32.1 Physical Layer Specifications and Management Parameters for 2.5 Gb/s, 5 Gb/s, and 10 Gb/s Auton

When bit 1.2313.11 is set to one, the value in bits 1.2313.10:9 control the local transmitter's precoder | 45.2.1.196.2 | M | Yes[] No[]
When bit 1.2313.11 is set to zero, the value in bits 1.2313.10:9 are ignored and the link partner's request controls the local transmitter's precoder | 45.2.1.196.2 | M | Yes [] No []

On page 102 line 27 (149.3.2.2.20), change "The precoder_type is determined by the PCS decoding two bits in InfoField messages received from the remote PHY during training as:"

to: "In normal operation (see 45.2.1.196.3) the value of precoder_type shall be set to the value of PrecodeSel received from the link partner in the InfoField messages (see 149.4.2.4.5)."

(this PICS is already covered by PCT21)

Proposed Response Response Status O

Delete row for 1.2309.10:9 from Table 45-155a (page 35 lines 40-44)

Change reserved row in Table 45-155a (page 35 line 45) from 1.2309.8:0 to 1.2309.10:0

Delete page 36 lines 40-48, subclause 149.2.1.192.4 and renumber.

On page 41 line 33, Change Reserved row to be : 1.2313.12 | Reserved | Value always 0 | RO
and insert three new rows below the new reserved row:
1.2313.11 | Local transmitter precoder override | 0 = Normal Operation
1 = User Override | R/W
1.2313.10:9 | Local transmit precoder setting | 00 = transmit with no precoder
01 = transmit with 1-D precoder
10 = transmit with 1+D precoder
11 = transmit with 1-D2 precoder | R/W
1.2313.8:2 | Reserved | Value always 0 | RO

On page 41 line 47, add new subclauses after 45.2.1.196.1 and renumber appropriately:

45.2.1.196.2 Local transmitter precoder override (1.2313.11)
When bit 1.2313.11 is set to one, the local transmitter's precoder shall be controlled by the value of bits 1.2313.10:9, and the precoder requested by the link partner in PrecodeSel shall be ignored. When bit 1.2313.11 is set to zero, the transmitter shall ignore the bits 1.2313.10:9, and the precoder is set according to the value of PrecodeSel received from the link partner as specified in 149.3.2.2.20. The default value of 1.2313.11 is zero.

45.2.1.196.3 Local transmit precoder setting (1.2313.10:9)
When bit 1.2313.11 is set to one, bits 1.2313.10:9 control the precoder setting of the local transmitter, as defined in 149.3.2.2.20 in the variable precoder_type. For testing purposes, the precoder can be set using these bits, and the specified test can be carried out in by using these bits, bit 1.2313.11, and enabling test mode 3. During normal operation, bit 1.2313.11 is set to zero, and the precoder is set according to the value of PrecodeSel received from the link partner, and bits 1.2313.10:9 are ignored.

Add PICS items MM232 and MM233(editorial license to number and position appropriately):

Proposed Response Response Status O

Replace, "2.5 Gb/s, 5 Gb/s and 10 Gb/s" with "2.5 Gb/s, 5 Gb/s, and 10 Gb/s".

Proposed Response Response Status O

Type this amendment to IEEE Std 802.3-2018 adds physical layer specifications and management parameters for 2.5 Gb/s, 5 Gb/s, and 10 Gb/s operation on a single balanced pair of conductors suitable for applications. Does not read right

Suggested Remedy

Change to:

This amendment to IEEE Std 802.3-2018 adds physical layer specifications and management parameters for 2.5 Gb/s, 5 Gb/s, and 10 Gb/s operation on a single balanced pair of conductors suitable for automotive applications.
2.1 Physical Layer Specifications and Management Parameters for 2.5 Gb/s, 5 Gb/s, and 10 Gb/s Autos

There are multiple amendments missing from the front matter (802.3cn, 802.3cq, and soon 802.3cm) which are now in SA ballot. 802.3cn is now Amendment four, before 802.3cg, as well.

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

**Suggested Remedy**

Insert missing amendments in correct order in front matter

**Proposed Response**

**Response Status**: O

---

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

**IEEE Std 802.3cm-20xx - Amendment 7**

Add: IEEE Std 802.3cm™-20xx

Amendment 7—This amendment includes changes to IEEE Std 802.3-2018 and adds Clause 150. This amendment adds Physical Layer (PHY) specifications and management parameters for 400 Gb/s operation on four pairs (400GBASE-SR4.2) and eight pairs (400GBASE-SR8) of multimode fiber, over reaches of at least 100 m.

**Proposed Response**

**Response Status**: O

---

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

**IEEE Std 802.3cq-20xx - Amendment 6**

Add: IEEE Std 802.3cq™-20xx

Amendment 6—This amendment includes editorial and technical corrections, refinements, and clarifications to Clause 33 and related portions of the standard.

**Proposed Response**

**Response Status**: O
P802.3ch D2.1

32.1 Physical Layer Specifications and Management Parameters for 2.5 Gb/s, 5 Gb/s, and 10 Gb/s Automotive Electrical Ethernet

Cl     FM       SC     P   L   #
Marris, Arthur          Cadence Design Systems
Comment Type E
Title is wrong.
Suggested Remedy
Change title to:
"Draft Standard for Ethernet Amendment: Physical Layer Specifications and Management Parameters for 2.5 Gb/s, 5 Gb/s and 10 Gb/s Automotive Electrical Ethernet"
Also consider changing page headers to something other than "IEEE P802.3ch Multi-Gig Automotive Ethernet PHY Task Force"
perhaps change to: "IEEE P802.3ch Task Force: Physical Layer Specifications and Management Parameters for 2.5 Gb/s, 5 Gb/s and 10 Gb/s Automotive Electrical Ethernet"

Cl     FM       SC     P   L   #
Zimmerman, George CME Consulting/ADI, APL Gp, Aquantia, BMW, Cisco
Comment Type E
Comment Status X
"Minimum SNR margin" - Minimum should not be capitalized (it isn't the first word or an acronym)
Suggested Remedy
Change Minimum to minimum.

Cl     FM       SC     P   L   #
Tu, Mike Broadcom
Comment Type E
I think "gray code" should be "Gray code".
Suggested Remedy
Change "gray code" to "Gray code"

Cl     FM       SC     P   L   #
Zimmerman, George CME Consulting/ADI, APL Gp, Aquantia, BMW, Cisco
Comment Type E
"PHY Vendor specific" and "Link Partner vendor specific data" isn't a specific enough name for these registers, in the context of clause 45. These registers are specific to MultiGBASE-T1. As labeled, they look like general registers for ANY 802.3 PHY type. Suggest change name to "MultiGBASE-T1 PHY vendor specific data" and "MultiGBASE-T1 link partner PHY vendor specific data". Note also capitalization and alignment of the link partner register name
Suggested Remedy
Change as per comment. Also change names in 45.2.1.199 and table 45-155f

Cl     FM       SC     P   L   #
Marris, Arthur          Cadence Design Systems
Comment Type E
Comment Status X
"AUTO-NEGOTIATION IS OPTIONAL" should read 'for 10GBASE-T1' otherwise the asterisk looks like a general comment on auto-negotiation rather than specific to the 10GBASE-T1 stack
Suggested Remedy
add "FOR 10GBASE-T1" after "AUTO-NEGOTIATION IS OPTIONAL"
The definition of registers 1.2316 and 1.2317 is not being done in accordance with Clause 45 conventions or in keeping with "user defined data" as used in prior BASE-T PHYs. The names of the registers are such that when this amendment has been applied to the base standard it will not be clear what they are for.

**SuggestedRemedy**

In Table 45-3:
1. Change the name of register 1.2316 to "MultiGBASE-T1 user defined data" in subclause 45.2.1.199.
2. Change the name of register 1.2317 to "MultiGBASE-T1 link partner user defined data" in subclause 45.2.1.200.

In 45.2.1.199:
- Change the title to "MultiGBASE-T1 user defined data register (Register 1.2316)"
- Change the text to: "The assignment of bits for the MultiGBASE-T1 user defined data register is shown in Table 45–155f. The values of the bits in this register are all zeros unless the PHY identifies the link partner during Auto-Negotiation through communicating OUIs using the NEXT pages."

In Table 45–155f:
- Change the title to: "MultiGBASE-T1 user defined data register bit definitions".
- Delete the last row of the table.
- Change footnote a to "R/W = Read/Write"

In 45.2.1.199.1:
- Change the title to: "PHY vendor specific data (1.2316.15:0)"
- Delete 45.2.1.199.2
- Create a new level 4 subclause: "45.2.1.200 MultiGBASE-T1 link partner user defined data register (Register 1.2317)" with text:
  - "The assignment of bits for the MultiGBASE-T1 link partner user defined data register is shown in Table 45–155g. The values of the bits in this register are all zeros unless the PHY identifies the link partner during Auto-Negotiation through communicating OUIs using the NEXT pages."

In Table 45–155g:
- Add an ellipsis to the empty rows (two instances per table).

**Proposed Response**

**Response Status**: O

**Comment Status**: X

**Comment Type**: E

**Comment**: PHY names should not break across lines.

**SuggestedRemedy**

Widen first column of Tables 45-9 and 45-10 and use non-breaking hyphens in BASE-T1 instances. (do both - this way no matter what happens in the future, PHY names won't break across lines.)

**Proposed Response**

**Response Status**: O

**Comment Status**: X

**Comment Type**: E

**Comment**: The empty rows in Table 45-9 and Table 45-10 should contain an ellipsis.

**SuggestedRemedy**

Add an ellipsis to the empty rows (two instances per table).

**Proposed Response**

**Response Status**: O

**Comment Status**: X

**Comment Type**: E

**Comment**: "Add" is not a valid editing instruction.

**SuggestedRemedy**

Insert the following note below Table 45-21:

"Notes should use the paragraph tag "Note""

**Proposed Response**

**Response Status**: O

**Comment Status**: X

**Comment Type**: E

**Comment**: Table 45-21 is not being changed, so should not be shown.

**SuggestedRemedy**

Delete Table 45-21.

**Proposed Response**

**Response Status**: O

**Comment Status**: X

**Comment Type**: E

**Comment**: Change the editing instruction to: "Insert the following note below Table 45-21:"

**Proposed Response**

**Response Status**: O
After exiting the low-power mode, the PHY should go to either Auto-Negotiation or PHY Link Synchronization, instead of going to Figure 149-33 PHY Control state diagram.

**Suggested Remedy**

Delete the entire paragraph.

**Proposed Response**

Response Status: O

---

There are several problems subclause.

First - "Setting these bits forces the precoder to the mode set."

This sentence makes it appear that simply writing to these bits will cause precoder to use the written setting without other action required when in fact this setting is used only for test mode 3.

Second - "During normal operation, these bits are set according to the precoder requested by the link partner in the Infofield, and reading bits 1.2309.10:9 will represent the value of the request, which has been received and set into the transmitter."

It is very poor practice to use configuration bits (R/W) also as status bits (usually RO). It causes issues when read-modify-write operations are performed. It is also not clear whether these bits are supposed to act as RO in normal mode but RW during test mode. Further, during normal operation the setting of the precoder can already be inferred from 1.2312.3:2 status bits (Link partner precoder requested).

**Suggested Remedy**

change the text as follows:

Bits 1.2309.10:9 determine the precoder setting of the transmitter, as defined in 149.3.2.2.20 in the variable precoder_type while in test mode 3.

**Proposed Response**

Response Status: O
2.1 Physical Layer Specifications and Management Parameters for 2.5 Gb/s, 5 Gb/s, and 10 Gb/s Auton

Comment Type: TR  Comment Status: X

(Comment PRECD1) The language of "Actual precoder requested" or "selected" is all messed up and confusing. Which precoder parameters relate to the local transmitter and which to the request of the link partner's transmitter is not consistent. The "Link partner" ones are all clear, leaving me to think that it is just the local PHY's REQUEST, which is meant here.

**Suggested Remedy**

Make the following changes:
- Page 37 line 21 (Table 45-155b) change "Actual precoder requested" to "PrecodeSel"
- Page 38 line 8 (45.2.1.193.5 header) change "Actual precoder selected" to "PrecodeSel", and replace text of 45.2.1.193.5 (P38 lines 10-12) to read as follows:
  "Bits 1.2310.4:3 contain the requested precoder setting communicated by the PHY to the link partner via Infofields in the PrecodeSel field (see 149.4.2.4.4)."
- Page 39 line 15 (Table 45-155c) and Page 38 line 45 (45.2.1.194.2 header) change "Precoder request override" to "Precoder Selection", and replace text (P38 lines 47-48) to read as follows:
  "When 1.2311.5 is set as a one, the PHY shall use 1.2311.3:2 for the value of PrecodeSel, and when set to a zero the PHY controls the value of PrecodeSel. PrecodeSel is the desired precoder setting communicated to the link partner via Infofields specified in 149.4.2.4.4."
- Page 39 line 23 (Table 45-155c) and Page 39 line 37 (45.2.1.194.4 header) change "Precoder requested" to "User precoder selection", and replace text (P39 lines 38-39) to read as follows:
  When bit 1.2311.5 is a one, bits 1.2311.3:2 are the requested precoder setting communicated by the PHY to the link partner via Infofields in the PrecodeSel field (see 149.4.2.4.4).

**Proposed Response**  Response Status: O

Comment Type: E  Comment Status: X

The parameter name in Table 45-155b is "Actual precoder requested" and this fits with the text in the description cell as well as the text in 45.2.1.193.5. However, the title of 45.2.1.193.5 is "Actual precoder selected" which does not match

**Suggested Remedy**

Change the title of 45.2.1.193.5 from "Actual precoder selected (1.2310.4:3)" to: "Actual precoder requested (1.2310.4:3)"

**Proposed Response**  Response Status: O

Comment Type: E  Comment Status: X

The "actual precoder selected" name is confusing to readers.

**Suggested Remedy**

See proposed changes in tu_3ch_01_0919.pdf.

**Proposed Response**  Response Status: O

Comment Type: ER  Comment Status: X

"Actual precoder selected" - title of this subclause is not the same as the name of the bit in the table (Actual precoder requested" - suggest the table is more appropriate. (If the larger language (comment PRECD1) is accepted or accepted in principle, this comment should become moot and should be accommodated by the resolution).

**Suggested Remedy**

Change "Actual precoder selected" to "Actual precoder requested".

**Proposed Response**  Response Status: O
2.1 Physical Layer Specifications and Management Parameters for 2.5 Gb/s, 5 Gb/s, and 10 Gb/s Auton

---

Comment Type: E
Comment Status: X
"Reed-Solomon 'receiver' interleave setting" does not sound right. Delete the word 'receiver'.

Suggested Remedy
Change from: "... the Reed-Solomon receiver interleave setting …"
To: "... the Reed-Solomon interleave setting …"

Proposed Response
Response Status: O

Comment Type: E
Comment Status: X
In Table 45-155c, change "Slow wake" to "Slow Wake" in order to be consistent.

Suggested Remedy
Change all occurrences of "Slow wake" and "slow wake" into "Slow Wake" throughout the document.

Proposed Response
Response Status: O

Comment Type: E
Comment Status: X
The convention used in Clause 45 is to use "is one" and "is zero" rather than "is 1" and "is 0".

Suggested Remedy
Change "is 1" to "is one".
Change "is 0" to "is zero".

Proposed Response
Response Status: O

---

Comment Type: TR
Comment Status: X
"This bit shall be set" puts a requirement on the user and is inappropriate for a read/write bit. Reverse the changes from d2.0 in 45.2.1.194.5, 45.2.1.194.6 (note that this language is appropriate for RO registers but not for situations where the MDIO is supposed to write the value into the register, like the ones cited).

Suggested Remedy
Change "shall be set" to "should be set" on page 39 line 45 and on page 39 line 52.

Proposed Response
Response Status: O

---

Comment Type: T
Comment Status: X
These bits are requested by the link partner via Infofield. The current text is confusing.

Suggested Remedy
Change from: "... communicated to the link partner via Infofields ..."
To: "... communicated by the link partner via InfoFields ..."

Proposed Response
Response Status: O

---

Comment Type: E
Comment Status: X
Both "local device" and "local PHY" are used in this document. Maybe we should stay with "local PHY"?

Suggested Remedy
Replace all occurrences of "local device" by "local PHY" throughout the document.

Proposed Response
Response Status: O
32.1 Physical Layer Specifications and Management Parameters for 2.5 Gb/s, 5 Gb/s, and 10 Gb/s Auto

Comment Type: E  Comment Status: X
The convention used in Clause 45 for the values of pairs of bits is to not include a space between them.

Suggested Remedy
- Change "value of 0 0" to "value of 00"
- Change "value of 0 1" to "value of 01"
- Change "value of 1 0" to "value of 10"

Proposed Response: Response Status: O

Comment Type: E  Comment Status: X
Test mode 2 is described in 149.5.2.3.1.

Suggested Remedy
- Change "149.5.2.3" to "149.5.2.3.1"

Proposed Response: Response Status: O

Comment Type: T  Comment Status: X
The example values do not match the register definitions for 1.2314 and 1.2315. The examples use a resolution of 1/2560 instead of 0.1dB.

Suggested Remedy
- Lines 5 and 13, delete the example text ", 12.7 dB represented by 0xFF00, and –12.7 dB represented by 0x0100"

Proposed Response: Response Status: O

Comment Type: E  Comment Status: X
‘Reserved’ should be ‘Link partner vendor specific data’

Suggested Remedy
- Change ‘Reserved’ to ‘Link partner vendor specific data’

Proposed Response: Response Status: O
Tu, Mike

Comment Type: T
Comment Status: X

Register 1.2317 contains the Link partner vendor specific data.

Suggested Remedy:
Under column "Name", change "Reserved" to "Link partner vendor specific data"

Proposed Response
Response Status: O

Zimmerman, George

Comment Type: ER
Comment Status: X

Table 45-241 bit 3.2308.15 description and 45.2.3.71.1 contain a triplicate shalls to the one in the OAM state diagram (45.2.3.72.1 and the shall on the OAM state diagram, and reads odd, referring to 'state machine' inappropriately. The 'shall' on this bit clearing is actually the state diagram.
This is similar to the changes in the receive register 45-243, subject of maintenance request 1327 and I plan to submit it as a maintenance request.
Another comment fixes the defect that the OAM state diagrams don't have shall's associated with them. This defect is also in clause 97 and makes the maintenance request complicated, because there are NO PICS in clause 97 for OAM....

Suggested Remedy:
In Table 45-241, Change the second sentence in Description of 2313.15 from: "This bit shall self clear when register 3.2317 is read." to: "This bit shall self clear when register 3.2317 is read."

In 45.2.3.72.1 change "shall be set to one", to "is set to one" (P44 L27), and on line 29 change "This register shall be cleared by the state machine" to: "This bit shall self-clears"...

Proposed Response
Response Status: O

Anslow, Pete

Comment Type: TR
Comment Status: X

Cannot condense into 1 variable (mGigT1). If one device can do 2.5G only and another can do 10G only how would the incompatible_link work as both would assert mGigT1?
Fixing the footnote in page 156 is the proper way to address D2.0 comment 224.

Suggested Remedy:
Undo changes from D2.0 comment 224
Page 156 line 22 change link_control_mGigT1 and link_status_mGigT1 to
link_control_mGigT1 and link_status_mGigT1 where mGigT1 is 2.5GigT1, 5GigT1, or 10GigT1.

Proposed Response
Response Status: O
2.1 Physical Layer Specifications and Management Parameters for 2.5 Gb/s, 5 Gb/s, and 10 Gb/s Auton

**Comment:**

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

**Suggested Remedy:**

Make "Table 104-7" a hyperlink.

**Proposed Response:**

Response Status: O

---

Anslow, Pete  
Ciena

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

The two items *PSETE and *PDTE are being inserted by IEEE Std 802.3cg-20xx. The redundant editing instruction at the top of the page (proposed to be deleted in another comment) does not change the fact that this editing instruction should include this.

**Suggested Remedy:**

Change "in the table in 104.9.3 as follows" to "in the table in 104.9.3 (as modified by IEEE Std 802.3cg-20xx) as follows"

**Proposed Response:**

Response Status: O

---

Anslow, Pete  
Ciena

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

"Modify" is not a valid editing instruction.

**Suggested Remedy:**

Change "Modify item" to "Change item"

**Proposed Response:**

Response Status: O

---

Wienckowski, Natalie  
General Motors

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

The editing instruction at the top of page 68 is redundant as each change has its own editing instruction. "Modify" is not a valid editing instruction. The instruction is too vague to be of any use anyway.

**Suggested Remedy:**

Delete the editing instruction at the top of page 68

**Proposed Response:**

Response Status: O
P802.3ch D2.1 32.1 Physical Layer Specifications and Management Parameters for 2.5 Gb/s, 5 Gb/s, and 10 Gb/s Auton

Cl 104 SC 104.9.4.3 P 69 L 17 # 39
Wienckowski, Natalie General Motors
Comment Type E Comment Status X
SuggestedRemedy
Make "Clause 97" a hyperlink and remove the "forrest green" color.
Proposed Response Response Status O

Cl 125 SC 125.1 P 71 L 46 # 128
Zimmerman, George CME Consulting/ADI, APL Gp, Aquantia, BMW, Cisco
Comment Type TR Comment Status X
"NOTE 2 - AUTO-NEGOTIATION IS OPTIONAL" Auto-Negotiation is only optional for the BASE-T1 PHY's.
SuggestedRemedy
Add "FOR BASE-T1 PHYys" after "AUTO-NEGOTIATION IS OPTIONAL"
Proposed Response Response Status O

Cl 125 SC 125.1.4 P 72 L 34 # 26
Wienckowski, Natalie General Motors
Comment Type E Comment Status X
SuggestedRemedy
Make "78" a hyperlink.
Proposed Response Response Status O

Cl 125 SC 125.3 P 74 L 12 # 47
Lo, William Axonne Inc.
Comment Type E Comment Status X
Table fix gap in column 2 numbers
SuggestedRemedy
Remove the gaps in all the numbers in column 2.
Proposed Response Response Status O

Cl 149 SC 149.1.3.1 P 77 L 44 # 129
Zimmerman, George CME Consulting/ADI, APL Gp, Aquantia, BMW, Cisco
Comment Type E Comment Status X
149.3.2.2.18 is NOT where the interleaving is described. It is where the scrambler is. The interleaver IS in 149.3.2.2.16, where it was in the previous draft....
SuggestedRemedy
Change cross-ref from 149.3.2.2.18 to 149.3.2.2.16
Proposed Response Response Status O

Cl 149 SC 149.1.3.3 P 78 L 27 # 130
Zimmerman, George CME Consulting/ADI, APL Gp, Aquantia, BMW, Cisco
Comment Type T Comment Status X
"The transition to or from LPI mode shall not cause any MAC frames to be lost or" is a fragment of a sentence and an untestable shall....
SuggestedRemedy
delete sentence fragment, or change it to read: "The transition to or from LPI mode should not cause any MAC frames to be lost or corrupted."
Proposed Response Response Status O

Cl 149 SC 149.1.3.3 P 78 L 27 # 100
Graba, Jim Broadcom
Comment Type E Comment Status X
The last part of the sentence is missing?
SuggestedRemedy
Based on D2.0, change last part of sentence from: "... to be lost or"
To: "... to be lost or corrupted."
Proposed Response Response Status O
### Physical Layer Specifications and Management Parameters for 2.5 Gb/s, 5 Gb/s, and 10 Gb/s Automation

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<th>L 27</th>
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<td>PHY Health status is only available when the optional OAM is enabled.</td>
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<td>Change from: &quot;When the PHY Health status received …&quot;</td>
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<td>To: &quot;When the optional MultiGBASE-T1 OAM is enabled and the PHY Health status received …&quot;</td>
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<th>P 78</th>
<th>L 45</th>
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<tr>
<td>More details are needed in the sentences between line 45 and line 47. Recommend to use Clause 97 as the baseline, and apply the scaling from 1 usec (Clause 97) to 1.25 usec (Clause 149).</td>
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<td>Change line 45 to line 47 from: &quot;The MASTER PHY sends a synchronization sequence. If there is no response from the SLAVE, the MASTER repeats by sending a synchronization sequence. If the slave detects the sequence, it responds with a synchronization sequence.&quot;</td>
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<td>To: &quot;The MASTER PHY sends a synchronization sequence for 1.25 μs. If there is no response from the SLAVE, the MASTER repeats by sending a synchronization sequence every 6.25 μs. If the slave detects the sequence, it responds with a synchronization sequence for 1.25 μs (after the MASTER has stopped transmitting).&quot;</td>
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<tr>
<th>Tu, Mike Broadcom</th>
<th>149.2.1.1</th>
<th>P 81</th>
<th>L 16</th>
<th>Comment Status X</th>
<th>Proposed Response</th>
<th>Response Status O</th>
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<td>It is sufficient to say &quot;PHY Link Synchronization&quot;. Delete &quot;algorithm&quot;.</td>
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<td>Change from: &quot;… the PHY Link Synchronization algorithm to …&quot;</td>
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<td>To: &quot;… the PHY Link Synchronization to …&quot;</td>
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<td>PMA_Link.request can be set by either the Auto-Negotiation or the PHY Link Synchronization.</td>
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<td><strong>Suggested Remedy</strong></td>
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<tr>
<td>Change line 24 and 25 to:</td>
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<td>DIABLE Used by the Auto-Negotiation or PHY Link Synchronization function to disable the PHY.</td>
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<tr>
<td>ENABLE Used by the Auto-Negotiation or PHY Link Synchronization function to enable the PHY.</td>
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<td><strong>Proposed Response</strong></td>
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<td>Response Status O</td>
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</table>
2.1 Physical Layer Specifications and Management Parameters for 2.5 Gb/s, 5 Gb/s, and 10 Gb/s Auton

Comment Type: T  Comment Status: X
PMA_Link.request can be set by either the Auto-Negotiation or the PHY Link Synchronization.

Suggested Remedy
Change start of this sentence from: "Auto-Negotiation generates …"
To: "Auto-Negotiation or PHY Link Synchronization generates …"

Proposed Response
Response Status: O

Comment Type: T  Comment Status: X
PMA_Link.indication also goes to the PHY Link Synchronization.

Suggested Remedy
Change from: "…, and the Auto-Negotiation functions …"
To: "…, and the Auto-Negotiation or PHY Link Synchronization function …"

Proposed Response
Response Status: O

Comment Type: E
"The subsequent functions of the PCS Transmit process" is meaningless, because the preceding text no longer talks about the generation of 65B blocks.

Suggested Remedy
Change "The subsequent functions of the PCS Transmit process" to "After mapping the XGMII transfers to 64B/65B blocks, the subsequent functions of the PCS Transmit process"

Proposed Response
Response Status: O

Comment Type: E
typo
"RS-FE symbols" should be "RS-FEC symbols".

Suggested Remedy
Change from: "… OAM field, then add 340 bits of parity for the RS-FE, interleave the RS-FE symbols, …"
To: "… OAM field, then interleave and add 340 bits of parity for the RS-FEC, …"

Proposed Response
Response Status: O
Lo, William Axonne Inc.

Comment Type: E  Comment Status: X

Suggested Remedy:
- RS-FE should be RS_FEC

Proposed Response

---

Slavick, Jeff Broadcom

Comment Type: E  Comment Status: X

Suggested Remedy:
- Change "RS-FE symbols" to "RS-FEC symbols"

Proposed Response

---

Zimmerman, George CME Consulting/ADI, APL Gp, Aquantia, BMW, Cisco

Comment Type: E  Comment Status: X

Suggested Remedy:
- Change "RS-FE" to "RS-FEC"

Proposed Response

---

McClellan, Brett Marvell

Comment Type: T  Comment Status: X

Suggested Remedy:
- "The 3600 bits in this frame are then encoded into 1800 PAM4 symbols and transferred sequentially to the PMA."
- This statement is incorrect.
- Following the RS-FEC interleaving, there is no longer a 3600 bit frame for L=2 or 4.
- Further, the bits are scrambled prior to PAM4 mapping.

Suggested Remedy:
- Delete this sentence.

Proposed Response

---

McClellan, Brett Marvell

Comment Type: T  Comment Status: X

Suggested Remedy:
- I think the last sentence is talking about superframes. So scale both number by L.

Proposed Response

---

McClellan, Brett Marvell

Comment Type: T  Comment Status: X

Suggested Remedy:
- "3600 bits" to "3600xL bits", and change "1800 PAM4 symbols" to "1800xL PAM4 symbols".

Proposed Response

---

McClellan, Brett Marvell

Comment Type: T  Comment Status: X

Suggested Remedy:
- Per Figure 78-1 and 46.4 it is not the MAC but the RS and LPI Client that controls entry to LPI mode.

Proposed Response

---

McClellan, Brett Marvell

Comment Type: T  Comment Status: X

Suggested Remedy:
- Change 'MAC' to 'RS'

Proposed Response
The block diagram is shown in Figure 149–5.

Suggested Remedy

Change the sentence to: “A block diagram of the PCS Transmit functions is shown in Figure 149–5.”

Proposed Response

Response Status O

's_n' should be 'S_n' to match usage in 149.3.4

Suggested Remedy

change 's_n' to 'S_n'

Proposed Response

Response Status O

To be consistent, "TxB" should be "tx_coded" and "RxB" should be "rx_coded".

Suggested Remedy

Change "The bits of a transmitted or received block are labeled TxB<31:0> and RxB<31:0> where TxB<0> and RxB<0> represent the first transmitted bit." To "The bits of a transmitted or received block are labeled tx_coded<64:0> and rx_coded<64:0> respectively where tx_coded<0> and rx_coded<0> represent the first transmitted bit.".

Proposed Response

Response Status O

There's no signals defined as TXD<32> to TXD<63>. Only the XGMII TXD<0> to TXD<31>.

Suggested Remedy

delete TXD<0>, TXD<31>, TXD<32>, and TXD<63> and move the XGMII line with signal labels down to align with the arrows.

Proposed Response

Response Status O

There's no signals defined as RXD<32> to RXD<63>. Only the XGMII RXD<0> to RXD<31>.

Suggested Remedy

delete RXD<0>, RXD<31>, RXD<32>, and RXD<63> and move the XGMII line with signal labels down to align with the arrows.

Proposed Response

Response Status O
2.1 Physical Layer Specifications and Management Parameters for 2.5 Gb/s, 5 Gb/s, and 10 Gb/s Auton

Comment

McClellan, Brett Marvell

Comment Type E Comment Status X

arrows are in wrong direction and should point toward the XGMII

SuggestedRemedy

reverse the arrow directions

Proposed Response Response Status O

Comment

Edem, Brian Aquantia

Comment Type E Comment Status X

In Figure 149.7 the eight arrows from the "Input to decoder function 65B block" to the XGMII at the top of the drawing should be pointing up towards the XGMII

SuggestedRemedy

Reverse the arrows

Proposed Response Response Status O

Comment

McClellan, Brett Marvell

Comment Type E Comment Status X

149.3.2.3.2 uses the term 'descrambler' for the receiver. Should probably match it in this figure.

SuggestedRemedy

change 'scrambler' to 'descrambler'

Proposed Response Response Status O

Comment

Tu, Mike Broadcom

Comment Type E Comment Status X

Should we use "MultiGBASE-T1" instead of "2.5G/5G/10GBASE-T1"?

SuggestedRemedy

Change "2.5G/5G/10GBASE-T1 PCS" to "MultiGBASE-T1 PCS", and change "2.5G/5G/10GBASE-T1 control codes" to "MultiGBASE-T1 control code".

Proposed Response Response Status O

Comment

Tu, Mike Broadcom

Comment Type T Comment Status X

Figure 149-6 shows the PCS bit ordering, not Figure 149-8.

SuggestedRemedy

Change "Figure 149-8" to "Figure 149-6".

Proposed Response Response Status O

Comment

Tu, Mike Broadcom

Comment Type T Comment Status X

The RS-FEC encoder input of 3260 bits consist of tx_group50x65B AND the 10-bit OAM.

SuggestedRemedy

Change line 31 from: "… takes the 3260-bit vector tx_group50x65B, and …"

To: "… takes the 3260-bit vector tx_group50x65B and the 10-bit OAM_field, and …"

Proposed Response Response Status O
P802.3ch D2.1

32.1 Physical Layer Specifications and Management Parameters for 2.5 Gb/s, 5 Gb/s, and 10 Gb/s Auton

Cl 149 SC 149.3.2.2.17 P 100 L 10 # 83

Tu, Mike Broadcom

Comment Type T Comment Status X

The additive scrambler is added after the encoder and interleaver. So this sentence is not quite correct.

Suggested Remedy

Change from: "tx_RSmessage<3259:0> prior to additive scrambling is formed as follows."
To: "tx_RSmessage<3259:0> prior to the RS-FEC (360,326) encoder is formed as follows."

Also add indents at line 12 and line 14.

Proposed Response Response Status O

Cl 149 SC 149.3.2.2.17 P 100 L 12 # 89

Tu, Mike Broadcom

Comment Type T Comment Status X

The mapping on line 12 and line 14 is inconsistent with Figure 149-6. The OAM symbol is appended after the fifty 65B blocks, and should be the last symbol entering into each RS FEC encoder. But the mapping on line 12 and line 14 will make the OAM symbol the first one to enter the RS FEC encoder.

Suggested Remedy

Change line 12 from: "tx_RSmessage<3259:10> = tx_group50x65B<3249:0>.*
To: "tx_RSmessage<3249:0> = tx_group50x65B<3249:0>.*

Change line 14 from: "tx_RSmessage<9:0> = OAM_field<9:0>."
To: "tx_RSmessage<3259:3250> = OAM_field<9:0>."

Proposed Response Response Status O

Cl 149 SC 149.3.2.2.17 P 100 L 48 # 153

McClellan, Brett Marvell

Comment Type E Comment Status X

typo

Suggested Remedy

change 'an' to 'a'

Proposed Response Response Status O

Cl 149 SC 149.3.2.2.18 P 101 L 35 # 84

Tu, Mike Broadcom

Comment Type E Comment Status X

Apply subscript formatting on the index "n" in Dn[0] and Dn[1].

Suggested Remedy

Apply subscript formatting on the index "n" in Dn[0] and Dn[1].

Proposed Response Response Status O

Cl 149 SC 149.3.2.2.18 P 101 L 42 # 85

Tu, Mike Broadcom

Comment Type T Comment Status X

Use "n" as the common index of symbol numbers in time, in 149.3.2.2.18, 149.3.2.2.19, 149.3.2.2.20, and 149.3.2.2.21.

Suggested Remedy

1. On page 101, line 35, insert a new paragraph as follows:

"n is an index indicating the symbol number".

2. In in 149.3.2.2.18, 149.3.2.2.19, 149.3.2.2.20, and 149.3.2.2.21, applying the following changes:

2.1 Change all bit notation "A" to "A_n", where "_" means subscript formatting.
2.2 Change all bit notation "B" to "B_n", where "_" means subscript formatting.
2.3 Change all "G(j)" to "G(n)".
2.4 Change all "P(j)" to "P(n)", all "P(j-1)" to "P(n-1)", and "P(j-2)" to "P(n-2)".
2.5 Change "M(u)" to "M(n)".

3. Change page 103, line 6 from "The PAM4 encoded symbols are denoted M(u), where:" to "The PAM4 encoded symbols are denoted M(n)."

4. Delete page 103, line 8.

Proposed Response Response Status O
2.1 Physical Layer Specifications and Management Parameters for 2.5 Gb/s, 5 Gb/s, and 10 Gb/s Auton

Zimmerman, George
CME Consulting/ADI, APL Gp, Aquantia, BMW, Cisco

Comment Type: E  Comment Status: X

- Missing comma on parenthetical phrase: "Each pair of bits, (A, B), where A is the bit arriving first is converted to"

Suggested Remedy:
- Change "Each pair of bits, (A, B), where A is the bit arriving first is converted to" to "Each pair of bits, (A, B), where A is the bit arriving first, is converted to"

Proposed Response
Response Status: O

---

Slavick, Jeff
Broadcom

Comment Type: TR  Comment Status: X

- The precoder_type is suppose to be assigned to two bits from the InfoFields, which contains 96 bits of information. So which 2 bits should be used?

Suggested Remedy:
- Change "two bits in the InfoField messages" to "the PrecodeSel field from the InfoField messages (see 149.4.2.4.5)"

Proposed Response
Response Status: O

---

Wienckowski, Natalie
General Motors

Comment Type: E  Comment Status: X

- What is "PAM4 mode"?

Suggested Remedy:
- Change: PAM4 mode
  To: PAM4 encoding

Proposed Response
Response Status: O
"The transmit function of the PHY initiates a transition to the LPI transmit mode when it generates 8 RS-FEC frames composed entirely of LPI control characters, as described in 149.3.2.2.22. The transmit function of the link partner signals the transition using the sleep signal" awkward language and why reference the link partner? This text is about the local device and LPI signaling.

Suggested Remedy
change to
"The transmit function of the PHY initiates a transition to the LPI transmit mode by generating the sleep signal comprised of 8 RS-FEC frames composed entirely of LPI control characters, as described in 149.3.2.2.22."

Proposed Response Response Status O

"offset by the link partner’s.“ awkward language

Suggested Remedy
change to "offset between the link partners."

Proposed Response Response Status O
The wording of this sentence is confusing and redundant. A better specification regarding PFC counter alignment can be found in 149.4.2.4.10, page 147 line 26:

"During startup, prior to entering the COUNTDOWN state, the SLAVE shall align its transmit 65B RS-FEC frame to within +0/–4 × S (See Table 149–1 for definition of S.) partial PHY frames of the MASTER as seen at the SLAVE MDI. The SLAVE InfoField partial PHY frame Count shall match the MASTER InfoField partial PHY frame Count for the aligned frame."

**Suggested Remedy**

Replace the last two sentences: "For 10GBASE-T1, 5GBASE-T1, and 2.5GBASE-T1 the SLAVE’s PFC24 are +0/–4, +0/–2, and +0/–1 partial frames respectively with respect to the MASTER’s PFC24."

To: "For the requirements on the SLAVE and the MASTER frame alignment, see 149.4.2.4.10."

**Proposed Response**

Suggested Remedy

For 10GBASE-T1, 5GBASE-T1, and 2.5GBASE-T1 the SLAVE’s PFC24 are +0/–4, +0/–2, and +0/–1 partial frames respectively with respect to the MASTER’s PFC24.”

This sentence contradicts the prior sentence which requires the slave to match the PFC24 of the master.

**Suggested Remedy**

delete the sentence

**Proposed Response**

Inconsistent usage of the term "RS-FEC frame count".

The term "RS-FEC frame count" is a continuous counter of the RS-FEC frames. But in Table 149-5, it is used to indicate the length of LPI signals.

**Suggested Remedy**

In Table 149-5, change the top row of the second column from "RS-FEC frame count" to "Number of RS-FEC frame periods".

**Proposed Response**

The paragraph mentions 2 benefits. The first one listed does not sound like a benefit. The intended benefit is that the ALERTs do not overlap, but we determined that they may overlap a little bit given the tolerance in the standard. The fact that the ALERTs mostly do not overlap is still a benefit. Rephrase as shown below.

**Suggested Remedy**

"may overlap" to "mostly will not overlap"

**Proposed Response**

It is not clear what it means by "the transmitter shall stop transmitting".

**Suggested Remedy**

Change the sentence from: "During the quiet period the transmitter shall stop transmitting."

To: "During the quiet period the PCS transmitter shall pass zeros to the PMA via the PMA_UNITDATA.request interface."

**Proposed Response**
Graba, Jim  
Broadcom

Comment Type  T  Comment Status  X

The "side-stream scrambler" is in the PCS, not in the PMA.

SuggestedRemedy  
Delete "PMA" from this sentence.

Graba, Jim  
Broadcom

Comment Type  E  Comment Status  X

The statement "The training sequence described in 149.3.4 shall be used during the LPI mode, with the scramblers free-running from PCS Reset" is confusing and adds no new information.

SuggestedRemedy  
Delete this sentence.

Graba, Jim  
Broadcom

Comment Type  E  Comment Status  X

Mention of Infofield is distracting. And there aren't 128 InfoField bits.

SuggestedRemedy  
Remove " with the exception that the Infofield consists of a sequence of 128 zeros".

Proposed Response  
Response Status  O
In Figure 149-18, there are no states named "RECEIVE_LPI" or "RECEIVE_WAKE".

**Suggested Remedy**
1. Change "RECEIVE_LPI" to "RX_L".
2. Change "RECEIVE_WAKE" to "RX_W".
3. Change "Figure 149-18" to "Figure 149-19".

**Proposed Response**

In Figure 149-16, there are no states named "SEND_LPI" or "SEND_WAKE". In Figure 149-20, there is SEND_WAKE, but no SEND_LPI. The text should refer to the correct states in Figure 149-17.

**Suggested Remedy**
1. Change "SEND_LPI" to "TX_L".
2. Change "SEND_WAKE" to "TX_WN".
3. Change "Figure 149-16" to "Figure 149-17".

**Proposed Response**

Fix corner case out of sync condition between Figure 149-17 and 149-20.

Scenario:
LPI is send at the initial RS frame just as \( lp_{low}\_\text{snr}=1 \)
TX_L state is entered and tx\_lpi\_req never gets set to true
Stuck in TX_L state since it is waiting for tx\_lpi\_active to go true.
Meanwhile in Figure 149-20 stuck at TX_NORMAL since tx\_lpi\_req remains false
so never enters into SEND_SLEEP to set tx\_lpi\_active to true.
So we are deadlocked Figure 149-17 waiting for tx\_lpi\_active to go true while Figure 149-20 is waiting for tx\_lpi\_req to go true.
Remedy below breaks the deadlock.

**Suggested Remedy**
Change:
\[
(lp_{low}\_\text{snr} + \text{T\_TYPE(tx\_raw)} = (C + D + E + S + T)) \times \text{tx\_lpi\_active}
\]
To:
\[
(lp_{low}\_\text{snr} + \text{T\_TYPE(tx\_raw)} = (C + D + E + S + T)) \times (\text{tx\_lpi\_req} + \text{tx\_lpi\_active})
\]
There is no requirement for the OAM state diagrams.

Suggested Remedy

Insert new second sentence in first paragraph of 149.3.9 "When OAM is implemented, behavior shall conform to the state diagrams in Figure 149-24 and Figure 149-25." Add new first PICS item to 149.11.4.2.8 OAM:
State diagram behavior | 149.3.9.4 | Conforms to Figure 149-24 and 149-25 | OAM: M | Yes [] No []

Proposed Response  Response Status O

"OAM field: The OAM10-bit field" - there is no such phrase as OAM10-bit field... And defining the OAM field as the OAM field isn't useful.

Suggested Remedy

Change "The OAM10-bit field in each PHY frame" to "A 10-bit field in each PHY frame reserved for the OAM symbol"

Proposed Response  Response Status O

"The MultiGBASE-T1 PMA shall take no longer than 100 ms to enter the PCS_DATA state after exiting from reset or low power mode." is a non-interoperable way of stating a startup time requirement. The startup time may be allocated to one training state in one phy and another training state in another phy. To get interoperability, startup time must be allocated to phy control states.

Suggested Remedy

Task force to discuss. (this requires some consensus building - sorry!)

Proposed Response  Response Status O

The PMA Transmit electrical specifications are given in 149.5.2.

Suggested Remedy

Change "149.1.3" to "149.5.2.2".

Proposed Response  Response Status O
2.1 Physical Layer Specifications and Management Parameters for 2.5 Gb/s, 5 Gb/s, and 10 Gb/s Auton

Souvignier, Tom  Broadcom

Comment Type  TR  Comment Status  X

It is not clear what is meant by "each InfoField" since the PFC 24 and CRC16 values will be changing after each PAM2 PHY training frame.

Suggested Remedy
Change this sentence from: "Each InfoField shall be transmitted at least 256 times ..."
To: "InfoField shall be transmitted at least 256 times with each change to octets 7-10 to ensure detection at link partner."

Proposed Response  Response Status  O

Souvignier, Tom  Broadcom

Comment Type  T  Comment Status  X

Field "MSG24" in Figure 149-27 not defined. Figure 149-27 not needed since it is shown in figures 149-28 and Figure 149-29 for both PMA states.

Suggested Remedy
Remove Figure 149-27 and change first sentence of paragraph on page 143 line 30 to "The 12-octet InfoField shall include the fields in 149.4.2.4.2 through 149.4.2.4.8, also shown in Figure 149–28 and Figure 149–29."

Proposed Response  Response Status  O

Souvignier, Tom  Broadcom

Comment Type  T  Comment Status  X

Figure 149–28—InfoField TRAINING format octets 8/9/10 should be labeled "PHY Capability Bits" as indicated in subclause 149.4.2.4.5 and Table 149-12

Suggested Remedy
Change "UsrCfgCap" to "PHY Capability Bits" in Figure 149–28

Proposed Response  Response Status  O

Souvignier, Tom  Broadcom

Comment Type  T  Comment Status  X

The only constraint on DataSwPFC24 is that it is 24 bits and a multiple of 16. A PFC interval is 450 baud intervals, which at 10 gig is 80 nsec. As it is, this allows startup to hang for 16776960*80nsec = 1.342 seconds, which is WAY too long for a 100 msec total startup to allocate for a synchronization countdown after both receivers are reporting they are OK. A constraint of 500 (40 usec) should be more than enough, and would still be reasonable at 2.5 gig (160 usec). Also, DataSwPFC24 could be so close to the current PFC that the link partner might not be able to sync.

Suggested Remedy
Add new final sentence to end of paragraph in 149.4.2.4.6: "DataSwPFC24 shall be a minimum of  64 and a maximum of 512 from the current PFC24 value."

Proposed Response  Response Status  O
The SLAVE should align its transmit frames before it starts transmission. Otherwise MASTER will need to redo frame alignments during training.

**Suggested Remedy**

- Change from: "During startup, prior to entering the COUNTDOWN state, the SLAVE shall align …"
- To: "During startup, prior to entering the TRAINING state, the SLAVE shall align …"

**Proposed Response**

Response Status: O

---

In state diagrams, the transitions shouldn’t include "=true" or "=false", instead you should have the variable_name for true and !variable_name for false.

**Suggested Remedy**

- In Figure 149-32, change the following:
  - L25 & L31: "send_s_sidget = false" to "send_s_sigdet"
  - L39: "power_on = true" to "power_on"
  - L40: "mr_main_reset = true" to "mr_autoneg_enable"
  - L49: "mr_autoneg_enable = false" to "mr_autoneg_enable"

**Proposed Response**

Response Status: O

---

Figure 149-32, transition from SIGDET_WAIT to SILENT_WAIT the condition is misspelled

**Suggested Remedy**

- Change send_s_sidget to send_s_sigdet

**Proposed Response**

Response Status: O
Comment Type: E  Comment Status: X

In state diagrams, the transitions shouldn't include "=true" or "=false", instead you should have the variable_name for true and !variable_name for false.

Suggested Remedy

In Figure 149-34, change the following:
L2:  "auto_neg_imp = true" to "auto_neg_imp"
L2:  "mr_autoneg_enable = true" to "mr_autoneg_enable"
L4:  "auto_neg_imp = false" to "auto_neg_imp"
L4:  "mr_autoneg_enable = false" to "mr_autoneg_enable"
L12:  "pcs_data_mode = true" to "pcs_data_mode"

Proposed Response  Response Status: O

---

Comment Type: T  Comment Status: X

The most common transmitter connection to an oscilloscope utilizes two 50-ohm channels. Figure 149-36 should be updated.

Suggested Remedy

Recommended new figure 149-36

Proposed Response  Response Status: O

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Comment Type: E  Comment Status: X

While Fmax is used for several link segment parameters, it only gets defined for insertion loss. This definition (Equation 149-18) needs to be moved up to 149.7

Suggested Remedy

Insert new second paragraph in 149.7: "For the three different PHY types, link segment parameters are specified to different upper frequencies, given by the parameter Fmax shown in Equation 149-17".

Insert (new) Equation 149-17, which is the current Equation 149-18:  Fmax = 4000 X S Followed by "See Table 149-1 for definition of S."

Delete lines 30 through 33, so that 149.7.1.1 after the equation (currently 149-17, now 149-18) reads:

f is the frequency in MHz; 1 <= f <= Fmax.

The insertion loss is illustrated in Figure 149-42.

Proposed Response  Response Status: O

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Comment Type: E  Comment Status: X

In the equation defined by parts (149–22). The frequency point 480/2N belongs only to the first part. The frequency point 3000 belongs to the second and third part. This ist not consistent.

Suggested Remedy

Change the second part "480/2N ≤ f < 3000 MHz" to "480/2N ≤ f < 3000"

Proposed Response  Response Status: O
2.1 Physical Layer Specifications and Management Parameters for 2.5 Gb/s, 5 Gb/s, and 10 Gb/s Auton

Cl 149 SC 149.7.1.3 P 167 L 23 # 141
Zimmerman, George CME Consulting/ADI, APL Gp, Aquantia, BMW, Cisco

Comment Type T Comment Status X
While the title for Figure 149-43 says there are 5 curves, the figure only shows 2 curves (this is due to frequency overlaps), but is confusing. Also, 2.5G no longer has the "N" factor, which makes the figure even more confusing.

SuggestedRemedy
Divide Figure 149-43 into 3 figures, one for 2.5G, one for 5G and one for 10G. Alternately, delete the figure.

Proposed Response Response Status O

Cl 149 SC 149.7.1.4 P 167 L 35 # 63
Ohni, Josef MD Elektronik

Comment Type E Comment Status X
In the equation defined by parts (149–24). The frequency point 750 belongs to the first and second part.

SuggestedRemedy
Change the first part "30 ≤ f ≤ 750 MHz" to "30 ≤ f < 750 MHz"

Proposed Response Response Status O

Cl 149 SC 149.7.2.1 P 169 L 9 # 143
Zimmerman, George CME Consulting/ADI, APL Gp, Aquantia, BMW, Cisco

Comment Type TR Comment Status X
It is important to limit the noise ingress even outside the bandwidth of the PHY, especially if multiple rates of PHYs are to be used together in the same system. As such, the PSANEEXT and PSAFEXT characteristic needs to be specified to the same frequency for all PHY types

SuggestedRemedy
Replace Fmax on Page 169 line 9 and Page 170 line 6 with 4000 MHz.

Proposed Response Response Status O

Cl 149 SC 149.11.4.1 P 175 L 28 # 28
Wienckowski, Natalie General Motors

Comment Type E Comment Status X

SuggestedRemedy
Make "Clause 98" in Feature column a hyperlink.

Proposed Response Response Status O

Cl 149 SC 149.11.4.2.1 P 176 L 27 # 29
Wienckowski, Natalie General Motors

Comment Type E Comment Status X
Incorrect link trying to go outside the document.

SuggestedRemedy
Change: 149.3.4.2 to 149.3.5.1 (hyperlink in the document)

Proposed Response Response Status O

Cl 149 SC 149.9.2.1 P 178 L 24 # 144
Zimmerman, George CME Consulting/ADI, APL Gp, Aquantia, BMW, Cisco

Comment Type E Comment Status X
IEEE Std 802.3 does not specify equipment, and can't put a 'shall' on "All equipment subject to this clause...shall conform to the potential environmental stresses", or to the systems integrating the PHY (149.9.2.2). 802.3cg had similar language in ballots and the suggested language is drawn from the remedies there.

SuggestedRemedy
Change "shall conform" to "is expected to conform" in 149.9.2.1, and "shall comply" with "is expected to comply" in 149.9.2.2.

Proposed Response Response Status O
IEEE Std 802.3 does not restrict the EMC test methods ("PHY shall be tested according to CISPR 25 test methods"). The integrating system will specify the test methods to be used, and even though they usually are CISPR25, there is no need to put that here, and inappropriate to require it.

SuggestedRemedy
Delete "The PHY shall be tested according to CISPR 25 test methods defined to measure the PHY’s EMC performance in terms of radio frequency (RF) immunity and RF emissions."

Proposed Response
Response Status O

SuggestedRemedy
Make "Table 149-10" in Feature column a hyperlink.

Proposed Response
Response Status O

SuggestedRemedy
Make "Table 149-11" in Feature column a hyperlink.

Proposed Response
Response Status O

SuggestedRemedy
Make "Figure 149–32" in Feature column a hyperlink.

Proposed Response
Response Status O

SuggestedRemedy
Make "149.5.2" in Feature column a hyperlink.

Proposed Response
Response Status O

SuggestedRemedy
Make "149.5.3" in Feature column a hyperlink.

Proposed Response
Response Status O
P802.3ch D2.1 2.1 Physical Layer Specifications and Management Parameters for 2.5 Gb/s, 5 Gb/s, and 10 Gb/s Auton

### Comment 149A

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

**Wienckowski, Natalie** General Motors

- **Clarify that the environmental conditions in 149A are the applicable conditions for the defined test method.**

**Suggested Remedy**

- Change: Measurements are performed at ...
- To: These test methods are applicable for temperature of ...

**Proposed Response**

**Response Status:** O

### Comment 149B

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

**Wienckowski, Natalie** General Motors

- **In state diagrams, the transitions shouldn't include "=true" or "=false"; instead you should have the variable name for true and !variable_name for false.**

**Suggested Remedy**

- In Figure 149B-2, change the following:
  - L15 & L28: "mr_rx_clear_rec=true" to "mr_rx_clear_rec"
  - L28: "mr_rx_clear_rec=false" to "!mr_rx_clear_rec"

**Proposed Response**

**Response Status:** O

### Comment 149B

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

**Lo, William** Axonne Inc.

- **Font size of text in boxes and text in arrows are not consistent**

**Suggested Remedy**

- Make font sizes of text consistent

**Proposed Response**

**Response Status:** O

### Comment 149B

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

**Tu, Mike** Broadcom

- **The variable "mr_tx_request_rec_clear" is not defined.**

**Suggested Remedy**

- In Figure 149B-3, the transition condition should be changed to: "mr_tx_clear_rec = true".

**Proposed Response**

**Response Status:** O
2.1 Physical Layer Specifications and Management Parameters for 2.5 Gb/s, 5 Gb/s, and 10 Gb/s Auton

Comment Type E Comment Status X
In state diagrams, the transitions shouldn't include "=true" or "=false", instead you should have the variable_name for true and !variable_name for false.

SuggestedRemedy
In Figure 149B-3, change the following:
L44: "mr_rx_request_rec_clear = true" to "mr_rx_request_rec_clear"
L50: "mr_rx_rec_cleared = true" to "mr_rx_rec_cleared"

Proposed Response Response Status O

Comment Type T Comment Status X
149C has no information on return loss

SuggestedRemedy
Change: provides information on insertion loss and return loss parameters
To: provides information on insertion loss parameters

Proposed Response Response Status O

Comment Type TR Comment Status X
Annex 149C missing information on return loss parameters of the channel defined between TX function and RX function illustrated in Figure 149C–1.

SuggestedRemedy
See presentation diminico_3ch_02_0919.pdf

Proposed Response Response Status O

Comment Type E Comment Status X
Table fix gap in column 3 numbers

SuggestedRemedy
Remove the gaps in all the numbers in column 3.

Proposed Response Response Status O