P802.3ch D3.0  D3.0 Physical Layer Specifications and Management Parameters for 2.5 Gb/s, 5 Gb/s, and 10 Gb/s Auto

Cl 0  SC 0  P  L  #  -1
Berger, Catherine
Comment Type  G  Comment Status  X
This draft meets all editorial requirements.
SuggestedRemedy
Proposed Response  Response Status  O

Cl 149  SC 149.8.2.2  P 175  L 45  #  -2
Mueller, Thomas
Comment Type  T  Comment Status  X
The intention of subclause 149.8.2.2 was to provide a measurement setup and electrical requirements for a proper shield termination of the linksegment to the MDI. As for today, there is not enough experience / data for a solid description of this test. Suggestion would be to leave this question to the implementer for now.
SuggestedRemedy
Suggest to remove subclause 149.8.2.2 from the standard due to a lack of information.
Proposed Response  Response Status  O

Cl 149  SC 149.3.6.1  P 112  L 3  #  -5
Wienckowski, Natalie  General Motors Company
Comment Type  E  Comment Status  X
Consider replacing "maximize" per IEEE Mandatory Editorial Coordination comment. Note: This is part of the "common" wording used throughout 802.3. See 97.3.5.1, 113.3.5.1, 126.3.5.1, etc. The reasons for synchronizing refresh intervals is not required for the spec.
SuggestedRemedy
Delete: To maximize power savings, maintain link integrity, and ensure interoperability.
Proposed Response  Response Status  O

Cl 149  SC 149.3.6.1  P 22  L 16  #  -3
Wienckowski, Natalie  General Motors Company
Comment Type  E  Comment Status  X
According to the SA Editors, the "IMPORTANT NOTICE" is not needed and can be deleted.
SuggestedRemedy
Delete lines 16 through 27.
Proposed Response  Response Status  O
Consider replacing "maximize" per IEEE Mandatory Editorial Coordination comment. Note: This is part of the "common" wording used throughout 802.3. See 97.3.5.3, 113.3.5.3, 126.3.5.3, etc. The reasons for staggering refresh signals is not required for the spec.

**Suggested Remedy**

Change: refresh signaling to maximize power savings. To: refresh signaling.

**Comment Status** X

**Response Status** O

Wienckowski, Natalie General Motors Company

---

Consider replacing "ensure" per IEEE Mandatory Editorial Coordination comment. Note: This is the same wording as 97.3.8.2.7.

**Suggested Remedy**

Change: The toggle bit is used to ensure proper OAM message synchronization between the PHY and the link partner. To: The toggle bit lets the management entity determine which OAM message is being referred to.

**Comment Status** X

**Response Status** O

Wienckowski, Natalie General Motors Company

---

Consider replacing "guarantees" per IEEE Mandatory Editorial Coordination comment. Note: This wording is the same as 97.4.2.4.6.

**Suggested Remedy**

Change: This value of DataSwPFC24 guarantees that the switch from PAM2 to PAM4 occurs on a PHY frame boundary. To: When the value of DataSwPFC24 is a multiple of 16 the switch from PAM2 to PAM4 occurs on a PHY frame boundary.

**Comment Status** X

**Response Status** O

Wienckowski, Natalie General Motors Company
Wienckowski, Natalie  
General Motors Company

Comment Type: E  
Comment Status: X

Consider replacing "ensure" per IEEE recommendation.

Suggested Remedy

Change: To ensure the total alien FEXT coupled into a link segment, multiple disturber attenuation to crosstalk ratio far-end ACRF is specified as the power sum of the individual alien ACRF disturbers. To: Multiple disturber attenuation to crosstalk ratio far-end ACRF is specified as the power sum of the individual alien ACRF disturbers to limit the total alien FEXT coupled into a link segment.

Proposed Response  
Response Status: O

Wienckowski, Natalie  
General Motors Company

Comment Type: E  
Comment Status: X

Consider replacing "ensure" per IEEE recommendation. It is not required to explain why this requirement exists.

Suggested Remedy

Change: Infofield shall be transmitted at least 256 times with each change to octets 7-10 to ensure detection at link partner. To: Infofield shall be transmitted at least 256 times with each change to octets 7-10.

Proposed Response  
Response Status: O

Wienckowski, Natalie  
General Motors Company

Comment Type: E  
Comment Status: X

missing period

Suggested Remedy

Add "." at end of paragraph.

Proposed Response  
Response Status: O

Wienckowski, Natalie  
General Motors Company

Comment Type: E  
Comment Status: X

Update PICS to match requirement text.

Suggested Remedy

Delete: to ensure detection at link partner

Proposed Response  
Response Status: O

Update publication date for 802.3cg

Wienckowski, Natalie  
General Motors Company

Comment Type: E  
Comment Status: X

Update publication date for 802.3cg

Suggested Remedy

P802.3ch D3.0 Physical Layer Specifications and Management Parameters for 2.5 Gb/s, 5 Gb/s, and 10 Gb/s Auto

Cl 0 SC 0 P1 L28 # i-18
Wienckowski, Natalie General Motors Company
Comment Type E Comment Status X
Update publication date for 802.3cn
SuggestedRemedy
Change 20xx (or 201x) to 2019, also on P10 L49
Proposed Response Response Status O

Cl 149 SC 149.3.6.1 P112 L12 # i-19
Wienckowski, Natalie General Motors Company
Comment Type E Comment Status X
Consider rewording to remove "ensures".
SuggestedRemedy
Change: This offset ensures that the MASTER and SLAVE ALERT windows are offset from each other and that the refresh periods are close to half cycle offset. To: The MASTER and SLAVE ALERT windows are offset from each other and the refresh periods are close to half cycle offset.
Proposed Response Response Status O

Cl 149 SC 149.3.6 P110 L30 # i-20
Wienckowski, Natalie General Motors Company
Comment Type E Comment Status X
Consider rewording to remove "ensure". Remove unnecessary explanatory language.
SuggestedRemedy
Delete: that is used to ensure refresh signals and alert start times are appropriately offset between the link partners
Proposed Response Response Status O

Cl 149 SC 149.3.7.2.1 P113 L42 # i-24
Wienckowski, Natalie General Motors Company
Comment Type E Comment Status X
LP_BLOCK_R is not consistent with other comment names.
SuggestedRemedy
Change "LP_BLOCK_R" to "LPBLOCK_R" to be consistent with other comment names.
Also make the same change on P125 L7.
Proposed Response Response Status O
D3.0 Physical Layer Specifications and Management Parameters for 2.5 Gb/s, 5 Gb/s, and 10 Gb/s Auto

### Comment 1-25

**Comment Type:** E  
**Comment Status:** X  
**Comment:** I_BLOCK_R is not consistent with other comment names.  
**Suggested Remedy:** Change "I_BLOCK_R" to "IBLOCK_R" to be consistent with other comment names. Also make the same change on P125 L14.

**Proposed Response:**

**Response Status:** O

### Comment 1-26

**Comment Type:** E  
**Comment Status:** X  
**Comment:** The use of "0s" is not consistent with other 802.3 Clauses.  
**Suggested Remedy:** Change "0s" to "0's". Also make the same change on P129 L27 and P185 L20.

**Proposed Response:**

**Response Status:** O

### Comment 1-27

**Comment Type:** T  
**Comment Status:** X  
**Comment:** There is an untestable shall.  
**Suggested Remedy:** Delete: All equipment subject to this clause shall conform to IEC 62368-1 (or IEC 60950-1) (for IT and motor vehicle applications) and to ISO 26262 (for motor vehicle applications only, if required by the given application). Also delete PICS ES1.

**Proposed Response:**

**Response Status:** O

### Comment 1-28

**Comment Type:** T  
**Comment Status:** X  
**Comment:** There is an untestable shall which applies to the final installation, not the PHY defined by this draft.  
**Suggested Remedy:** Delete: In automotive applications, all cabling shall be routed in such a way as to provide maximum protection by the motor vehicle sheet metal and structural components, following SAE J1292, ISO 14229, and ISO 15764. Also delete PICS ES2.

**Proposed Response:**

**Response Status:** O

### Comment 1-29

**Comment Type:** T  
**Comment Status:** X  
**Comment:** There is an untestable shall.  
**Suggested Remedy:** Delete: All equipment subject to this clause shall conform to IEC 62368-1 (or IEC 60950-1) (for IT and motor vehicle applications) and to ISO 26262 (for motor vehicle applications only, if required by the given application). Also delete PICS ES1.

**Proposed Response:**

**Response Status:** O

### Comment 1-30

**Comment Type:** E  
**Comment Status:** X  
**Comment:** typo, unnecessary "the"  
**Suggested Remedy:** Change "when the EEE is implemented" To "when EEE is implemented".

**Proposed Response:**

**Response Status:** O
D3.0 Physical Layer Specifications and Management Parameters for 2.5 Gb/s, 5 Gb/s, and 10 Gb/s Auto

Wienckowski, Natalie
General Motors Company

Comment Type: E  Comment Status: X

Suggested Remedy:
Add space after "is occurring concurrently and bi-directionally."

Proposed Response: Response Status: O

---

Wienckowski, Natalie
General Motors Company

Comment Type: T  Comment Status: X

Suggested Remedy:
delete the reference to state diagram notation as this is done in 149.1.6 for the Clause.

Proposed Response: Response Status: O

---

Wienckowski, Natalie
General Motors Company

Comment Type: T  Comment Status: X

Suggested Remedy:
delete "The notation used in the state diagrams follows the conventions of state diagrams as described in 21.5."

Proposed Response: Response Status: O

---

Wienckowski, Natalie
General Motors Company

Comment Type: E  Comment Status: X

Suggested Remedy:
Inconsistency in document. Sometimes "false" and sometimes "FALSE".

Proposed Response: Response Status: O

---

Wienckowski, Natalie
General Motors Company

Comment Type: E  Comment Status: X

Suggested Remedy:
Inconsistency in document. Sometimes "true" and sometimes "TRUE".

Proposed Response: Response Status: O

---
Cl 149 SC 149.4.2.3 P144 L49 # i-37
Wienckowski, Natalie General Motors Company

Comment Type E Comment Status X
missing article

SuggestedRemedy
Change "over receive pair" To "over the receive pair".

Proposed Response Response Status O

Cl 149 SC 149.4.2.4 P145 L21 # i-38
Wienckowski, Natalie General Motors Company

Comment Type E Comment Status X
The Figure is the state diagram, not a description of a state diagram.

SuggestedRemedy
Change "PHY Control shall comply with the state diagram description given in Figure 149-32." To "PHY Control shall comply with the state diagram in Figure 149-32."

Proposed Response Response Status O

Cl 149 SC 149.4.2.4 P145 L26 # i-39
Wienckowski, Natalie General Motors Company

Comment Type E Comment Status X
Redundant text

SuggestedRemedy
Change "16th partial PHY frame (bits 6750 to 6845) of the PHY frame." To "16th partial PHY frame (bits 6750 to 6845)."

Proposed Response Response Status O

Cl 149 SC 149.5.1 P152 L45 # i-40
Wienckowski, Natalie General Motors Company

Comment Type E Comment Status X
Missing spaces

SuggestedRemedy
Add non-breaking spaces around +/- symbol, also on P152 L49.

Proposed Response Response Status O

Cl 149 SC 149.5.1 P160 L8 # i-41
Wienckowski, Natalie General Motors Company

Comment Type E Comment Status X
Redundant word

SuggestedRemedy
Change "BER testing" to "BER".

Proposed Response Response Status O

Cl 149 SC 149.5.1 P161 L12 # i-42
Wienckowski, Natalie General Motors Company

Comment Type E Comment Status X
missing article

SuggestedRemedy
Change "Instead of encoding received data from MAC," To "Instead of encoding received data from the MAC,"

Proposed Response Response Status O

Cl 149 SC 149.5.1 P161 L12 # i-43
Wienckowski, Natalie General Motors Company

Comment Type E Comment Status X
poor wording

SuggestedRemedy
Change "In the receive side" To "On the receive side".

Proposed Response Response Status O
### D3.0 Physical Layer Specifications and Management Parameters for 2.5 Gb/s, 5 Gb/s, and 10 Gb/s Auto

<table>
<thead>
<tr>
<th>Comment ID</th>
<th>SC</th>
<th>Page</th>
<th>Line</th>
<th>Comment Type</th>
<th>Comment Status</th>
<th>SuggestedRemedy</th>
<th>Proposed Response</th>
<th>Response Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>i-44</td>
<td>149</td>
<td>161</td>
<td>14</td>
<td>E</td>
<td>X</td>
<td>Change &quot;calculated in RS-FEC block error rate.&quot; To &quot;calculated in the RS-FEC block error rate.&quot;</td>
<td>Response Status O</td>
<td></td>
</tr>
<tr>
<td>i-45</td>
<td>149A</td>
<td>162</td>
<td>50</td>
<td>E</td>
<td>X</td>
<td>Change &quot;10GBASE-T1, 36 dB in 5GBASE-T1 and 35 dB in 2.5G mode&quot; To &quot;10GBASE-T1, 36 dB in 5GBASE-T1, and 35 dB in 2.5G mode&quot;</td>
<td>Response Status O</td>
<td></td>
</tr>
<tr>
<td>i-46</td>
<td>45</td>
<td>40</td>
<td>36</td>
<td>GR</td>
<td>X</td>
<td>using the term &quot;both&quot; appears verbose in nearly 20 instances.</td>
<td>Remove the work &quot;both&quot;</td>
<td>Response Status O</td>
</tr>
<tr>
<td>i-47</td>
<td>149A</td>
<td>197</td>
<td>27</td>
<td>T</td>
<td>X</td>
<td>To make Figure 149A-2 more descriptive.</td>
<td>As per attached PDF; Propose to change Figure 149A-2 as follows; From the VNA Diff. Port 1 both these lines are to be coax. Therefore; The lines are made to be thicker to match the width of coax line from as from Port 2; Add that the text to each line from Diff. Port 1 of &quot;Coax&quot;; Add lines that show that each of the Coax shields from Diff. Port 1 connects to the shield of connector on the test fixture; Show an exploded view that inner tube is connected to cable shield inside triaxial tube; Include the text next to this exploded view.</td>
<td>Response Status O</td>
</tr>
<tr>
<td>i-48</td>
<td>149A</td>
<td>198</td>
<td>10</td>
<td>T</td>
<td>X</td>
<td>Propose to add verbiage to the shield connection of the cable on both ends to assist user with proper understanding of implementing into vehicle.</td>
<td>Add the following to sentences at the end of paragraph that starts on line 6. In addition, both ends of the cable shield should be directly connected to the signal ground using techniques suitable for RF applications in the frequency range of interest when implementing cable assemblies into vehicles. This is necessary so that the vehicle implementation matches the coupling and screening attenuation test methodology in this Annex.</td>
<td>Response Status O</td>
</tr>
</tbody>
</table>
Equation 149-25 draws this required line based on the measurement results when all the cables configured around are composed of STP cables in the 4 around 1 measurement. Therefore, I think it is necessary to include a comment that clearly states that all the cables that are configured around are STP cables. This is because it is assumed that it is difficult to satisfy this requirement when the surrounding cables are composed of cables such as J-UTP cable and UTP cable.

Suggested Remedy
After Equation 149-25, please add as follows. However, this equation is for the case where the surrounding cables are composed of STP cables.

—

Equation 149-26 draws this required line based on the measurement results when all the cables configured around are composed of STP cables in the 4 around 1 measurement. Therefore, I think it is necessary to include a comment that clearly states that all the cables that are configured around are STP cables. This is because it is assumed that it is difficult to satisfy this requirement when the surrounding cables are composed of cables such as J-UTP cable and UTP cable.

Suggested Remedy
After Equation 149-26, please add as follows. However, this equation is for the case where the surrounding cables are composed of STP cables.
The transmitted order of the codeword symbol can be made more explicit. Page 102 line 30 state bit 0 is transmitted first. From Page 102 line 6 m*i,0* can be inferred as bit 0 but this is not explicitly stated. Page 100 line 29 adds to the confusion that states the leftmost element is the LSB and we have m*i,9* being the leftmost element.

**Suggested Remedy**

Add the following for more clarity. Page 102 line 7 after the end of "finite field." add:  "m*i,0* is the first bit transmitted." Add the following to make things complete. Copy first sentence in page 102 line 6 to page 102 line 22 except replace "message" with "parity" and "m", with "p", add:  "p*i,0* is the first bit transmitted."

**Comment Status** X

**Response Status** O

---

IEEE Std 802.3cg-201x has been approved as IEEE Std 802.3cg-2019

**Suggested Remedy**

change 802.3cg-201x to 802.3cg-2019 on P23 L45, and globally (several instances - pages 26, 33, 34, 35, 53,55,58, 66, 67,68, 69, 195 - some more than 1 per page)

**Comment Status** X

**Response Status** O

---

149.3.2.2.18 doesn't describe Reed Solomon interleaving, it describes the PCS Scrambler.

The correct reference is 149.3.2.2.15. The same issue exists in 45.2.1.195.1 page 39 line 38.

**Suggested Remedy**

Change cross reference from 149.3.2.2.18 to 149.3.2.2.15 (or appropriate link if renumbered) in both 45.2.1.194.1 and 45.2.1.195.1

**Comment Status** X

**Response Status** O
P802.3ch D3.0

D3.0 Physical Layer Specifications and Management Parameters for 2.5 Gb/s, 5 Gb/s, and 10 Gb/s Auto

Cl 45 SC 45.2.9.3 P53 L44 #58
Zimmerman, George
ADI, APL Group, Aquantia, BMW, Cisco, CommScop
Comment Type E Comment Status X
Editing instruction has been separated from the table that it is editing.
Suggested Remedy
Make editing instruction stay with Table 45-341
Proposed Response Response Status O

Cl 104 SC 104.5.6.4 P68 L48 #59
Zimmerman, George
ADI, APL Group, Aquantia, BMW, Cisco, CommScop
Comment Type E Comment Status X
Clause 97 is in the draft, but is shown as an external cross reference. It should be an active cross reference.
Suggested Remedy
Change external "Clause 97" reference to an active cross reference
Proposed Response Response Status O

Cl 149C SC 149C.5 P212 L6 #60
Zimmerman, George
ADI, APL Group, Aquantia, BMW, Cisco, CommScop
Comment Type T Comment Status X
In multiport designs, there is confusion as to whether port-to-port crosstalk in the MDI or on the board are governed by the "coupling between link segments" (alien crosstalk) specified in the main clause. They are not. MDI to MDI coupling or trace to trace coupling are in addition. In general, they should be less than or equal to the alien crosstalk specification.
Suggested Remedy
Insert 149.C.5 after 149C.4.3, entitled: Coupling between ports on multiport designs, with text: "When multiple MultiGBASE-T1 PHYs are implemented on the same board, care should be taken to avoid coupling between ports. The coupling between adjacent ports on a multiport MDI connector or between adjacent traces is recommended to be approximately the same level, but no greater, than that specified for power sum alien near end crosstalk specified in Equation 149-25." Additionally, add a second paragraph to 149.7.2, page 172 line 42, to read "For implementations with multiple MultiGBASE-T1 ports on the same MDI connector assembly, coupling between ports on the MDI connector is not considered to be part of the PSANEXT and PSAFEXT specification. For further information, see 149.C.5."
Proposed Response Response Status O

Cl 149 SC 149.1.3 P79 L18 #61
Zimmerman, George
ADI, APL Group, Aquantia, BMW, Cisco, CommScop
Comment Type E Comment Status X
"The MultiGBASE-T1 OAM information is exchanged between two 2.5GBASE-T1, 5GBASE-T1, or 10GBASE-T1 PHYs out-of-band." - the concept of whether this is out-of-band in the frequency domain or does not consume the bit rate for the ethernet payload has caused repeated confusion - some improved wording here might help.
Suggested Remedy
Suggest change "out-of-band." to "out-of-band, that is, outside of the specified 2.5, 5, or 10 Gb/s Ethernet data stream."
Proposed Response Response Status O

Cl 149 SC 149.1.3.1 P79 L44 #62
Zimmerman, George
ADI, APL Group, Aquantia, BMW, Cisco, CommScop
Comment Type E Comment Status X
"(The duration of the superframe is L x 320/ S ns.)" has no need to be a parenthetical phrase - this seems to have been left over from previous wording where the sentence structure was more complex. It is now its own stand-alone sentence.
Suggested Remedy
Remove the parentheses around "The duration of the superframe is L x 320 / S ns."
Proposed Response Response Status O

Cl 149 SC 149.1.3.2 P80 L17 #63
Zimmerman, George
ADI, APL Group, Aquantia, BMW, Cisco, CommScop
Comment Type T Comment Status X
"The minimum link segment characteristics, EMC requirements, and test modes are specified in 149.5." - the link segment characteristics are specified in 149.7, not 149.5, and there are no EMC requirements in this document. Further, this subclause is supposed to be describing the PMA, not the other things.
Suggested Remedy
Suggest replacing "The minimum link segment characteristics, EMC requirements, and test modes are specified in 149.5." with "The electrical parameters of the PMA, i.e., test modes, and electrical specifications for the transmitter and receiver, are specified in 149.5."
Proposed Response Response Status O
It appears that TX_WN may need a recirculating function if it is supposed to wait until tx_lpi_active is false before exiting, and continuously re-evaluate the condition tx_alert_start_next. State diagrams only evaluate the condition on entry to a state. Otherwise, if tx_alert_start_next were false on entry, TX_WN would enter, set tx_coded to IBLOCK_T and exit with tx_lpi_req possibly still in the true state (for example, if LPI is being exited due to a low SNR message). According to Figure 149-20, tx_lpi_active is set FALSE in TX_NORMAL and TRUE in SEND_SLEEP, which can only be exited by tx_lpi_req going to false.

Suggested Remedy
Suggest: change the exit condition to exit "C" to add an "* (tx_lpi_req = FALSE)" to the existing condition, and add an additional exit to TX_WN, re-entering tx_WN with the condition tx_lpi_req = FALSE.

Suggested Remedy
DECODE (rx_symb<64:0>) - the text says that the argument is rx_coded<64:0>. rx_symb is what is passed by the PMA_UNITDATA indication, before the descrambler, blocking and RS-FEC decoder (see 149.3.2.3). rx_coded is what seems to be needed by this function according to the description.

Suggested Remedy
Change DECODE (rx_symb<64:0>) to DECODE(rx_coded<64:0>.)

Suggested Remedy
ordered set in the subclause header should be capitalized

Suggested Remedy
change "ordered set" to "Ordered set"

Suggested Remedy
"super frame" - in most places, the term is "superframe" without a space.

Suggested Remedy
replace "super frame" with "superframe" at P128 L37, L46, L51, L53; P129 L7, and PICS OAM2 description (P185 L11, L13, L15)

Suggested Remedy
"These 32 bits are set by the PHY to convey its status in the mr_tx_message[95:64] to the receiver (link partner)." - why is (link partner) in parentheses? I think what is meant is "to the link partner." Of course it's conveyed to a receiver. When you're transmitting a message, where else would it go?

Suggested Remedy
change "to the receiver (link partner)" to "to the link partner."

Suggested Remedy
"The optional 2.5GBASE-T1, 5GBASE-T1, or 10GBASE-T1 EEE capability allows compliant PHYs to transition to an LPI mode of operation when link utilization is low." isn't quite correct - EEE is independent on each direction, link utilization is not, therefore, the statement needs to be expanded - particularly because the expected applications are often asymmetric in utilization.

Suggested Remedy
change "when link utilization is low." to "when link utilization is low in either direction of transmission."
"PHYs with the EEE capability support transition to the LPI mode when the PHY has successfully completed training and pcs_data_mode is TRUE and subject to the timing requirements of 46.3.1.5." There are no timing requirements for the PHY transitioning in 46.3.1.5. It appears this is meant to reference 46.1.7 which requires the link be operational for at least one second before transitioning to LPI.

Suggested Remedy
Change cross reference to 46.3.1.5 to 46.1.7

Proposed Response

Zimmerman, George
ADI, APL Group, Aquantia, BMW, Cisco, CommScop

Comment Type T
Comment Status X

"IEEE Std 802.3cg-201x" is now published as "IEEE Std 802.3cg-2019"

Suggested Remedy
change "IEEE Std 802.3cg-201x" to "IEEE Std 802.3cg-2019" in multiple locations

Proposed Response

Response Status O

Zimmerman, George
ADI, APL Group, Aquantia, BMW, Cisco, CommScop

Comment Type E
Comment Status X

Type B and Type F have separate 'shall' s and Type F should not be added to PICS PD20 and PD22. Additionally this creates confusion as to which return loss needs to be used for which type... Also, the option code should be PDTF in both cases, not PSETF on the first row...

Suggested Remedy
Change editing instruction from "Change item PD20 and item PD22 in the table in 104.9.4.3 as follows (unchanged rows not shown):" to "Insert new PICS item PD20a after item PD20, and new PICS item PD22a after item PD22 in the table in 104.9.4.3 as follows (unchanged rows not shown):" - change PICS items in rows to read: "PD20a | Type F PD ripple and transients | 104.5.6.4 | In accordance with specifications shown in Table 104-7 for all operating voltages in the range of VPD sourced through a dc bias coupling network with MDI return loss as specified by Clause 149, and over the range of PPD. | *PDTF:M | Yes [ ]" and "PD22a | Type F PD measured ripple voltage post-processing | 104.5.6.4 | With transfer function H2(f) specified in Equation (104-3) where f2 = 10 MHz +/- 1% | *PDTF:M | Yes [ ]"

Proposed Response

Response Status O

Mcclellan, Brett
Marvell Semiconductor, Inc.

Comment Type E
Comment Status X

Table 45-244 should appear on page 47 following this text: "Change Table 45-244 as follows:

Suggested Remedy
move table as indicated

Proposed Response

Response Status O

Mcclellan, Brett
Marvell Semiconductor, Inc.

Comment Type E
Comment Status X

missing definition for ++ operator

Suggested Remedy
page204 line 33 add text: "The notation ++ after a counter or integer variable indicates that its value is to be incremented."

Proposed Response

Response Status O

Mcclellan, Brett
Marvell Semiconductor, Inc.

Comment Type E
Comment Status X

Proposed Response

Response Status O

Mcclellan, Brett
Marvell Semiconductor, Inc.
Comment Type  TR  Comment Status  X

**Comment:**
OAM Symbol 11 bits 7:0 are 'Reserved' which means they cannot be used for any purpose and a compliant device must set these bits to zero. The proposal for this definition (http://www.ieee802.org/3/ch/public/nov18/wienckowski_3ch_01b_1118.pdf) indicated that this symbol is reserved for future use, however it cannot be used by a device compliant to this informative annex.

Making these vendor defined bits allows them to be defined by OEMs or other organizations. Leaving these bits as zero for later use isn't necessary as any later project is free to define a new status structure.

**Suggested Remedy:**
- Page 202 line 32 change Symbol 11 bits D7 to D0 from individual reserved bits to "Vendor-specific field <7:0>".
- Page 203 line 49 insert new subclause 149B.3.7 and renumber remaining subclauses: "149B.3.7 Vendor-specific field <7:0> is indicated in OAM<11><7:0> and may be used to convey a vendor defined data field.

**Proposed Response**

Response Status  O

---

Comment Type  TR  Comment Status  X

**Comment:**
The conditions and duration for which these defined warning bits are left to the implementor to decide, but how long should the indicator bits be set =1 to ensure the management entity at the link partner has an opportunity to detect these status bits? These bits are not placed into latched indicators at the link partner, but are continuously updated in registers 1.2318 and 1.2319 as they arrive. For these bits: PowerSupplyWarning, PHY TempWarning, No MACMessagesWarning, DegradedLinkSegment we should recommend a minimum indication time. PolarityInversion is a static condition throughout the link, and therefore not an issue.

**Suggested Remedy:**
- Page 203 on lines 9, 18, 26, and 35 add the following sentence: "It is recommended that this status is set for a minimum of 100 milliseconds to ensure reception by the link partner management entity."

**Proposed Response**

Response Status  O

---

Comment Type  TR  Comment Status  X

**Comment:**
The subclause '149.8.2.2 MDI coupling attenuation' has no content and there has been no proposal for content. It should be removed.

**Suggested Remedy:**
delete subclause 149.8.2.2

**Proposed Response**

Response Status  O
**D3.0 Physical Layer Specifications and Management Parameters for 2.5 Gb/s, 5 Gb/s, and 10 Gb/s Auto**

**Comment ID:** i-80

**Mccellan, Brett**  
Marvell Semiconductor, Inc.

**Comment Type:** ER  
**Comment Status:** X  
**Suggested Remedy:**  
ISO 167540-5 is a typo copied from Clause 96. ISO 16750-5 is the correct reference

**Proposed Response**  
Change "ISO 167540-5" to "ISO 16750-5"

---

**Comment ID:** i-81

**Mccellan, Brett**  
Marvell Semiconductor, Inc.

**Comment Type:** E  
**Comment Status:** X  
**Suggested Remedy:**  
This state diagram section including subclauses 149.4.2.6.1, 149.4.2.6.2, 149.4.2.6.3 and 149.4.2.6.4 lacks description of the state diagram conventions. State diagram conventions are stated in 149.3.7.1 and 149.3.9.4.1, however the text states those conventions apply only to those subclauses.

**Proposed Response**  
Insert new subclauses and renumber remaining subclauses as needed.

---

**Comment ID:** i-82

**Mccellan, Brett**  
Marvell Semiconductor, Inc.

**Comment Type:** E  
**Comment Status:** X  
**Suggested Remedy:**  
This state diagram section including subclauses 149.4.4.1, 149.4.4.2, and 149.4.5 lacks description of the state diagram conventions. State diagram conventions are stated in 149.3.7.1 and 149.3.9.4.1, however the text states those conventions apply only to those subclauses.

**Proposed Response**  
Insert new subclauses and renumber remaining subclauses as needed.

---

**Comment ID:** i-83

**Mccellan, Brett**  
Marvell Semiconductor, Inc.

**Comment Type:** ER  
**Comment Status:** X  
**Suggested Remedy:**  
In Table 45-3 the Subclause for register 1.2317 should be 45.2.1.200

**Proposed Response**  
Change "Subclause" for "Register address" 1.2317 from "45.2.1.199" to "45.2.1.200".

---

**Comment ID:** i-84

**Jonsson, Ragnar**  
Aquantia

**Comment Type:** TR  
**Comment Status:** X  
**Suggested Remedy:**  
Table 78-4, in the 2.5GBASE-T1 Case-4 row and T_{phy_shrink_tx} column the value 120 should be changed to 128. See comment 22 on the initial working group ballot said to implement the values in graba_3ch_01a_0719.pdf in Table 78-4. The error was made in the initial edit.

**Proposed Response**  
For the 2.5GBASE-T1 Case-4 row and T_{phy_shrink_tx} column change the value "120" to "128"
### Proposed Response

#### Comment 149

**Comment Type:** E  **Comment Status:** X

**Comment:**

- **Jonsson, Ragnar**
  - **Company:** Aquantia
  - **Page:** P133
  - **Line:** L13

**Suggested Remedy:**

- **Change "toggling" to "toggling"**
- **Proposed Response:**
  - **Response Status:** O

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### Proposed Response

#### Comment 149C

**Comment Type:** E  **Comment Status:** X

**Comment:**

- **Jonsson, Ragnar**
  - **Company:** Aquantia
  - **Page:** P208
  - **Line:** L46

**Suggested Remedy:**

- **Remove footnotes a, b, c, and d,**
- **Proposed Response:**
  - **Response Status:** O

---
Comment Type: TR  Comment Status: X

Text does not adequately deal with specifying a uniform test condition for qualifying the test conditions for link segments in an automotive environment. Text should be added to reflect the shield grounding practice used in that environment.

Suggested Remedy

Insert the following text before the existing text on Page 198, Line 24: The shield of the cable shall have a hard ground connection to the connected equipment at each end of the reference cable assembly.

Proposed Response: Response Status: O