthart '414 alone, (2) the knowledge of a person of ordinary skill in the art; and/or (3) the teachings with respect to this limitation as detailed in the Cover Pleading, this Exhibit, and/or other invalidity claim charts. The motivations to modify or combine may come from, for example, the knowledge of the person of ordinary skill themselves, or from known problems and predictable solutions as embodied in these references, examples of which are discussed in the Cover Pleading or in this Exhibit.
9[b] wherein the method further comprises: determining said cable-dependent equalization parameters during manufacturer-testing of the network cable.	Lugthart '414 discloses and/or renders obvious this limitation. To the extent that this limitation is not disclosed, either explicitly or inherently, by Lugthart '414, this limitation is obvious to a person of ordinary skill in the art based on (1) Lugthart '414 alone, (2) the knowledge of a person of ordinary skill in the art; and/or (3) the teachings with respect to this limitation as detailed in the Cover Pleading, this Exhibit, and/or other invalidity claim charts. The motivations to modify or combine may come from, for example, the knowledge of the person of ordinary skill themselves, or from known problems and predictable solutions as embodied in these references, examples of which are discussed in the Cover Pleading or in this Exhibit.

J. DEPENDENT CLAIM 10

Claim 10	Lugthart '414
10. The communication method of claim 9, wherein the first inbound data stream has a per-lane symbol rate in excess of 50 GBd.	Lugthart '414 discloses and/or renders obvious this limitation. A “lane” is a single data communication path. <i>See, e.g.</i>, IEEE Standard for Ethernet, IEEE 802.3 (2015) Section One at 86. A “symbol” is the smallest unit of data transmission over a medium and depends on the coding system used, and a “symbol rate” is a measure of symbols transferred per second, expressed in baud (“Bd”). <i>See, e.g., id.</i> at 95-96. Data streams with a “per-lane symbol rate in excess of 50 GBd” exceed 50 giga (billion) symbols per second, per lane. The transceivers of Lugthart '414 support multiple lanes for the inbound (TX) and outbound (RX) data streams. <i>See, e.g.</i>, Lugthart '414 at Fig. 1A. CDR processing by each set of equalizer (11a), CDR circuit (12a), and FFE/DFE (15a), as in Figure 1A below, has a data rate up to 300 Gbit/s. <i>See, e.g.</i>, Lugthart '414 at 35:25-39. An ordinarily skilled artisan understood that the other components in the same lane as these components support the same data rate because Lugthart '414 's described data rate for CDR would be meaningless if other components in the same lane only supported a lower data rate. To the extent that this claim is not disclosed, either explicitly or inherently, by Lugthart '414, this limitation is obvious to a person of ordinary skill in the art based on (1) Lugthart '414 alone, (2) the knowledge of a person of ordinary skill in the art; and/or (3) the teachings with respect to this claim as detailed in the Cover Pleading, this Exhibit, and/or other invalidity claim charts. The motivations to modify or combine may come from, for example, the knowledge of the person of ordinary skill themselves, or from known problems and predictable solutions as embodied in these references, examples of which are discussed in the Cover Pleading or in this Exhibit.

K. INDEPENDENT CLAIM 11

Claim 11	Lugthart '414
11[pre] A cable manufacturing method that comprises:	To the extent the preamble is limiting, Lugthart '414 discloses and/or renders obvious the preamble. To the extent that this preamble is not disclosed, either explicitly or inherently, by Lugthart '414, this preamble is obvious to a person of ordinary skill in the art based on (1) Lugthart '414 alone, (2) the knowledge of a person of ordinary skill in the art; and/or (3) the teachings with respect to this preamble as detailed in the Cover Pleading, this Exhibit, and/or other invalidity claim charts. The motivations to modify or combine may come from, for example, the knowledge of the person of ordinary skill themselves, or from known problems and predictable solutions as embodied in these references, examples of which are discussed in the Cover Pleading or in this Exhibit.
11[a] connecting a first end and a second end of a set of conductor pairs to a first transceiver and a second transceiver, respectively, to transport a first electrical transit signal from the first transceiver to the second transceiver and a second electrical transit signal from the second transceiver to the first transceiver;	Lugthart '414 discloses and/or renders obvious this limitation. Claim limitation 11[a] recites connecting first and second ends of conductor pairs to first and second transceivers to transmit signals therebetween. In Lugthart '414, pairs of conductors, connected between transceiver assemblies 105a/105b and their transceivers 107a/107b, transmit signals between the transceivers. <i>See, e.g.,</i> claim 1 (1[pre], 1[a]-1[c]), (claim 6 (6[pre], 6[c], 6[f], 6[g], 6[i])). An ordinarily skilled artisan understood that manufacturing Lugthart '414 cable involves “connecting” the conductors to the transceivers so the transceivers can transmit and receive signals over the conductors. <i>See, e.g.,</i> U.S. Patent App. Pub. No. 2020/0194911 at [0065], [0073]-[0075] (cable assembly involves connecting transceivers and cable conductors via contact/solder pads), Figs. 4A-4B, 6A-7; U.S. Patent App. Pub. No. 2010/0210142 at [0050], [0057], and Figs. 1-3 and 7. Alternatively, that would have been the conventional and obvious way to manufacture the Lugthart '414 cable with a reasonable expectation of success. To the extent that this limitation is not disclosed, either explicitly or inherently, by Lugthart '414, this preamble is obvious to a person of ordinary skill in the art based on (1) Lugthart '414 alone, (2) the knowledge of a person of ordinary skill in the art; and/or (3) the teachings with respect to this limitation as detailed in the Cover Pleading, this Exhibit, and/or other invalidity claim charts. The motivations to modify or combine may come from, for example, the knowledge of the person of ordinary skill

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Claim 11	Lugthart '414
	themselves, or from known problems and predictable solutions as embodied in these references, examples of which are discussed in the Cover Pleading or in this Exhibit.
11[b] packaging the first transceiver into a first connector configured to couple a first electrical input signal from a network interface port of a first host device to the first transceiver and a first electrical output signal from the first transceiver to the network interface port of the first host device; and	Lugthart '414 discloses and/or renders obvious this limitation. Lugthart '414 discloses transceiver assemblies 105a/105b, which have first and second connectors and into which first and second transceivers 107a/107b are packaged, and assemblies 105a/105b are configured to couple to input/output signals from/to network interface ports of first and second host devices. <i>See, e.g.</i>, claim 1 (1[b], 1[c]); Lugthart '414 at 15:30-57 (assemblies 105a/105b “include” transceivers 107a/107b and use “enclosed” packaging conforming to interface standards such as SFP+); SFF-8642 Specification for MINI MULTILANE SERIES: SHIELDED INTEGRATED CONNECTOR, Rev 2.7, SFF Committee, February 26, 2010, 7-10 (SFP+ housing “contains” transceiver); <i>see also</i> U.S. Patent App. Pub. No. 2010/0210142 at [0050]-[0051], Figs. 1-3. To the extent that this limitation is not disclosed, either explicitly or inherently, by Lugthart '414, this limitation is obvious to a person of ordinary skill in the art based on (1) Lugthart '414 alone, (2) the knowledge of a person of ordinary skill in the art; and/or (3) the teachings with respect to this limitation as detailed in the Cover Pleading, this Exhibit, and/or other invalidity claim charts. The motivations to modify or combine may come from, for example, the knowledge of the person of ordinary skill themselves, or from known problems and predictable solutions as embodied in these references, examples of which are discussed in the Cover Pleading or in this Exhibit.
11[c] packaging the second transceiver into a second connector configured to couple a second electrical input signal from a network interface port of a second host device to the second transceiver and a second	Lugthart '414 discloses and/or renders obvious this limitation. Lugthart '414 discloses transceiver assemblies 105a/105b, which have first and second connectors and into which first and second transceivers 107a/107b are packaged, and assemblies 105a/105b are configured to couple to input/output signals from/to network interface ports of first and second host devices. <i>See, e.g.</i>, claim 1 (1[b], 1[c]); Lugthart '414 at 15:30-57 (assemblies 105a/105b “include” transceivers 107a/107b and use “enclosed” packaging conforming to interface standards such as SFP+); SFF-8642 Specification for MINI MULTILANE SERIES: SHIELDED INTEGRATED CONNECTOR, Rev 2.7, SFF Committee, February 26, 2010, 7-10 (SFP+ housing “contains” transceiver); <i>see also</i> U.S. Patent App.

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Claim 11	Lugthart '414
electrical output signal from the second transceiver to the network interface port of the second host device,	Pub. No. 2010/0210142 at [0050]-[0051], Figs. 1-3. To the extent that this limitation is not disclosed, either explicitly or inherently, by Lugthart '414, this limitation is obvious to a person of ordinary skill in the art based on (1) Lugthart '414 alone, (2) the knowledge of a person of ordinary skill in the art; and/or (3) the teachings with respect to this limitation as detailed in the Cover Pleading, this Exhibit, and/or other invalidity claim charts. The motivations to modify or combine may come from, for example, the knowledge of the person of ordinary skill themselves, or from known problems and predictable solutions as embodied in these references, examples of which are discussed in the Cover Pleading or in this Exhibit.
11[d] the first and second transceivers being configured to perform clock and data recovery on the first and second electrical input signal to extract and re-modulate the first and second inbound data streams respectively as the first and second electrical transit signals conveying first and second transit data streams,	Lugthart '414 discloses and/or renders obvious this limitation. Lugthart '414 discloses that the first and second transceivers are configured to perform CDR on the signals received over the conductors to re-modulate the data streams as their respective outbound data streams, as disclosed in claim limitation 1[d]. <i>See, e.g.,</i> claim limitation 1[d]. Lugthart '414 discloses that the first and second transceivers are configured to perform CDR to extract and remodulate their respective inbound data stream as signals conveyed across the conductors, as disclosed in claim limitation 1[c]. <i>See, e.g.,</i> claim limitation 1[c]. Lugthart '414 discloses that the first and second transceivers employ fixed, cable-independent, equalization parameters for the CDR operations, as disclosed in claim limitation 1[c]. <i>See, e.g.,</i> claim limitation 1[c]. To the extent that this limitation is not disclosed, either explicitly or inherently, by Lugthart '414, this limitation is obvious to a person of ordinary skill in the art based on (1) Lugthart '414 alone, (2) the knowledge of a person of ordinary skill in the art; and/or (3) the teachings with respect to this limitation as detailed in the Cover Pleading, this Exhibit, and/or other invalidity claim charts. The motivations to modify or combine may come from, for example, the knowledge of the person of ordinary skill themselves, or from known problems and predictable solutions as embodied in these references, examples of which are discussed in the Cover Pleading or in this Exhibit.

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Claim 11	Lugthart '414
11[e] configured to perform clock and data recovery on the second and first electrical transit signals to extract and re-modulate the second and first transit data streams as first and second outbound data streams conveyed by the first and second electrical output signals from the cable, and	Lugthart '414 discloses and/or renders obvious this limitation. Lugthart '414 discloses that the first and second transceivers are configured to perform CDR on the signals received over the conductors to re-modulate the data streams as their respective outbound data streams, as disclosed in claim limitation 1[d]. <i>See, e.g.,</i> claim limitation 1[d]. Lugthart '414 discloses that the first and second transceivers are configured to perform CDR to extract and remodulate their respective inbound data stream as signals conveyed across the conductors, as disclosed in claim limitation 1[c]. <i>See, e.g.,</i> claim limitation 1[c]. Lugthart '414 discloses that the first and second transceivers employ fixed, cable-independent, equalization parameters for the CDR operations, as disclosed in claim limitation 1[e]. <i>See, e.g.,</i> claim limitation 1[e]. To the extent that this limitation is not disclosed, either explicitly or inherently, by Lugthart '414, this preamble is obvious to a person of ordinary skill in the art based on (1) Lugthart '414 alone, (2) the knowledge of a person of ordinary skill in the art; and/or (3) the teachings with respect to this limitation as detailed in the Cover Pleading, this Exhibit, and/or other invalidity claim charts. The motivations to modify or combine may come from, for example, the knowledge of the person of ordinary skill themselves, or from known problems and predictable solutions as embodied in these references, examples of which are discussed in the Cover Pleading or in this Exhibit.
11[f] each configured to employ fixed, cable-independent, equalization parameters for clock and data recovery on the respective electrical input signals and for generating the respective electrical output signals.	Lugthart '414 discloses and/or renders obvious this limitation. Lugthart '414 discloses that the first and second transceivers employ fixed, cable-independent, equalization parameters for the CDR operations, as disclosed in claim limitation 1[e]. <i>See, e.g.,</i> claim limitation 1[e]. To the extent that this limitation is not disclosed, either explicitly or inherently, by Lugthart '414, this limitation is obvious to a person of ordinary skill in the art based on (1) Lugthart '414 alone, (2) the knowledge of a person of ordinary skill in the art; and/or (3) the teachings with respect to this limitation as detailed in the Cover Pleading, this Exhibit, and/or other invalidity claim charts. The motivations to modify or combine may come from, for example, the knowledge of the person of ordinary skill

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Claim 11	Lugthart '414
	themselves, or from known problems and predictable solutions as embodied in these references, examples of which are discussed in the Cover Pleading or in this Exhibit.

L. DEPENDENT CLAIM 12

Claim 12	Lugthart '414
12[a] The cable manufacturing method of claim 11, wherein the first and second transceivers are each configured to employ cable-dependent equalization parameters for generating the first and second electrical transit signals and	Lugthart '414 discloses and/or renders obvious this limitation. Lugthart '414 discloses the subject matter of claim limitation 12[a] for the same reasons that Lugthart '414 discloses the subject matter of claim limitation 2[a]. <i>See, e.g.,</i> claim 2. To the extent that this limitation is not disclosed, either explicitly or inherently, by Lugthart '414, this limitation is obvious to a person of ordinary skill in the art based on (1) Lugthart '414 alone, (2) the knowledge of a person of ordinary skill in the art; and/or (3) the teachings with respect to this limitation as detailed in the Cover Pleading, this Exhibit, and/or other invalidity claim charts. The motivations to modify or combine may come from, for example, the knowledge of the person of ordinary skill themselves, or from known problems and predictable solutions as embodied in these references, examples of which are discussed in the Cover Pleading or in this Exhibit.
12[b] for clock and data recovery on the second and first electrical transit signals.	Lugthart '414 discloses and/or renders obvious this limitation. Lugthart '414 discloses the subject matter of claim limitation 12[b] for the same reasons that Lugthart '414 discloses the subject matter of claim limitation 2[b]. <i>See, e.g.,</i> claim 2. To the extent that this limitation is not disclosed, either explicitly or inherently, by Lugthart '414, this limitation is obvious to a person of ordinary skill in the art based on (1) Lugthart '414 alone, (2) the knowledge of a person of ordinary skill in the art; and/or (3) the teachings with respect to this limitation as detailed in the Cover Pleading, this Exhibit, and/or other invalidity claim charts. The motivations to modify or combine may come from, for example, the knowledge of the person of ordinary skill themselves, or from known problems and predictable solutions as embodied in these references, examples of which are discussed in the Cover Pleading or in this Exhibit.

M. DEPENDENT CLAIM 13

Claim 13	Lugthart '414
13. The cable manufacturing method of claim 12, wherein the first and second transceivers are each configured to adapt the cable-dependent equalization parameters during operation.	Lugthart '414 discloses and/or renders obvious this limitation. Lugthart '414 discloses the subject matter of claim 13 for the same reasons that Lugthart '414 discloses the subject matter of claim 3. <i>See, e.g.</i>, claim 3. Although claim 3 recites the term “usage,” “operation” in claim 13 has the same meaning. To the extent that this claim is not disclosed, either explicitly or inherently, by Lugthart '414, this limitation is obvious to a person of ordinary skill in the art based on (1) Lugthart '414 alone, (2) the knowledge of a person of ordinary skill in the art; and/or (3) the teachings with respect to this claim as detailed in the Cover Pleading, this Exhibit, and/or other invalidity claim charts. The motivations to modify or combine may come from, for example, the knowledge of the person of ordinary skill themselves, or from known problems and predictable solutions as embodied in these references, examples of which are discussed in the Cover Pleading or in this Exhibit.

N. DEPENDENT CLAIM 14

Claim 14	Lugthart '414
14[a] The cable manufacturing method of claim 12, wherein the first and second transceivers are each configured to use preset cable-dependent equalization parameters during operation, and	Lugthart '414 discloses and/or renders obvious this limitation. Lugthart '414 discloses the subject matter of claim limitation 14[a] for the same reasons that Lugthart '414 discloses the subject matter of claim limitation 4[a]. <i>See, e.g.,</i> claim 4. To the extent that this limitation is not disclosed, either explicitly or inherently, by Lugthart '414, this limitation is obvious to a person of ordinary skill in the art based on (1) Lugthart '414 alone, (2) the knowledge of a person of ordinary skill in the art; and/or (3) the teachings with respect to this limitation as detailed in the Cover Pleading, this Exhibit, and/or other invalidity claim charts. The motivations to modify or combine may come from, for example, the knowledge of the person of ordinary skill themselves, or from known problems and predictable solutions as embodied in these references, examples of which are discussed in the Cover Pleading or in this Exhibit.
14[b] wherein the method further comprises: testing an assembled cable to determine the cable-dependent equalization parameters.	Lugthart '414 discloses and/or renders obvious this limitation. Lugthart '414 discloses the subject matter of claim limitation 14[b] for the same reasons that Lugthart '414 discloses the subject matter of claim limitation 4[b]. <i>See, e.g.,</i> claim 4. To the extent that this limitation is not disclosed, either explicitly or inherently, by Lugthart '414, this limitation is obvious to a person of ordinary skill in the art based on (1) Lugthart '414 alone, (2) the knowledge of a person of ordinary skill in the art; and/or (3) the teachings with respect to this limitation as detailed in the Cover Pleading, this Exhibit, and/or other invalidity claim charts. The motivations to modify or combine may come from, for example, the knowledge of the person of ordinary skill themselves, or from known problems and predictable solutions as embodied in these references, examples of which are discussed in the Cover Pleading or in this Exhibit.