Cl **FM** *SC* **FM** *P* **3** *L* **4** # 221

Pandey, Sujan Velinktech

Comment Type **ER** *Comment Status* **X**

automotive Ethernet, 100M+2.5GMBASE-T1

SuggestedRemedy

automotive Ethernet, 100M+2.5GBASE-T1

Proposed Response *Response Status* **O**

Cl **FM** *SC* **FM** *P* **3** *L* **7** # 222

Pandey, Sujan Velinktech

Comment Type **ER** *Comment Status* **X**

2.5G+100MBASE-V1, 100M+5GMBASE-V1

SuggestedRemedy

2.5G+100MBASE-V1, 100M+5GBASE-V1

Proposed Response *Response Status* **O**

Cl **00** *SC* **0** *P* *L* # 317

Gorshe, Steve Microchip

Comment Type **T** *Comment Status* **D**

SuggestedRemedy

Proposed Response *Response Status* **Z**

PROPOSED REJECT.

This comment was WITHDRAWN by the commenter.

Cl **00** *SC* **0** *P* *L* # 324

Gorshe, Steve Microchip

Comment Type **T** *Comment Status* **D**

SuggestedRemedy

Proposed Response *Response Status* **Z**

PROPOSED REJECT.

This comment was WITHDRAWN by the commenter.

Cl **00** *SC* **0** *P* *L* # 320

Gorshe, Steve Microchip

Comment Type **T** *Comment Status* **D**

SuggestedRemedy

Proposed Response *Response Status* **Z**

PROPOSED REJECT.

This comment was WITHDRAWN by the commenter.

Cl **00** *SC* **0** *P* *L* # 319

Gorshe, Steve Microchip

Comment Type **T** *Comment Status* **D**

SuggestedRemedy

Proposed Response *Response Status* **Z**

PROPOSED REJECT.

This comment was WITHDRAWN by the commenter.

Cl **00** *SC* **0** *P* *L* # 318

Gorshe, Steve Microchip

Comment Type **T** *Comment Status* **D**

SuggestedRemedy

Proposed Response *Response Status* **Z**

PROPOSED REJECT.

This comment was WITHDRAWN by the commenter.

Cl **1** *SC* **1.4** *P* **31** *L* **19** # 155

Zimmerman, George CME Consulting/ADI,APL Gp, Cisco, Infineon, OnSe

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

The terms to be defined should be in bold, including the colon.

SuggestedRemedy

Format terms to be defined at each header in bold.

Proposed Response *Response Status* **O**

Cl **1** *SC* **1.4.88** *P* **31** *L* **21** # 152

Zimmerman, George CME Consulting/ADI,APL Gp, Cisco, Infineon, OnSe

Comment Type **T** *Comment Status* **X**

Definition for XGMII could be read as implying all 3 rates.

SuggestedRemedy

Change "with these rates" to "with one of these rates"

Proposed Response *Response Status* **O**

Cl **1** *SC* **1.4.248** *P* **31** *L* **24** # 153

Zimmerman, George CME Consulting/ADI,APL Gp, Cisco, Infineon, OnSe

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

Definition for coaxial cable is OK as is.

SuggestedRemedy

No change to text, delete 1.4.248 from the draft

Proposed Response *Response Status* **O**

Cl **1** *SC* **1.4.249** *P* **31** *L* **27** # 154

Zimmerman, George CME Consulting/ADI,APL Gp, Cisco, Infineon, OnSe

Comment Type **T** *Comment Status* **X**

Definition for coaxial cable interface unnecessarily states that te medium is shared. It applies as well to point to point, unshared medium. I have reviewed all the existing uses, and they are specific to clause 11 and should be uneffected by the change.

SuggestedRemedy

Insert editing instruction to "Change 1.4.249 as shown:"
Mark "shared" in strikeout, showing deletion.

Proposed Response *Response Status* **O**

Cl **1** *SC* **1.4.250** *P* **31** *L* **31** # 156

Zimmerman, George CME Consulting/ADI,APL Gp, Cisco, Infineon, OnSe

Comment Type **T** *Comment Status* **X**

it is unlikely we will use the definition of coaxial cable section, as it is a subset of the link segment. Furhter, the definition, as is, is quite specific with regards to connectors, and the use in clause 10…

SuggestedRemedy

Delete 1.4.250 from the draft.

Proposed Response *Response Status* **O**

Cl **1** *SC* **1.4.251** *P* **31** *L* **35** # 157

Zimmerman, George — CME Consulting/ADI,APL Gp, Cisco, Infineon, OnSe

Comment Type **T** *Comment Status* **X**

The term coaxial cable segment is specific to a shared medium segment with terminators on each end (separate from the MDIs). It is unlikely we will have use for it, and if we do, we would need a different definition - so better to have a new term.

SuggestedRemedy

Delete 1.4.251 from the draft

Proposed Response *Response Status* **O**

Cl **30** *SC* **30.3.2.1.2** *P* **32** *L* **14** # 158

Zimmerman, George — CME Consulting/ADI,APL Gp, Cisco, Infineon, OnSe

Comment Type **T** *Comment Status* **X**

This is the first place that the draft needs to address the question of do we have one PHY or two, and how they might be differentiated. Suggest we draft text for each proposal in 30.3.2.
Note this will eventually need to be done in 30.5., but isn't quite as complicated.

SuggestedRemedy

Add Editor's note to 30.3.2.1.2:
"Editor's Note (to be removed prior to initial Working Group Ballot): 802.3dm will either define one PHY type or will differentiate clauses 201 and 202 to meet distinct identity. Both PHY type options are shown here. When a choice is made, this section needs to be updated."
Duplicate each reference to "Clause 200..." to read "Clause 201 ... 100 Mb/s DME ...ACT" or "Clause 202 ... 100 Mb/s PAM 2... TDD" in 30.3.2 subsections (the 6 pairs on page 32).

Proposed Response *Response Status* **O**

Cl **30** *SC* **30.5.1.1.2** *P* **33** *L* **22** # 1

Lasry, Ariel — Qualcomm Technologies Inc.

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

Typo "/" used instead of "+"

SuggestedRemedy

replace "5G/100M" with "5G+100M"

Proposed Response *Response Status* **O**

Cl **30** *SC* **30.5.1.1.2** *P* **33** *L* **24** # 2

Lasry, Ariel — Qualcomm Technologies Inc.

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

Typo "/" used instead of "+"

SuggestedRemedy

replace "5G/100M" with "5G+100M"

Proposed Response *Response Status* **O**

Cl **30** *SC* **30.5.1.1.2** *P* **33** *L* **31** # 3

Lasry, Ariel — Qualcomm Technologies Inc.

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

Typo "/" used instead of "+"

SuggestedRemedy

replace "10G/100M" with "10G+100M"

Proposed Response *Response Status* **O**

Cl **30** *SC* **30.5.1.1.2** *P* **33** *L* **33** # 4

Lasry, Ariel — Qualcomm Technologies Inc.

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

Typo "/" used instead of "+"

SuggestedRemedy

replace "10G/100M" with "10G+100M"

Proposed Response *Response Status* **O**

Cl **30** *SC* **30.6.1.1.5** *P* **33** *L* **33** # 159

Zimmerman, George — CME Consulting/ADI,APL Gp, Cisco, Infineon, OnSe

Comment Type **T** *Comment Status* **X**

Clause 202 does not appear to use auto-negotiation (clause 98 or otherwise), and hence the Auto-Negotiation attributes are specific to clause 201.

SuggestedRemedy

Change "as specified in Clause 200" to "as specified in Clause 201" at Page 33, lines 48 through 52, Page 34 Lines 5 through 8, and Page 34 Lines 15 through 18 (3 sets of 4 instances each)

Proposed Response *Response Status* **O**

Cl **45** *SC* **45.1** *P* **41** *L* **19** # 167

Zimmerman, George — CME Consulting/ADI,APL Gp, Cisco, Infineon, OnSe

Comment Type **T** *Comment Status* **X**

Inserted language could be interpreted to mean that the asymmetric phys have 'all of these rates' in one direction. Note that the same change is not needed in 46.1.3, where a diferent change is needed.

SuggestedRemedy

Change "with these rates in one direction" to "with at least one of these rates in one direction" at P41 L19, P41 L34.

Proposed Response *Response Status* **O**

Cl **45** *SC* **45.2.1.7.4** *P* **35** *L* **28** # 166

Zimmerman, George — CME Consulting/ADI,APL Gp, Cisco, Infineon, OnSe

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

Editing instruction appears to be in italics as header… (font is sans & too large)

SuggestedRemedy

Reformat instructions at P35 L28, P35 L50 using "Editing Instruction" type.

Proposed Response *Response Status* **O**

Cl **45** *SC* **45.2.1.7.4** *P* **35** *L* **37** # 160

Zimmerman, George — CME Consulting/ADI,APL Gp, Cisco, Infineon, OnSe

Comment Type **T** *Comment Status* **X**

Clause 202 does not appear to specify use of transmit/ receive fault. Therefore these TBDs can be assigned to clause 201.
(if clause 202 adds transmit/receive fault, suggest adding both the clause 201 references here, as well as the clause 202 references - that way we will have them)

SuggestedRemedy

Change TBD at page 35, line 35 to an external cross reference to 149.4.2.2
Change TBD at page 35, line 41 to 201.6.2.2
Change TBD at page 36, line 6 to 201.6.2.3
Change TBD at page 36, line 10 to an external cross reference to 149.4.2.3

Proposed Response *Response Status* **O**

Cl **45** *SC* **45.2.1.7.4** *P* **35** *L* **41** # 223

Pandey, Sujan — Velinktech

Comment Type **ER** *Comment Status* **X**

100M+2.5GMBASE-T1, ...

SuggestedRemedy

100M+2.5GBASE-T1, ...

Proposed Response *Response Status* **O**

Cl **45** *SC* **45.2.1.7.4** *P* **35** *L* **41** # 5

Lasry, Ariel — Qualcomm Technologies Inc.

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

Typo "M" in "2.5GMBASE-T1" is too much

SuggestedRemedy

replace "2.5GMBASE-T1" with "2.5GBASE-T1"

Proposed Response *Response Status* **O**

Cl **45** *SC* **45.2.1.7.4** *P* **35** *L* **43** # 6

Lasry, Ariel Qualcomm Technologies Inc.

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

Typo "M" in "5GMBASE-V1" is too much

SuggestedRemedy

replace "5GMBASE-V1" with "5GBASE-V1"

Proposed Response *Response Status* **O**

Cl **45** *SC* **45.2.1.7.4** *P* **35** *L* **43** # 224

Pandey, Sujan Velinktech

Comment Type **ER** *Comment Status* **X**

100M+5GMBASE-T1, ...

SuggestedRemedy

100M+5GBASE-T1, ...

Proposed Response *Response Status* **O**

Cl **45** *SC* **45.2.1.7.5** *P* **36** *L* **10** # 225

Pandey, Sujan Velinktech

Comment Type **ER** *Comment Status* **X**

2.5GMBASE-T1

SuggestedRemedy

2.5GBASE-T1

Proposed Response *Response Status* **O**

Cl **45** *SC* **45.2.1.7.5** *P* **36** *L* **10** # 7

Lasry, Ariel Qualcomm Technologies Inc.

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

Typo "M" in "2.5GMBASE-T1" is too much

SuggestedRemedy

replace "2.5GMBASE-T1" with "2.5GBASE-T1"

Proposed Response *Response Status* **O**

Cl **45** *SC* **45.2.1.7.5** *P* **36** *L* **12** # 226

Pandey, Sujan Velinktech

Comment Type **ER** *Comment Status* **X**

2.5GMBASE-T1

SuggestedRemedy

2.5GBASE-T1

Proposed Response *Response Status* **O**

Cl **45** *SC* **45.2.1.7.5** *P* **36** *L* **12** # 8

Lasry, Ariel Qualcomm Technologies Inc.

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

Typo "M" in "5GMBASE-V1" is too much

SuggestedRemedy

replace "5GMBASE-V1" with "5GBASE-V1"

Proposed Response *Response Status* **O**

Cl **45** *SC* **45.2.1.60f.1** *P* **37** *L* **24** # 9

Lasry, Ariel Qualcomm Technologies Inc.

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

Typo only "PMA type" is mentionned, where this applies also to PMD. This is different than the style used in 45.2.1.32.1 to 45.2.1.33.6
Similar issue is also on lines 27, 32, 35, 40, 43, 48, 51. And on page 38 lines: 4, 7, 12, 16, 20, 23, 28, 31, 36, 39, 44, 47, 52. And on Page 39 lines: 2, 7, 10

SuggestedRemedy

replace "PMA type" with "PMA/PMD type"

Proposed Response *Response Status* **O**

Cl **45** *SC* **45.2.1.60f.2** *P* **37** *L* **29** # 10

Lasry, Ariel — Qualcomm Technologies Inc.

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

Typo in sub-section title. It cannot be both T1 and V1.

SuggestedRemedy

replace "100M+10GBASE-T1/V1" with "100M+10GBASE-V1"

Proposed Response *Response Status* **O**

Cl **45** *SC* **45.2.1.214** *P* **40** *L* **7** # 11

Lasry, Ariel — Qualcomm Technologies Inc.

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

Title of Table includes only BASE-T1 type, while content also include BASE-V1 type

SuggestedRemedy

Replace "T1" with "T1/V1"

Proposed Response *Response Status* **O**

Cl **45** *SC* **45.2.1.214.2** *P* **40** *L* **39** # 12

Lasry, Ariel — Qualcomm Technologies Inc.

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

Not only the first sentence need to change. Since there is one more bit added the whole description of 45.2.1.214.2 needs to be updated with more bits and include the corresponding text for the newely defined modes.

SuggestedRemedy

Add the following to line 45: "When these bits are set to 00000, the mode of operation is 100BASE-T1. When these bits are set to 00001, the mode of operation is 1000BASE-T1. When these bits are set to 00010, the mode of operation is 10BASE-T1L. When these bits are set to 00011, the mode of operation is
10BASE-T1S. When these bits are set to 00100, the mode of operation is 2.5GBASE-T1. When these bits are set to 00101, the mode of operation is 5GBASE-T1. When these bits are set to 00110, the mode of operation is
10GBASE-T1. When these bits are set to 00111, the mode of operation is 25GBASE-T1. When these bits are set to 01000, the mode of operation is 10BASE-T1M. When these bits are set to 10000, the mode of operation is 100M+2.5GBASE-T1. When these bits are set to 10001, the mode of operation is 2.5G+100MBASE-T1. When these bits are set to 10010, the mode of operation is 100M+2.5GBASE-V1. When these bits are set to 10011, the mode of operation is 2.5G+100MBASE-V1. When these bits are set to 10100, the mode of operation is 100M+5GBASE-T1. When these bits are set to 10101, the mode of operation is 5G+100MBASE-T1. When these bits are set to 10110, the mode of operation is 100M+5GBASE-V1. When these bits are set to 10111, the mode of operation is 5G+100MBASE-V1. When these bits are set to 11000, the mode of operation is 100M+10GBASE-T1. When these bits are set to 11001, the mode of operation is 10G+100MBASE-T1. When these bits are set to 11010, the mode of operation is 100M+10GBASE-V1. When these bits are set to 11011, the mode of operation is 10G+100MBASE-V1. These bits shall be ignored when the Auto-Negotiation enable bit 7.512.12 is set to one."

Proposed Response *Response Status* **O**

Cl **46** *SC* **46.1.2** *P* **41** *L* **34** # 13

Lasry, Ariel — Qualcomm Technologies Inc.

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

The text gives the "BASE" name of the PHYs only for the symmetric PHYs and not for the Asymmetric PHYs.

SuggestedRemedy

replace: "2.5GBASE, 5GBASE, and 10GBASE PHY types (including asymmetric PHYs with these rates in one direction and 100 Mb/s in the reverse direction)" with:
"2.5GBASE, 100M+2.5GBASE, 2.5G+100MBASE, 5GBASE, 100M+5GBASE, 5G+100MBASE, 10GBASE, 100M+10GBASE and 10G+100MBASE PHY types"

Proposed Response *Response Status* **O**

Cl **46** *SC* **46.1.3** *P* **41** *L* **41** # 168

Zimmerman, George — CME Consulting/ADI,APL Gp, Cisco, Infineon, OnSe

Comment Type **T** *Comment Status* **X**

The text here isn't speaking about PHY types but rather about MAC data rates, so the added text doesn't make sense as written.

SuggestedRemedy

At P41 L41, delete "(including asymmetric PHYs with these rates in one direction and 100 Mb/s in the reverse direction)" inserted text, and implement the change (with marks inserted - sorry , it just became a mess...) to read:
The XGMII supports MAC data rates of 2.5 Gb/s, 5 Gb/s, and 10 Gb/s as defined within this clause. A compliant
device may implement any subset of these rates in at least one direction. Symmetric operation at 10 Mb/s and 100 Mb/s is supported by the MII defined in Clause 22 and operation at 1000 Mb/s by the GMII defined in Clause 35. Asymmetric operation is supported at 100 Mb/s in one direction when at least one of specified multigigabit rates is used in the other direction.

Proposed Response *Response Status* **O**

Cl **46** *SC* **46.3.2.1** *P* **42** *L* **18** # 62

Kleinwaechter, Mathias — in-tech

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

The sentence could be improved stilistically.

SuggestedRemedy

The frequency of RX_CLK may be derived from the received data or it may correspond to a nominal clock (e.g.,
TX_CLK).

Proposed Response *Response Status* **O**

Cl **46** *SC* **46.6.1** *P* **42** *L* **27** # 102

Wienckowski, Natalie — IVN Solutions LLC

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

delete as it is not needed

SuggestedRemedy

Delete: 46.6.1 Introduction

Proposed Response *Response Status* **O**

Cl **46** *SC* **46.6.2** *P* **42** *L* **29** # 103

Wienckowski, Natalie — IVN Solutions LLC

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

delete as it is not needed

SuggestedRemedy

Delete: 46.6.2 Identification

Proposed Response *Response Status* **O**

Cl **46** *SC* **46.6.3.1** *P* **42** *L* **34** # 169

Zimmerman, George — CME Consulting/ADI,APL Gp, Cisco, Infineon, OnSe

Comment Type **T** *Comment Status* **X**

A new option is needed for asymmetric PHYs, the existing text that was edited relates to MAC data rates, not PHYs, and hence isn't quite right..

SuggestedRemedy

Insert 46.6.2.3 Major capabilities/options into the draft
Insert new row at end of table (unchanged rows not shown):
Item: ASYM
Feature: Support of Asymmetric Multigigabit PHYs
Subclause 46.1.2
Value/comment: (blank)
Status: O
Support: Yes[] No[]

In 46.6.3.1:
Add editing instruction: Change PICs items G1, G2, and G3, and insert new row G3a after row G3, as shown (unchanged rows not shown):
Add table showing addition of "in at least one direction" to Value/Comment for G1, G2, and G3.
(general row format is:
Item: Gn
Feature: PHY support of x Gb/s MAC data rate
Subclause: 46.1.3
Value/Comment: Support of MAC data rate of x Gb/s /UL in at least one direction /UL
Status: PHY: O.1
Support: Yes [] N/A []

Insert new row after row for G3 in 46.6.3.1:
Item: G3a
Feature: Asymmetric support of 100 Mb/s
Subclause: 46.1.3
Value/Comment: Support MAC data rate of 100 Mb/s in one direction when at least one of 2.5 Gb/s, 5 Gb/s, or 10 Gb/s is supported in the other.
Status: ASYM:M PHY:O
Support: Yes[] N/A[]

Remove existing edits to 46.6.3.1 shown on page 43.

Proposed Response *Response Status* **O**

Cl **98** *SC* **98** *P* **43** *L* **50** # 187

Zimmerman, George — CME Consulting/ADI,APL Gp, Cisco, Infineon, OnSe

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

Big Ticket Items - PHY relationships & Auto-Neg.
If we intend to have multiple PHY types, we need a method to select between them. That means a separate sublayer above the PMA/PCS. Clause 201 uses Clause 98 auto-neg (at least partly). Even if we don't use auto-neg, but have fixed selections, we still need control from that external sub-layer and a way to select.
It is reasonable that they should be able to auto-negotiate and we could solve some of the problems and enable wider Ethernet compatibility by bringing clause 98 into the text.
Clause 98 is mentioned in clause 201, and there is some work needed to bring a new PHY type into it.
If we take another approach work similar to creating an auto-neg sublayer/protocol with priority resolution and ability to select between PHY types in other clauses is needed.

SuggestedRemedy

Bring clause 98 into the draft.
Add editor's note (to be removed prior to Working Group Ballot): Contributor's to consider whether autonegotiation should be extended to include V1 PHYs. At the moment it only applies to T1 PHYs.

Bring 98.5.1 State diagram variables into the draft, add variables:
2.5Gig+100MT1 represents that 2.5G+100MBASE PMA is the signal source
5Gig+100MT1 represents that 5G+100MBASE PMA is the signal source
10Gig+100MT1 represents that 10G+100MBASE PMA is the signal source

Bring 98B in the draft, with the following Editor's Note: (to be removed prior to Working Group ballot): Contributions encouraged to resolve priority resolution for MultiGig+100MBASE-T1 PHYs.

Proposed Response *Response Status* **O**

Cl **104** *SC* **104** *P* **43** *L* **52** # 189

Zimmerman, George — CME Consulting/ADI,APL Gp, Cisco, Infineon, OnSe

Comment Type **T** *Comment Status* **X**

Big Ticket Items - Powering
If we want to support clause 104 powering, this is where it would go. Clause 104 will require mention of the new PHY type. It may also be worth considering using clause 189's powering protocol rather than clause 104.
Additionally, we need to consider how far we want to go in specifying PoC

SuggestedRemedy

Insert clause 104 (104.1.3) into the draft, including Table 104-a from IEEE P802.3dg D2.3, with eidtiing instruction: "Change Table 104-a (inserted by IEEE Std 802.3dg-202x) as follows (unchanged rows not shown)
Show row for Type F PSE/PD, and add 2.5G+100MBASE-T1, 5G+100MBASE-T1, 10G+100MBASE-T1, and the 100M+xG... counterparts to the Compatible PHYs column.

Add Editor's Note (to be removed prior to Working Group Ballot): Need to consider whether power detection and classification is desired for Power over Coax, and whether to extend clause 104 (or 189) to support PoC.

Proposed Response *Response Status* **O**

Cl **200** *SC* **200** *P* **44** *L* **5** # 14

Lasry, Ariel — Qualcomm Technologies Inc.

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

Typo "100M+2.5GMBASE-T1" 1 "M" too much after the "G"

SuggestedRemedy

replace "100M+2.5GMBASE-T1" with: 100M+2.5GBASE-T1"

Proposed Response *Response Status* **O**

Cl **200** *SC* **200** *P* **44** *L* **9** # 64

Kleinwaechter, Mathias — in-tech

Comment Type **ER** *Comment Status* **X**

typo

SuggestedRemedy

100M+5GBASE-V1

Proposed Response *Response Status* **O**

Cl **200** *SC* **200** *P* **44** *L* **9** # 15

Lasry, Ariel — Qualcomm Technologies Inc.

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

Typo "100M+5GMBASE-V1" 1 "M" too much after the "G"

SuggestedRemedy

replace "100M+5GMBASE-V1" with "100M+5GBASE-V1"

Proposed Response *Response Status* **O**

Cl **200** *SC* **200** *P* **44** *L* **9** # 295

Razavi, Alireza — Infineon

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

mis-spelling (extra M after G) : "5GMBASE" should be replaced by 5GBASE

SuggestedRemedy

see comment

Proposed Response *Response Status* **O**

Cl **200** *SC* **200.1.1** *P* **44** *L* **34** # 104

Wienckowski, Natalie — IVN Solutions LLC

Comment Type **T** *Comment Status* **X**

missing text

SuggestedRemedy

Change: PHY_S HS_TX to PHY_D
To: PHY_S HS_TX to PHY_D HS_RX
Make the same change in 201.1.1 and 202.1.1

Proposed Response *Response Status* **O**

Cl **200** *SC* **200.1.2** *P* **45** *L* **16** # 105

Wienckowski, Natalie — IVN Solutions LLC

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

The PHY/PMD types should be part of the Nomenclature subclause.

SuggestedRemedy

Delete: 200.1.2 PHY/PMD types
Change italicized text to: The following table depicts the characterisitics of each of the 12 PHY types,
x+y depicts the transmit and recieve speeds, where x is the transmit speed and y is the receive speed
T1 - single shielded balanced pair of conductors (SBP)
V1 - single coaxial cable (Coax)
Delete all italicized text below the table.
Make the same change in 201.1.2 and 202.1.2.

Proposed Response *Response Status* **O**

Cl **200** *SC* **200.1.2** *P* **45** *L* **25** # 171

Zimmerman, George — CME Consulting/ADI,APL Gp, Cisco, Infineon, OnSe

Comment Type **T** *Comment Status* **X**

We don't specify the cable type, but we do specify the transmission medium. Further, "SBP" isn't a defined abbreviation, neither is Coax". It also doesn't make sense to define them - the PHY doesn't care whether the medium is constructed coaxially, with or without a shield. It cares about the fact that the medium is differential or unbalanced. these PHYs could be used on balanced or unbalanced board traces as well.

Same comment applies to Table 201-2 and 202-2.

SuggestedRemedy

Change "Cable Type" to "Medium" at P45 L26 (Table 200-2), P73 L41 (Table 201-2), and P144 L43, (Table 202-2)
In all relevant entries for Table 200-2, 201-2, and 202-2, Change "SBP" to "100 Ohm Balanced differential pair" and Change "Coax" to "Unbalanced medium"

Proposed Response *Response Status* **O**

Cl **200** *SC* **200.1.2** *P* **45** *L* **40** # 16

Lasry, Ariel — Qualcomm Technologies Inc.

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

Typo "100M+5GMBASE-V1" 1 "M" too much after the "G"

SuggestedRemedy

replace "100M+5GMBASE-V1" with "100M+5GBASE-V1"

Proposed Response *Response Status* **O**

Cl **200** *SC* **200.1.2** *P* **45** *L* **47** # 170

Zimmerman, George — CME Consulting/ADI,APL Gp, Cisco, Infineon, OnSe

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

The note (italicized text) after Table 200-1 is already in the draft in 200.1.1

SuggestedRemedy

Delete P45 L46 through P46 L2

Proposed Response *Response Status* **O**

Cl **200** *SC* **200.1.2** *P* **45** *L* **48** # 17

Lasry, Ariel — Qualcomm Technologies Inc.

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

Lines 48 to 54 and Line 1 of page 46 are duplicates of lines 1-12

SuggestedRemedy

remove Lines 48 to 54 and Line 1 of page 46

Proposed Response *Response Status* **O**

Cl **200** *SC* **200.1.4.1** *P* **46** *L* **14** # 172

Zimmerman, George — CME Consulting/ADI,APL Gp, Cisco, Infineon, OnSe

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

It seems that some edits to the draft from the new nomenclature remain in the clean copy.

SuggestedRemedy

Delete struck-out Red text, (and "1" on P46 29), and remove underline and green color to new text on P46, 47, 51, 52, 55, 58. 60

Proposed Response *Response Status* **O**

Cl **200** *SC* **200.1.4.4** *P* **46** *L* **30** # 18

Lasry, Ariel — Qualcomm Technologies Inc.

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

Typo: "1" at the end of the line is too much

SuggestedRemedy

replace "(LS_PATH)1" with "(LS_PATH)"

Proposed Response *Response Status* **O**

Cl **200** *SC* **200.1.5** *P* **46** *L* **44** # 106

Wienckowski, Natalie — IVN Solutions LLC

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

typo

SuggestedRemedy

change: high speed pathS_PATH)
To: high speed path (HS_PATH)

Proposed Response *Response Status* **O**

Cl **200** *SC* **200.1.5** *P* **46** *L* **44** # 19

Lasry, Ariel — Qualcomm Technologies Inc.

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

Typo

SuggestedRemedy

replace "pathS_PATH)" with "path (HS_PATH)"

Proposed Response *Response Status* **O**

Cl **200** *SC* **200.4.2.2.17** *P* **54** *L* **38** # 328

Johnson, Samuel — Infineon

Comment Type **T** *Comment Status* **X**

Mapping of logic0 -> +1 and logic1 -> -1 seems non-intuitive

SuggestedRemedy

If this is used by PAM2 in other standards, then leave unchanged. Otherwide, propose
Logic0 -> -1
Logic1 -> +1

Proposed Response *Response Status* **O**

Cl **200** *SC* **200.5.1** *P* **55** *L* **50** # 20

Lasry, Ariel — Qualcomm Technologies Inc.

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

I assume "MII" is editorial typo, as the group agreed to use XGMII for both directions

SuggestedRemedy

replace "MII" with "XGMII"

Proposed Response *Response Status* **O**

Cl **200** *SC* **200.11** *P* **64** *L* **15** # 165

Zimmerman, George — CME Consulting/ADI,APL Gp, Cisco, Infineon, OnSe

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

The term link segment used in clauses 200, 201, and 202 either refers to balanced pairs or to an unbalanced coax link segment. The section should say "used in this subclause", or, better yet, just delete the sentence - it adds little value.

SuggestedRemedy

Delete the sentence "The term link segment used in this clause…" from the first paragraph of 200.11, 200.12, 201.11, 201.12, 202.7, and 202.8.

Proposed Response *Response Status* **O**

Cl **200** *SC* **200.11.1** *P* **64** *L* **21** # 227

Pandey, Sujan Velinktech

Comment Type **ER** *Comment Status* **X**

Parameters The transmission ...

SuggestedRemedy

The transmission ...

Proposed Response *Response Status* **O**

Cl **200** *SC* **200.11.1** *P* **64** *L* **21** # 173

Zimmerman, George CME Consulting/ADI,APL Gp, Cisco, Infineon, OnSe

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

There is an extra word hanging at the front of the sentence.

SuggestedRemedy

Delete "Parameters "

Proposed Response *Response Status* **O**

Cl **200** *SC* **200.12.2** *P* **65** *L* **44** # 174

Zimmerman, George CME Consulting/ADI,APL Gp, Cisco, Infineon, OnSe

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

The notion of crosstalk is independent of the medium type, and will generally come at ganged connector interfaces even on shielded media. The titles appear to be appropriate for coax as well as differential paired media.

SuggestedRemedy

Delete note at P65 L44

Proposed Response *Response Status* **O**

Cl **200** *SC* **200.13.** *P* **66** *L* **1** # 164

Zimmerman, George CME Consulting/ADI,APL Gp, Cisco, Infineon, OnSe

Comment Type **T** *Comment Status* **X**

Clauses 201 & 202 each have this same form, but different approaches to the upper frequency. If we have one PHY or the other, we can just copy from that clause. If we have 2 PHYs they will have different specifications for this. Suggest there is no value having this specification in clause 200.

SuggestedRemedy

Delete 200.13 content (and subclause) in its entirety. (leave placeholder)

Proposed Response *Response Status* **O**

Cl **200** *SC* **200.13.2.1** *P* **49** *L* **17** # 63

Kleinwaechter, Mathias in-tech

Comment Type **ER** *Comment Status* **X**

The sentence has a grammatical issue. "characteristic is impedance" -> the "is" must be deleted.

SuggestedRemedy

For balanced cabling, a nominal differential characteristic impedance of 100 Ω is used, and for coaxial cabling a nominal characteristic impedance of 50 Ω is used.

Proposed Response *Response Status* **O**

Cl **200** *SC* **200.13.2.1** *P* **66** *L* **15** # 228

Pandey, Sujan Velinktech

Comment Type **ER** *Comment Status* **X**

The differential impedence at the MDI for each transmit/receiver channel ...

SuggestedRemedy

The differential impedence at the MDI for each transmit/receive channel ...

Proposed Response *Response Status* **O**

Cl **200** *SC* **200.13.2.1** *P* **66** *L* **18** # 175

Zimmerman, George — CME Consulting/ADI,APL Gp, Cisco, Infineon, OnSe

Comment Type **T** *Comment Status* **X**

It isn't reasonable to include coaxial cabling in a section where you are talking about the T1 interface (even though later the coax sectioin references this). Technically, the interface to the medium in a coax, unbalanced case will be different than it is for a differential balanced case - in addition to the simple fact that the return loss is a 50 ohm impedance for coax, and needs to be specified separately. Separating the two will force the task force to discuss the technical principles.

SuggestedRemedy

Change the second sentence of 200.13.2.1 to "For the -T1 PMD, a nominal differential characteristic is impedance of
100 Ω is used."
Copy 200.13.2.1 to 200.14.2.1 (including the plot), replacing "The MDI return loss for coax cables is as specified in 200.13.2.1.", changing "T1" to "V1" in the 2nd and third paragraphs, and changing the second sentence of the first paragraph to "For the -V1 PMD, a nominal characteristic impedance of 50 Ω is used."

Proposed Response *Response Status* **O**

Cl **200** *SC* **200.13.2.1** *P* **66** *L* **35** # 161

Zimmerman, George — CME Consulting/ADI,APL Gp, Cisco, Infineon, OnSe

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

The Note regarding Fmax should be an editor's note. I note that clauses 201 and 202 each have this same equation, and 201 scales with Fmax, but 202 does not - suggesting there is no agreement on this point

SuggestedRemedy

replace "Note… established." at line 35 with "Editor's Note (to be removed prior to Working Group Ballot): Commenters to consider what Fmax should be, and whether it should scale. See clauses 201 and 202 for differences."

Proposed Response *Response Status* **O**

Cl **200** *SC* **200.17** *P* **52** *L* **3** # 65

Kleinwaechter, Mathias — in-tech

Comment Type **ER** *Comment Status* **X**

typo

SuggestedRemedy

100M+.25GBASE-V1

Proposed Response *Response Status* **O**

Cl **200** *SC* **200.17** *P* **52** *L* **5** # 66

Kleinwaechter, Mathias — in-tech

Comment Type **ER** *Comment Status* **X**

typo

SuggestedRemedy

100M+5GBASE-V1

Proposed Response *Response Status* **O**

Cl **200** *SC* **200.17** *P* **69** *L* **3** # 21

Lasry, Ariel — Qualcomm Technologies Inc.

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

Typo "100M+2.5GMBASE-T1" 1 "M" too much after the "G"

SuggestedRemedy

replace "100M+2.5GMBASE-T1" with: 100M+2.5GBASE-T1"

Proposed Response *Response Status* **O**

Cl **200** *SC* **200.17** *P* **69** *L* **5** # 22

Lasry, Ariel — Qualcomm Technologies Inc.

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

Typo "100M+5GMBASE-V1" 1 "M" too much after the "G"

SuggestedRemedy

replace "100M+5GMBASE-V1" with "100M+5GBASE-V1"

Proposed Response *Response Status* **O**

Cl **200** *SC* **200.17.1** *P* **69** *L* **13** # 23

Lasry, Ariel Qualcomm Technologies Inc.

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

Typo "100M+2.5GMBASE-T1" 1 "M" too much after the "G"

SuggestedRemedy

replace "100M+2.5GMBASE-T1" with: 100M+2.5GBASE-T1"

Proposed Response *Response Status* **O**

Cl **200** *SC* **200.17.1** *P* **69** *L* **15** # 24

Lasry, Ariel Qualcomm Technologies Inc.

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

Typo "100M+5GMBASE-V1" 1 "M" too much after the "G"

SuggestedRemedy

replace "100M+5GMBASE-V1" with "100M+5GBASE-V1"

Proposed Response *Response Status* **O**

Cl **200** *SC* **200.17.2.2** *P* **53** *L* **25** # 67

Kleinwaechter, Mathias in-tech

Comment Type **ER** *Comment Status* **X**

typo

SuggestedRemedy

100M+.25GBASE-V1

Proposed Response *Response Status* **O**

Cl **200** *SC* **200.17.2.2** *P* **53** *L* **28** # 68

Kleinwaechter, Mathias in-tech

Comment Type **ER** *Comment Status* **X**

typo

SuggestedRemedy

100M+5GBASE-V1

Proposed Response *Response Status* **O**

Cl **200** *SC* **200.17.2.2** *P* **70** *L* **25** # 25

Lasry, Ariel Qualcomm Technologies Inc.

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

Typo "100M+2.5GMBASE-T1" 1 "M" too much after the "G"

SuggestedRemedy

replace "100M+2.5GMBASE-T1" with: 100M+2.5GBASE-T1"

Proposed Response *Response Status* **O**

Cl **200** *SC* **200.17.2.2** *P* **70** *L* **28** # 26

Lasry, Ariel Qualcomm Technologies Inc.

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

Typo "100M+5GMBASE-V1" 1 "M" too much after the "G"

SuggestedRemedy

replace "100M+5GMBASE-V1" with "100M+5GBASE-V1"

Proposed Response *Response Status* **O**

Cl **200** *SC* **200.17.3** *P* **53** *L* **53** # 69

Kleinwaechter, Mathias in-tech

Comment Type **ER** *Comment Status* **X**

typo

SuggestedRemedy

100M+.25GBASE-V1

Proposed Response *Response Status* **O**

Cl **200** *SC* **200.17.3** *P* **54** *L* **1** # 70

Kleinwaechter, Mathias in-tech

Comment Type **ER** *Comment Status* **X**

typo

SuggestedRemedy

100M+5GBASE-V1

Proposed Response *Response Status* **O**

Cl **200** *SC* **200.17.4** *P* **70** *L* **53** # 27

Lasry, Ariel Qualcomm Technologies Inc.

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

Typo "100M+2.5GMBASE-T1" 1 "M" too much after the "G"

SuggestedRemedy

replace "100M+2.5GMBASE-T1" with: 100M+2.5GBASE-T1"

Proposed Response *Response Status* **O**

Cl **200** *SC* **200.17.4** *P* **71** *L* **1** # 28

Lasry, Ariel Qualcomm Technologies Inc.

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

Typo "100M+5GMBASE-V1" 1 "M" too much after the "G"

SuggestedRemedy

replace "100M+5GMBASE-V1" with "100M+5GBASE-V1"

Proposed Response *Response Status* **O**

Cl **201** *SC* **201** *P* **72** *L* **3** # 29

Lasry, Ariel Qualcomm Technologies Inc.

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

Typo "100M+2.5GMBASE-T1" 1 "M" too much after the "G"

SuggestedRemedy

replace "100M+2.5GMBASE-T1" with: 100M+2.5GBASE-T1"

Proposed Response *Response Status* **O**

Cl **201** *SC* **201** *P* **72** *L* **6** # 30

Lasry, Ariel Qualcomm Technologies Inc.

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

Typo "100M+5GMBASE-V1" 1 "M" too much after the "G"

SuggestedRemedy

replace "100M+5GMBASE-V1" with "100M+5GBASE-V1"

Proposed Response *Response Status* **O**

Cl **201** *SC* **201.1.1** *P* **72** *L* **39** # 298

Razavi, Alireza Infineon

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

"at receives at y speed" should be replaced by " and recieves at y speed"; grammatical error.

SuggestedRemedy

see comment

Proposed Response *Response Status* **O**

Cl **201** *SC* **201.1.1** *P* **72** *L* **39** # 229

Pandey, Sujan Velinktech

Comment Type **ER** *Comment Status* **X**

speed, where x+y indicates the PHY transmits at “x” speed at receives at “y” speed

SuggestedRemedy

speed, where x+y indicates the PHY transmits at “x” speed and receives at “y” speed

Proposed Response *Response Status* **O**

Cl **201** *SC* **201.1.1** *P* **72** *L* **42** # 299

Razavi, Alireza Infineon

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

HS_RX' is missing after 'PHY_D'

SuggestedRemedy

see comment

Proposed Response *Response Status* **O**

Cl **201** *SC* **201.1.1** *P* **72** *L* **48** # 297

Razavi, Alireza Infineon

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

PHY_D and PHY_S notations are not self-descriptive.

SuggestedRemedy

PHY_D is replaced by LSHS, and PHY_S is replaced by HSLS

Proposed Response *Response Status* **O**

Cl **201** *SC* **201.1.1** *P* **73** *L* **12** # 176

Zimmerman, George — CME Consulting/ADI,APL Gp, Cisco, Infineon, OnSe

Comment Type **T** *Comment Status* **X**

inappropriate use of "shall" - requirement on the reader.

SuggestedRemedy

Change the second sentence of the paragraph starting on line 11 (Additionally…) to "When incorporating Clause 149 requirements which use the scaling factor "S" by reference, refer to Table 201-1 rather than Table 149-1."

Proposed Response *Response Status* **O**

Cl **201** *SC* **201.1.4** *P* **74** *L* **22** # 182

Zimmerman, George — CME Consulting/ADI,APL Gp, Cisco, Infineon, OnSe

Comment Type **T** *Comment Status* **X**

The requirement that optional autoneg shall meet clause 98 is missing - but autoneg is included elsewhere in clause 201. In clause 149 it went in this section.

SuggestedRemedy

Add text to 201.1.4:
Auto-Negotiation (Clause 98) may optionally be used by MultiG+100M/100M+MultiGBASE-T1/V1 devices to detect the abilities (modes of operation) supported by the device at the other end of a link segment, determine common abilities, and configure for normal operation. Auto-Negotiation is performed upon link startup through the use of half-duplex differential Manchester encoding. The implementation of the Auto-Negotiation function is optional. If Auto-Negotiation is implemented, it shall meet the requirements of Clause 98.

Proposed Response *Response Status* **O**

Cl **201** *SC* **201.1.4** *P* **74** *L* **23** # 183

Zimmerman, George — CME Consulting/ADI,APL Gp, Cisco, Infineon, OnSe

Comment Type **T** *Comment Status* **X**

The description of leader/follower negotiation formerly went here.

SuggestedRemedy

Add the following text (after the autoneg text if the previous comment is implemented):
A MultiG+100M/100M+MultiGBASE-T1/V1 PHY shall be capable of operating as LEADER or FOLLOWER, per runtime configuration. A LEADER PHY uses a local clock to determine the timing of transmitter operations. A FOLLOWER PHY recovers the clock from the received signal and uses it to determine the timing of transmitter operations. When Auto-Negotiation is used, the LEADER-FOLLOWER relationship between two devices sharing a link segment is established during Auto-Negotiation (see Clause 98). If Auto-Negotiation is not used, a LEADER-FOLLOWER relationship shall be established by management or hardware configuration of the PHYs, and the LEADER and FOLLOWER are synchronized by the PHY Link Synchronization function in the PHY (see 201.7.3).
NOTE—Annex K describes that the optional alternative terminology "leader" "follower" was formerly known as “master” and “slave”.

Proposed Response *Response Status* **O**

Cl **201** *SC* **201.1.4** *P* **75** *L* **7** # 207

Abedinzadeh, Bizhan — Infineon

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

Quiet-refresh signaling is not needed for non-echo-cancelled PHYs

SuggestedRemedy

delete tx_lpi_active signal from Figure 201-1

Proposed Response *Response Status* **O**

Cl **201** *SC* **201.1.4** *P* **75** *L* **7** # 300

Razavi, Alireza — Infineon

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

From figure 201-1, tx_lpi_active to be remobed as EEE is not defined yet

SuggestedRemedy

see comment

Proposed Response *Response Status* **O**

Cl **201** *SC* **201.1.4** *P* **75** *L* **32** # 343

Jonsson, Ragnar — Infineon

Comment Type **T** *Comment Status* **X**

Missing LSS Tx path

SuggestedRemedy

Add LSS Tx Path

Proposed Response *Response Status* **O**

Cl **201** *SC* **201.1.4** *P* **75** *L* **49** # 31

Lasry, Ariel — Qualcomm Technologies Inc.

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

Typo missing "HS_TX" before "PMA TRANSMIT"

SuggestedRemedy

add "HS_TX " before "PMA TRANSMIT"

Proposed Response *Response Status* **O**

Cl **201** *SC* **201.1.4** *P* **75** *L* **49** # 177

Zimmerman, George — CME Consulting/ADI,APL Gp, Cisco, Infineon, OnSe

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

typo. "received clock signal back the PMA TRANSMIT" - same typo on NOTE 1 on Figure 201-1 and 201-2 (note - these are also clause 149 errors)

SuggestedRemedy

Change "back" to "by" in NOTE 1 on Figures 201-1 and 201-2.

Proposed Response *Response Status* **O**

Cl **201** *SC* **201.1.4** *P* **75** *L* **50** # 179

Zimmerman, George — CME Consulting/ADI,APL Gp, Cisco, Infineon, OnSe

Comment Type **T** *Comment Status* **X**

NOTE 2 is incorrect and misleading. There are no functions shown with dashed lines, and the signals are required if EEE is provided - they aren't optional in and of themselves. (note - these are also clause 149 errors)

SuggestedRemedy

Change NOTE 2 to read: "rx_lpi_active and alert_detect are only required when optional EEE capability is implemented."

Proposed Response *Response Status* **O**

Cl **201** *SC* **201.1.4** *P* **76** *L* **33** # 301

Razavi, Alireza — Infineon

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

From figure 201-2, rx_lpi_active, aleret_detect to be remobed as EEE is not defined yet

SuggestedRemedy

see comment

Proposed Response *Response Status* **O**

Cl **201** *SC* **201.1.4** *P* **76** *L* **33** # 208

Abedinzadeh, Bizhan — Infineon

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

Quiet-refresh signaling is not needed for non-echo-cancelled PHYs

SuggestedRemedy

delete rx_lpi_active and alert_detect signals from Figure 201-2

Proposed Response *Response Status* **O**

Cl **201** *SC* **201.1.4** *P* **76** *L* **41** # 344

Jonsson, Ragnar Infineon

Comment Type **T** *Comment Status* **X**

Clock recovery is optional for leader

SuggestedRemedy

Mark "Clock Recovery" optional

Proposed Response *Response Status* **O**

Cl **201** *SC* **201.1.4** *P* **76** *L* **49** # 32

Lasry, Ariel Qualcomm Technologies Inc.

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

Typo missing "LS_TX" before "PMA TRANSMIT"

SuggestedRemedy

add "LS_TX " before "PMA TRANSMIT"

Proposed Response *Response Status* **O**

Cl **201** *SC* **201.1.4** *P* **76** *L* **50** # 178

Zimmerman, George CME Consulting/ADI,APL Gp, Cisco, Infineon, OnSe

Comment Type **T** *Comment Status* **X**

NOTE 2 is incorrect and misleading. There is only one signal shown with a dashed line, and it is required if EEE is provided - it isn't optional in and of itself. (note - these are also clause 149 errors)

SuggestedRemedy

Change NOTE 2 to read: "tx_lpi_active is only required when optional EEE capability is implemented."

Proposed Response *Response Status* **O**

Cl **201** *SC* **201.1.4.1** *P* **77** *L* **11** # 191

van Dyck, Peter Infineon

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

Not a proper sentence

SuggestedRemedy

The HS_PATH contains the PCS functions as specified in 149.3,…

Proposed Response *Response Status* **O**

Cl **201** *SC* **201.1.4.2** *P* **76** *L* **18** # 108

Wang, Frank Realtek Semiconductor Corp.

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

grammar

SuggestedRemedy

change "TXD<31:0>, TXC<3:0>" to "TXD<31:0> and TXC<3:0>"

Proposed Response *Response Status* **O**

Cl **201** *SC* **201.1.4.2** *P* **76** *L* **23** # 109

Wang, Frank Realtek Semiconductor Corp.

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

typo

SuggestedRemedy

change "Reserved" to "reserved"

Proposed Response *Response Status* **O**

Cl **201** *SC* **201.1.4.2** *P* **76** *L* **26** # 110

Wang, Frank Realtek Semiconductor Corp.

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

wording

SuggestedRemedy

change "low data rate direction" to "low speed path" or "LS_PATH"

Proposed Response *Response Status* **O**

Cl **201** *SC* **201.1.4.2** *P* **77** *L* **16** # 33

Lasry, Ariel — Qualcomm Technologies Inc.

Comment Type **T** *Comment Status* **X**

Missing text similar to the first paragraph of 201.1.4.1. Needed to identify the coupling to XGMII also with the other PHYs

SuggestedRemedy

Add as first paragraph of 201.1.4.2:
"For the low speed path, the LS_TX and LS_RX PCS couples a 10 Gigabit Media Independent Interface (XGMII), as specified in Clause 46, to the 100M+2.5GBASE-T1/V1, 100M+5GBASE-T1/V1, or 100M+10GBASE-T1/V1 Physical Medium Attachment (PMA) sublayer. In addition to the normal mode of operation, the PCS supports a training mode. Furthermore, the PCS contains a management interface. The LS_TX PCS is in the PHY_D and the LS_RX PCS is in the PHY_S."

Proposed Response *Response Status* **O**

Cl **201** *SC* **201.1.4.2** *P* **77** *L* **24** # 72

Maguire, Valerie — Copperopolis; aff'l w/ CME Consulting, Microchip, an

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

There are two different ways that RS-FEC encoding is referenced throughout the draft, parent document, and related published amendments. I believe the encoding should be structured as RS-FEC(x,y,z) - witth no space between 'FEC' and '('. Editor may additionally wish to consider submitting a Maintenance Request to harmonize usage across all documents.

SuggestedRemedy

Grant Editorial license to replace occurrences of RS-FEC (x,y,etc.) with RS-FEC(x,y,etc.) throughout the draft.

Proposed Response *Response Status* **O**

Cl **201** *SC* **201.1.4.2** *P* **77** *L* **25** # 302

Razavi, Alireza — Infineon

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

word Finally should be removed

SuggestedRemedy

see comment

Proposed Response *Response Status* **O**

Cl **201** *SC* **201.1.4.2** *P* **77** *L* **27** # 34

Lasry, Ariel — Qualcomm Technologies Inc.

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

wrong cross reference. Low data rate PCS transmit functions are described in 201.4.2.2

SuggestedRemedy

replace cross reference to "201.2.2.2" with a cross reference to "201.4.2.2"

Proposed Response *Response Status* **O**

Cl **201** *SC* **201.1.4.2** *P* **77** *L* **39** # 192

van Dyck, Peter — Infineon

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

Wrong reference: (see 201.3.5.2)

SuggestedRemedy

(see 201.4.5)

Proposed Response *Response Status* **O**

Cl **201** *SC* **201.1.4.2** *P* **77** *L* **39** # 345

Jonsson, Ragnar — Infineon

Comment Type **T** *Comment Status* **X**

EEE should be removed

SuggestedRemedy

Remove all reference to EEE

Proposed Response *Response Status* **O**

Cl **201** *SC* **201.1.4.2** *P* **77** *L* **40** # 193

van Dyck, Peter — Infineon

Comment Type **T** *Comment Status* **X**

"such as EEE and OAM" EEE should be removed

SuggestedRemedy

Replace with "such as OAM"

Proposed Response *Response Status* **O**

Cl **201** *SC* **201.1.4.2** *P* **77** *L* **40** # 276

Razavi, Alireza Infineon

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

remove EEE, as it is not defined

SuggestedRemedy

Proposed Response *Response Status* **O**

Cl **201** *SC* **201.1.4.3** *P* **76** *L* **48** # 111

Wang, Frank Realtek Semiconductor Corp.

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

wording: insert "shielded" between "single" and "balanced"
If this comment is accepted, many places need to be inserted.

SuggestedRemedy

change "a single balanced pair of conductors" to "a single shielded balanced pair of conductors"

Proposed Response *Response Status* **O**

Cl **201** *SC* **201.1.4.3** *P* **76** *L* **52** # 113

Wang, Frank Realtek Semiconductor Corp.

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

typo

SuggestedRemedy

change "x" to "×"

Proposed Response *Response Status* **O**

Cl **201** *SC* **201.1.4.3** *P* **76** *L* **52** # 112

Wang, Frank Realtek Semiconductor Corp.

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

typo: check how many spaces are there between "provides" and "communications"

SuggestedRemedy

change "provides communications" to "provides communications"

Proposed Response *Response Status* **O**

Cl **201** *SC* **201.1.4.3** *P* **77** *L* **3** # 114

Wang, Frank Realtek Semiconductor Corp.

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

wording:
When talking about all PHYs, regardless of transmit speed or cable type, use:
MultiG+100M/100M+MultiGBASE-T1/V1

SuggestedRemedy

change "PHY" to "MultiG+100M/100M+MultiGBASE-T1/V1"

Proposed Response *Response Status* **O**

Cl **201** *SC* **201.1.4.3** *P* **78** *L* **2** # 346

Jonsson, Ragnar Infineon

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

Autoneg is optional

SuggestedRemedy

Clarify that Autoneg is optional, by putting the word "optional" before Autoneg

Proposed Response *Response Status* **O**

Cl **201** *SC* **201.1.4.4** *P* **78** *L* **18** # 347

Jonsson, Ragnar Infineon

Comment Type **T** *Comment Status* **X**

EEE should be removed

SuggestedRemedy

Remove all reference to EEE

Proposed Response *Response Status* **O**

Cl **201** *SC* **201.1.4.5** *P* **78** *L* **28** # 348

Jonsson, Ragnar Infineon

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

Link Syncronization is not half-duplex

SuggestedRemedy

Remove text about Link Sync beeing half-duplex

Proposed Response *Response Status* **O**

Cl **201** *SC* **201.1.5** *P* **78** *L* **49** # 349

Jonsson, Ragnar Infineon

Comment Type **T** *Comment Status* **X**

EEE should be removed

SuggestedRemedy

Remove item "i)" from the list

Proposed Response *Response Status* **O**

Cl **201** *SC* **201.1.5** *P* **78** *L* **50** # 194

van Dyck, Peter Infineon

Comment Type **T** *Comment Status* **X**

Non echo-cancelled PHY doesn't need quiet-refresh signaling to be energy efficient

SuggestedRemedy

Delete item i) (P78 L50)

Proposed Response *Response Status* **O**

Cl **201** *SC* **201.1.5** *P* **78** *L* **51** # 277

Razavi, Alireza Infineon

Comment Type **T** *Comment Status* **X**

LPI mode is not defined in Clause 201, so PHY has 2 basic modes not 3 basic modes

SuggestedRemedy

Remove optional LPI signaling objective, or add full normative definition of LPI operation for these PHYs.

Proposed Response *Response Status* **O**

Cl **201** *SC* **201.1.5** *P* **78** *L* **52** # 195

van Dyck, Peter Infineon

Comment Type **T** *Comment Status* **X**

Non echo-cancelled PHY doesn't need quiet-refresh signaling to be energy efficient

SuggestedRemedy

Change "The PHY may operate in three basic modes: the normal data mode, the training mode, or an optional LPI
mode." to read "The PHY may operate in two basic modes: the normal data mode or the training mode."

Proposed Response *Response Status* **O**

Cl **201** *SC* **201.1.5** *P* **78** *L* **52** # 350

Jonsson, Ragnar Infineon

Comment Type **T** *Comment Status* **X**

EEE should be removed

SuggestedRemedy

Only two modes and remove LPI reference

Proposed Response *Response Status* **O**

Cl **201** *SC* **201.1.6** *P* **79** *L* **26** # 351

Jonsson, Ragnar — Infineon

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

Missing figre

SuggestedRemedy

Add figure referenced in this line

Proposed Response *Response Status* **O**

Cl **201** *SC* **201.1.6** *P* **79** *L* **26** # 278

Razavi, Alireza — Infineon

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

remove this pharase '(See Figure <REF>)'

SuggestedRemedy

see comment

Proposed Response *Response Status* **O**

Cl **201** *SC* **201.1.6** *P* **79** *L* **26** # 268

Lo, William — Axonne Inc

Comment Type **T** *Comment Status* **X**

No need to have a figure and it is going to be difficult and not instructive even with a drawing showing the RS-Frame encoded as DME. The stream of DME symbols will be self evident with a combination of 201.4.2.2.16, Figure 201-16, and the output of the data path in Figure 201-11

SuggestedRemedy

Remove (See Figure <REF>)

Proposed Response *Response Status* **O**

Cl **201** *SC* **201.2** *P* **78** *L* **48** # 115

Wang, Frank — Realtek Semiconductor Corp.

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

wording

SuggestedRemedy

change "PHY_S and PHY_D" to "MultiG+100M/100M+MultiGBASE-T1/V1"

Proposed Response *Response Status* **O**

Cl **201** *SC* **201.2** *P* **78** *L* **50** # 116

Wang, Frank — Realtek Semiconductor Corp.

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

wording

SuggestedRemedy

change "PHY_S and PHY_D" to "MultiG+100M/100M+MultiGBASE-T1/V1 transfer"

Proposed Response *Response Status* **O**

Cl **201** *SC* **201.2.1.1.3** *P* **80** *L* **41** # 35

Lasry, Ariel — Qualcomm Technologies Inc.

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

Is the PMA Link Monitor function reference to 149.4.2.5 correct? There is a specific Link Monitor function under 201.7.2 which is specific for ACT

SuggestedRemedy

change the reference to "201.7.2"

Proposed Response *Response Status* **O**

Cl **201** *SC* **201.2.1.2.1** *P* **81** *L* **8** # 196

van Dyck, Peter — Infineon

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

"US_TX link is established"

SuggestedRemedy

Replace with "PHY link is established"

Proposed Response *Response Status* **O**

Cl **201** *SC* **201.2.1.2.1** *P* **81** *L* **8** # 36

Lasry, Ariel — Qualcomm Technologies Inc.

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

"US_TX" is not defined.

SuggestedRemedy

change to "MultiG+100M/100+MultiGBASE-T1/V1"

Proposed Response *Response Status* **O**

Cl **201** *SC* **201.2.2** *P* **80** *L* **24** # 117

Wang, Frank — Realtek Semiconductor Corp.

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

wording: these service primitives are not only for LS_PATH

SuggestedRemedy

change "The low speed path" to "MultiG+100M/100M+MultiGBASE-T1/V1"

Proposed Response *Response Status* **O**

Cl **201** *SC* **201.2.2** *P* **81** *L* **41** # 37

Lasry, Ariel — Qualcomm Technologies Inc.

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

Missing text for optional EEE related primitives which are shown in Figures 201-3 and 201-4. Also visible in Figures 201-1 and 201-2

SuggestedRemedy

Copy missing lines from 149.2.2

Proposed Response *Response Status* **O**

Cl **201** *SC* **201.2.2** *P* **82** *L* # 197

van Dyck, Peter — Infineon

Comment Type **T** *Comment Status* **X**

Primitive PMA_PCS_TX_LPI STATUS.request is not defined or needed.

SuggestedRemedy

Remove PMA_PCS_TX_LPI_STATUS.request from Figure 201-3

Proposed Response *Response Status* **O**

Cl **201** *SC* **201.2.2** *P* **82** *L* **3** # 352

Jonsson, Ragnar — Infineon

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

PMA_LINK signals are optional

SuggestedRemedy

Mark PMA_LINK.request and indication optional

Proposed Response *Response Status* **O**

Cl **201** *SC* **201.2.2** *P* **82** *L* **24** # 279

Razavi, Alireza — Infineon

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

From figure 201-3, PMA_PCS_TX_LPI_STATUS_request to be remobed as EEE is not defined yet

SuggestedRemedy

see comment

Proposed Response *Response Status* **O**

Cl **201** *SC* **201.2.2** *P* **82** *L* **24** # 353

Jonsson, Ragnar — Infineon

Comment Type **T** *Comment Status* **X**

EEE should be removed

SuggestedRemedy

Remove LPI status request signal

Proposed Response *Response Status* **O**

Cl **201** *SC* **201.2.2** *P* **83** *L* # 198

van Dyck, Peter Infineon

Comment Type **T** *Comment Status* **X**

Primitives PMA_PCS_RX_LPI STATUS.request and PMA_ALERTDETECT are not defined or needed,

SuggestedRemedy

Remove PMA_PCS_RX_LPI_STATUS.request and PMA_ALERTDETECT.indication from Figure 201-4

Proposed Response *Response Status* **O**

Cl **201** *SC* **201.2.2** *P* **83** *L* **24** # 280

Razavi, Alireza Infineon

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

From figure 201-4, PMA_PCS_RX_LPI_STATUS_request, PMA_ALERTDETECTinduction to be remobed as EEE is not defined yet

SuggestedRemedy

see comment

Proposed Response *Response Status* **O**

Cl **201** *SC* **201.2.2.1** *P* **84** *L* **43** # 281

Razavi, Alireza Infineon

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

Missing space in 'FOLLOWERThis value'.

SuggestedRemedy

Insert a space: 'FOLLOWER This value'.

Proposed Response *Response Status* **O**

Cl **201** *SC* **201.2.2.1** *P* **84** *L* **43** # 107

Wienckowski, Natalie IVN Solutions LLC

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

SuggestedRemedy

Adjust tab settings so "FOLLOWER" doesn't run in to "This".

Proposed Response *Response Status* **O**

Cl **201** *SC* **201.2.2.1.1** *P* **83** *L* **24** # 354

Jonsson, Ragnar Infineon

Comment Type **T** *Comment Status* **X**

EEE should be removed

SuggestedRemedy

Remove LPI status and Alert-Detect signals

Proposed Response *Response Status* **O**

Cl **201** *SC* **201.2.2.2** *P* **83** *L* **27** # 118

Wang, Frank Realtek Semiconductor Corp.

Comment Type **T** *Comment Status* **X**

Since 802.3dm is asymmetric transmission, the use of "and" will restrict optimal PHY design.

SuggestedRemedy

change "and" to "or"

Proposed Response *Response Status* **O**

Cl **201** *SC* **201.2.2.2** *P* **84** *L* **29** # 296

Razavi, Alireza Infineon

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

both " LEADER-FOLLOWER" and "LEADER/FOLLOWER" pharases are used.

SuggestedRemedy

for consistency, only one of them should be used

Proposed Response *Response Status* **O**

Cl **201** *SC* **201.2.2.2** *P* **84** *L* **29** # 355

Jonsson, Ragnar Infineon

Comment Type **T** *Comment Status* **X**

Autoneg needs to support selection of PHY-S vs PHY-D

SuggestedRemedy

Add Autoneg support for selecting PHY-S vs PHY-D

Proposed Response *Response Status* **O**

Cl **201** *SC* **201.2.2.2.1** *P* **84** *L* **43** # 230

Pandey, Sujan Velinktech

Comment Type **ER** *Comment Status* **X**

FOLLOWERThis …

SuggestedRemedy

FOLLOWER This

Proposed Response *Response Status* **O**

Cl **201** *SC* **201.2.2.2.1** *P* **84** *L* **43** # 38

Lasry, Ariel Qualcomm Technologies Inc.

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

space missing between "FOLLOWER" and "This"

SuggestedRemedy

Insert between "FOLLOWER" and "This"

Proposed Response *Response Status* **O**

Cl **201** *SC* **201.2.2.3** *P* **84** *L* **5** # 119

Wang, Frank Realtek Semiconductor Corp.

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

typo

SuggestedRemedy

change "in201.4.2.2" to "in 201.4.2.2"

Proposed Response *Response Status* **O**

Cl **201** *SC* **201.2.2.3** *P* **84** *L* **26** # 356

Jonsson, Ragnar Infineon

Comment Type **T** *Comment Status* **X**

It is optional for PHY-D to be a follower and PHY-S to be a master

SuggestedRemedy

See comment

Proposed Response *Response Status* **O**

Cl **201** *SC* **201.2.2.3** *P* **85** *L* **5** # 199

van Dyck, Peter Infineon

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

"in201.4.2.2" space missing

SuggestedRemedy

Replace with "in 201.4.2.2"

Proposed Response *Response Status* **O**

Cl **201** *SC* **201.2.2.3** *P* **85** *L* **5** # 282

Razavi, Alireza Infineon

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

Missing space in reference 'in201.4.2.2'.

SuggestedRemedy

Insert a space: 'in 201.4.2.2'.

Proposed Response *Response Status* **O**

Cl **201** *SC* **201.2.2.3** *P* **85** *L* **5** # 78

Wienckowski, Natalie IVN Solutions LLC

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

missing space

SuggestedRemedy

Add space between "in" and "201.4.2.2".

Proposed Response *Response Status* **O**

Cl **201** *SC* **201.2.2.3** *P* **85** *L* **5** # 231

Pandey, Sujan Velinktech

Comment Type **ER** *Comment Status* **X**

for the HS_TX and in201.4.2.2 for ...

SuggestedRemedy

for the HS_TX and in 201.4.2.2 for ...

Proposed Response *Response Status* **O**

Cl **201** *SC* **201.2.2.3.1** *P* **84** *L* **16** # 120

Wang, Frank Realtek Semiconductor Corp.

Comment Type **T** *Comment Status* **X**

{–1, –1/3, +1/3, +1} is only for the normal operation of 10G mode.

SuggestedRemedy

change "{–1, –1/3, +1/3, +1} in normal operation." to the following:
{–1, –1/3, +1/3, +1} in normal operation for 10G mode.
{-1, +1} in normal operation for 2.5G mode and 5G mode.

Proposed Response *Response Status* **O**

Cl **201** *SC* **201.2.2.3.1** *P* **84** *L* **26** # 121

Wang, Frank Realtek Semiconductor Corp.

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

wording: since there is only one case, I suggest to remove "when zeros are to be transmitted in the following case:"

SuggestedRemedy

change:
0 when zeros are to be transmitted in the following case:
when PMA_TXMODE.indication is SEND_Z during PMA training.

to:
0 when PMA_TXMODE.indication is SEND_Z during PMA training.

Proposed Response *Response Status* **O**

Cl **201** *SC* **201.2.2.3.1** *P* **85** *L* **17** # 39

Lasry, Ariel Qualcomm Technologies Inc.

Comment Type **T** *Comment Status* **X**

values -1/3 and +1/3 may only be used by 10G+100MBASE-T1/V1 PHY

SuggestedRemedy

add after "operation": "for 10G+100MBASE-T1/V1 PHY"
Ad a new line with:
"{-1, +1} in normal operation for 2.5G+100MBASE-T1/V1 and 5G+100MBASE-T1/V1 PHYs."

Proposed Response *Response Status* **O**

Cl **201** *SC* **201.2.2.3.1** *P* **85** *L* **23** # 357

Jonsson, Ragnar Infineon

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

Not the same clarity for DME signal as PAM2 signal in line 17

SuggestedRemedy

Clarify the meaning of DME, by adding a reference to Clause 201.4.2.2.16

Proposed Response *Response Status* **O**

Cl **201** *SC* **201.2.2.4.1** *P* **84** *L* **47** # 122

Wang, Frank Realtek Semiconductor Corp.

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

grammar: comma afrer "During reception"

SuggestedRemedy

change "reception" to "reception,"

Proposed Response *Response Status* **O**

Cl **201** *SC* **201.2.2.4.2** *P* **85** *L* **50** # 40

Lasry, Ariel — Qualcomm Technologies Inc.

Comment Type **T** *Comment Status* **X**

It is not only the low speed path PMA that generates PMA_UNITDATA.indication(rx_symb) messages. Also the high speed path.

SuggestedRemedy

delete "low speed path"

Proposed Response *Response Status* **O**

Cl **201** *SC* **201.2.2.4.2** *P* **85** *L* **52** # 41

Lasry, Ariel — Qualcomm Technologies Inc.

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

ambiguious use of 2.5G. Other Clauses use the PHY name

SuggestedRemedy

replace "2.5G" with "100M+2.5GBASE-T1/V1"

Proposed Response *Response Status* **O**

Cl **201** *SC* **201.2.2.4.2** *P* **85** *L* **52** # 250

McCarthy, Frank — Infineon

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

semicolon should be a comma

SuggestedRemedy

Proposed Response *Response Status* **O**

Cl **201** *SC* **201.2.2.4.2** *P* **85** *L* **52** # 42

Lasry, Ariel — Qualcomm Technologies Inc.

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

ambiguious use of 5G. Other Clauses use the PHY name

SuggestedRemedy

replace "5G" with "100M+5GBASE-T1/V1"

Proposed Response *Response Status* **O**

Cl **201** *SC* **201.2.2.4.2** *P* **85** *L* **52** # 43

Lasry, Ariel — Qualcomm Technologies Inc.

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

ambiguious use of 10G. Other Clauses use the PHY name

SuggestedRemedy

replace "10G" with "100M+10GBASE-T1/V1"

Proposed Response *Response Status* **O**

Cl **201** *SC* **201.2.2.4.2** *P* **85** *L* **53** # 251

McCarthy, Frank — Infineon

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

semicolon should be a comma

SuggestedRemedy

Proposed Response *Response Status* **O**

Cl **201** *SC* **201.2.2.5.3** *P* **86** *L* **37** # 359

Jonsson, Ragnar — Infineon

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

Change second HS_RX tp LS_RX

SuggestedRemedy

See comment

Proposed Response *Response Status* **O**

Cl **201** *SC* **201.2.2.5.3** *P* **86** *L* **37** # 283

Razavi, Alireza Infineon

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

TBD can be removed "The effect of receipt of this primitive is specified in 149.4.2.3 for HS_RX and 201.6.2.3 for HS_RX and TBD."

SuggestedRemedy

Replaced by "The effect of receipt of this primitive is specified in 149.4.2.3 for HS_RX and 201.6.2.3 for LS_RX."

Proposed Response *Response Status* **O**

Cl **201** *SC* **201.2.2.5.3** *P* **86** *L* **37** # 200

van Dyck, Peter Infineon

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

"201.6.2.3 for HS_RX" wrong RX

SuggestedRemedy

Replace with "201.6.2.3 for LS_RX"

Proposed Response *Response Status* **O**

Cl **201** *SC* **201.2.2.5.3** *P* **86** *L* **37** # 269

Lo, William Axonne Inc

Comment Type **T** *Comment Status* **X**

The fix here is simple if we add some missing text in another comment. Let's make the simple fix here first

SuggestedRemedy

1) Delete Editor's note
2) Change 201.6.2.3 for HS_RX and
TBD. To:
201.4.2.3 for LS_RX.

Proposed Response *Response Status* **O**

Cl **201** *SC* **201.2.2.5.3** *P* **86** *L* **37** # 358

Jonsson, Ragnar Infineon

Comment Type **T** *Comment Status* **X**

Reference to wrong clause

SuggestedRemedy

Reference Clause 201.5 instead of 149.4.2.3

Proposed Response *Response Status* **O**

Cl **201** *SC* **201.2.2.5.3** *P* **86** *L* **37** # 360

Jonsson, Ragnar Infineon

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

Remove "and TBD", unless there is specific clause to be referenced

SuggestedRemedy

See comment

Proposed Response *Response Status* **O**

Cl **201** *SC* **201.2.2.7.3** *P* **87** *L* # 270

Lo, William Axonne Inc

Comment Type **T** *Comment Status* **X**

Fix the references.

SuggestedRemedy

1) Delete the contents in the entire section including the editor's note
2) Add the following text:
The effect of receipt of this primitive is specified in Figure 149–33, 149.4.2.4, 201.3.2.3, 201.4.2.3, and 201.7.2.1.3.

Proposed Response *Response Status* **O**

Cl **201** *SC* **201.2.2.7.3** *P* **87** *L* **28** # 361

Jonsson, Ragnar Infineon

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

Remove "TBD", unless there is specific clause to be referenced

SuggestedRemedy

See comment

Proposed Response *Response Status* **O**

Cl **201** *SC* **201.2.4** *P* **96** *L* # 201

van Dyck, Peter Infineon

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

Leftmost vertical line is out of place.

SuggestedRemedy

Align leftmost vertical line arrow top and bottom to touch dotted lines at XGMII and PHY D PMA SERVICE INTERFACE. Align label "PCS" to not overlap line and be centered

Proposed Response *Response Status* **O**

Cl **201** *SC* **201.3.1** *P* **87** *L* **37** # 123

Wang, Frank Realtek Semiconductor Corp.

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

wording

SuggestedRemedy

change "MultiGBASE-T1" to "MultiG+100MBASE-T1/V1"

Proposed Response *Response Status* **O**

Cl **201** *SC* **201.3.1** *P* **88** *L* **32** # 44

Lasry, Ariel Qualcomm Technologies Inc.

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

lines 32-34 are same as clause 149.3.1

SuggestedRemedy

replace lines 32-34 with "PCS service interface is specified as in 149.3.1"

Proposed Response *Response Status* **O**

Cl **201** *SC* **201.3.2** *P* **89** *L* **20** # 252

McCarthy, Frank Infineon

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

line should not go through pma_data_mode

SuggestedRemedy

Proposed Response *Response Status* **O**

Cl **201** *SC* **201.3.2** *P* **89** *L* **20** # 73

Zhu, Infineon

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

pcs_data_mode text is blocked

SuggestedRemedy

adjust text postion

Proposed Response *Response Status* **O**

Cl **201** *SC* **201.3.2** *P* **89** *L* **29** # 46

Lasry, Ariel Qualcomm Technologies Inc.

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

Figure 201-5 "pcs_data_mode" text is over the arrow

SuggestedRemedy

move the text to the right of the arrow

Proposed Response *Response Status* **O**

Cl **201** *SC* **201.3.2** *P* **89** *L* **29** # 45

Lasry, Ariel Qualcomm Technologies Inc.

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

Figure 201-5 HS_TX PCS TRANSMIT block is missing a dashed output arrow down to PHY_S PMA SERVICE INTERFACE.The dashed arrow is for "tx_lpi_active"

SuggestedRemedy

add the arrow

Proposed Response *Response Status* **O**

Cl **201** *SC* **201.3.2** *P* **92** *L* **42** # 257

McCarthy, Frank — Infineon

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

The 1:18 refers to the ratio of the transfer rates and only if rate adaptation is not needed.

SuggestedRemedy

For the 10G HS_PATH, it takes 1800 PMA_UNITDATA transfers to send an RS-FEC frame of data. For the 10G HS_PATH, if the ratio of the XGMII to PMA transfer rates is exactly 1:18, then the transmit process does not need to perform rate adaptation.

Proposed Response *Response Status* **O**

Cl **201** *SC* **201.3.2** *P* **92** *L* **45** # 258

McCarthy, Frank — Infineon

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

The 1:36 refers to the ratio of the transfer rates and only if rate adaptation is not needed.

SuggestedRemedy

For 2.5G and 5G HS_PATH, it takes 3600 PMA_UNITDATA transfers to send an RS-FEC frame of data. For 2.5G and 5G HS_PATH, if the PCS is connected to an XGMII and PMA sublayer where the ratio of their transfer rates is exactly 1:36, then the transmit process does not need to perform rate adaptation.

Proposed Response *Response Status* **O**

Cl **201** *SC* **201.3.2.2** *P* **89** *L* **20** # 362

Jonsson, Ragnar — Infineon

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

"pcs_data_mode" is overlapping the line

SuggestedRemedy

See comment

Proposed Response *Response Status* **O**

Cl **201** *SC* **201.3.2.2** *P* **90** *L* **1** # 329

Johnson, Samuel — Infineon

Comment Type **T** *Comment Status* **X**

Mapping of logic0 -> +1 and logic1 -> -1 seems non-intuitive

SuggestedRemedy

If this is used by PAM2 in other standards, then leave unchanged. Otherwide, propose
Logic0 -> -1
Logic1 -> +1

Proposed Response *Response Status* **O**

Cl **201** *SC* **201.3.2.2** *P* **90** *L* **7** # 259

McCarthy, Frank — Infineon

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

In fig 201-6, the S_n are from the training frame, and the A_n are from the 2.5G/5G data stream D_n[0]. There should be a note explaining this in the figure.

SuggestedRemedy

The S_n are from the training fram, and the A_n are from the 2.5G and 5G HS_PATH when the PAM2 mapper is used.

Proposed Response *Response Status* **O**

Cl **201** *SC* **201.3.2.2** *P* **91** *L* **1** # 79

Wienckowski, Natalie — IVN Solutions LLC

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

extra period

SuggestedRemedy

Remove duplicate period at end of sentence.

Proposed Response *Response Status* **O**

Cl **201** *SC* **201.3.2.2** *P* **91** *L* **1** # 284

Razavi, Alireza Infineon

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

Extra punctuation in figure reference 'Figure 149-6. .'.

SuggestedRemedy

Remove the extra period.

Proposed Response *Response Status* **O**

Cl **201** *SC* **201.3.2.2** *P* **91** *L* **1** # 47

Lasry, Ariel Qualcomm Technologies Inc.

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

typo: dot at end of line

SuggestedRemedy

remove " ." at end of line

Proposed Response *Response Status* **O**

Cl **201** *SC* **201.3.2.2** *P* **91** *L* **15** # 232

Pandey, Sujan Velinktech

Comment Type **ER** *Comment Status* **X**

Interleaver ad RS-FEC (360,326) encoder

SuggestedRemedy

Interleaver and RS-FEC (360,326) encoder

Proposed Response *Response Status* **O**

Cl **201** *SC* **201.3.2.2** *P* **91** *L* **15** # 253

McCarthy, Frank Infineon

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

"ad" should be "and" in block name

SuggestedRemedy

Interleave and RS-FEC(360,326) encoder

Proposed Response *Response Status* **O**

Cl **201** *SC* **201.3.2.2** *P* **91** *L* **15** # 363

Jonsson, Ragnar Infineon

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

Typo: "ad" instead of "and"

SuggestedRemedy

See comment

Proposed Response *Response Status* **O**

Cl **201** *SC* **201.3.2.2** *P* **91** *L* **21** # 49

Lasry, Ariel Qualcomm Technologies Inc.

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

Figure 201-7 uses "10G Path" but Figure 201-6 uses "PAM4 data path".

SuggestedRemedy

replace "10G Path" with "PAM4 path"

Proposed Response *Response Status* **O**

Cl **201** *SC* **201.3.2.2** *P* **91** *L* **23** # 50

Lasry, Ariel Qualcomm Technologies Inc.

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

Figure 201-7 uses "2.5G, 5G Path" but Figure 201-6 uses "PAM2 training/data path".

SuggestedRemedy

replace "2.5G, 5G Path" with "PAM2 path"

Proposed Response *Response Status* **O**

Cl **201** *SC* **201.3.2.2** *P* **91** *L* **30** # 254

McCarthy, Frank Infineon

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

Add interleaving description

SuggestedRemedy

Figure shown for L = 1, which means no interleaving. The L parameter specifies the number of FEC blocks interleaved together.

Proposed Response *Response Status* **O**

Cl **201** *SC* **201.3.2.2** *P* **91** *L* **32** # 51

Lasry, Ariel — Qualcomm Technologies Inc.

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

Figure 201-7 NOTE 3 for consistency with above comments 2.5G, 5G and 10G should be replaced

SuggestedRemedy

Replace: "For 2.5G and 5G" with "For PAM2 path".
Replace "10G" with "PAM4 path"

Proposed Response *Response Status* **O**

Cl **201** *SC* **201.3.2.2** *P* **91** *L* **34** # 48

Lasry, Ariel — Qualcomm Technologies Inc.

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

The Figure is for HS_TX not HS_PATH. HS_PATH would also include the HS_RX which is not there.

SuggestedRemedy

replace "HS_PATH" with "HS_TX"

Proposed Response *Response Status* **O**

Cl **201** *SC* **201.3.2.2** *P* **92** *L* **1** # 285

Razavi, Alireza — Infineon

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

reference to 'Figure 149-7" should be remove .

SuggestedRemedy

see comment

Proposed Response *Response Status* **O**

Cl **201** *SC* **201.3.2.2** *P* **92** *L* **1** # 52

Lasry, Ariel — Qualcomm Technologies Inc.

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

typo: dot at end of line

SuggestedRemedy

remove " ." at end of line

Proposed Response *Response Status* **O**

Cl **201** *SC* **201.3.2.2** *P* **92** *L* **1** # 80

Wienckowski, Natalie — IVN Solutions LLC

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

extra period

SuggestedRemedy

Remove duplicate period at end of sentence.

Proposed Response *Response Status* **O**

Cl **201** *SC* **201.3.2.2** *P* **92** *L* **19** # 53

Lasry, Ariel — Qualcomm Technologies Inc.

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

Figure 201-8 uses "10G Path" not consistent with "PAM4 data path".

SuggestedRemedy

replace "10G Path" with "PAM4 path"

Proposed Response *Response Status* **O**

Cl **201** *SC* **201.3.2.2** *P* **92** *L* **21** # 54

Lasry, Ariel — Qualcomm Technologies Inc.

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

Figure 201-8 uses "2.5G, 5G Path" not consistent with "PAM2 training/data path".

SuggestedRemedy

replace "2.5G, 5G Path" with "PAM2 path"

Proposed Response *Response Status* **O**

Cl **201** *SC* **201.3.2.2** *P* **92** *L* **32** # 256

McCarthy, Frank — Infineon

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

Note 1 is confusing.

SuggestedRemedy

At the top of this figure, the mapping of a 64B/65B block into eight data characters, D0 to D7, for the XGMII is shown.

Proposed Response *Response Status* **O**

Cl **201** *SC* **201.3.2.2** *P* **92** *L* **34** # 255

McCarthy, Frank — Infineon

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

Add interleaving description

SuggestedRemedy

Figure shown for L = 1, which means no interleaving. The L parameter specifies the number of FEC blocks interleaved together.

Proposed Response *Response Status* **O**

Cl **201** *SC* **201.3.2.2** *P* **92** *L* **35** # 55

Lasry, Ariel — Qualcomm Technologies Inc.

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

Figure 201-8 NOTE 3 for consistency with above comments 2.5G, 5G and 10G should be replaced

SuggestedRemedy

Replace: "For 2.5G and 5G" with "For PAM2 path".
Replace "10G" with "PAM4 path"

Proposed Response *Response Status* **O**

Cl **201** *SC* **201.3.2.2** *P* **92** *L* **36** # 56

Lasry, Ariel — Qualcomm Technologies Inc.

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

The Figure is for HS_RX not HS_PATH. HS_PATH would also include the HS_TX which is not there.

SuggestedRemedy

replace "HS_PATH" with "HS_RX"

Proposed Response *Response Status* **O**

Cl **201** *SC* **201.3.2.2** *P* **92** *L* **41** # 57

Lasry, Ariel — Qualcomm Technologies Inc.

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

"10G HS_PATH".
Terminology: "10G" is not defined.
The 1800 PMA_UNITDATA transfers are only for the HS_TX. Not for the HS_PATH which consists of both the HS_TX and HS_RX

SuggestedRemedy

replace "10G HS_PATH" with "PAM4 path HS_TX (10Gb/s)"

Proposed Response *Response Status* **O**

Cl **201** *SC* **201.3.2.2** *P* **92** *L* **44** # 58

Lasry, Ariel — Qualcomm Technologies Inc.

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

"2.5G and 5G HS_PATH".
Terminology: "2.5G" and "5G" are not defined.
The 3600 PMA_UNITDATA transfers are only for the HS_TX. Not for the HS_PATH which consists of both the HS_TX and HS_RX

SuggestedRemedy

replace "2.5G and 5G HS_PATH" with "PAM2 path HS_TX (2.5Gb/s and 5Gb/s)"

Proposed Response *Response Status* **O**

Cl **201** *SC* **201.3.2.2** *P* **92** *L* **47** # 59

Lasry, Ariel — Qualcomm Technologies Inc.

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

"10G HS_PATH" in consistentcy to previous comments this needs to be updated

SuggestedRemedy

replace "10G HS_PATH" with "PAM4 path HS_TX (10Gb/s)"

Proposed Response *Response Status* **O**

Cl **201** *SC* **201.3.2.2** *P* **92** *L* **48** # 260

McCarthy, Frank — Infineon

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

There should be commas around respectively.

SuggestedRemedy

and 149.3.2.2.21, respectively, with the

Proposed Response *Response Status* **O**

Cl **201** *SC* **201.3.2.2** *P* **92** *L* **51** # 60

Lasry, Ariel — Qualcomm Technologies Inc.

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

"2.5G and 5G HS_PATH" in consistentcy to previous comments this needs to be updated

SuggestedRemedy

replace "2.5G and 5G HS_PATH" with "PAM2 path HS_TX (2.5Gb/s and 5Gb/s)"

Proposed Response *Response Status* **O**

Cl **201** *SC* **201.3.2.2** *P* **92** *L* **52** # 261

McCarthy, Frank — Infineon

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

comma should be after D_n

SuggestedRemedy

presented as D_n, where

Proposed Response *Response Status* **O**

Cl **201** *SC* **201.3.2.2** *P* **92** *L* **53** # 262

McCarthy, Frank — Infineon

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

"is scrambled" should be "and are scrambled"

SuggestedRemedy

The bits of the interleaved RS-FEC superframe are presented as Dn, where n is an index indicating the symbol number, and are scrambled using an additive scrambler.

Proposed Response *Response Status* **O**

Cl **201** *SC* **201.3.2.2** *P* **92** *L* **53** # 74

Zhu, — Infineon

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

... are presented as, Dn where' -- comma may be mis-postioned

SuggestedRemedy

change to '... are presented as Dn, where'

Proposed Response *Response Status* **O**

Cl **201** *SC* **201.3.2.2** *P* **93** *L* **1** # 263

McCarthy, Frank — Infineon

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

Replace "The DSn is applied as additive scrambler sequence to incoming data bits Dn to generate a single scrambled data An as shown in Equation (201–1)." with the proposed change, which includes defining D_n for the 2.5G and 5G HS_PATH.

SuggestedRemedy

All incoming 2.5G and 5G HS_PATH data bits are D_n, and D_n is represented in Figure 201-6 as D_n[0]. The DS_n are applied as an additive scrambler sequence to each incoming data bit, D_n, to generate a single scrambled data bit, A_n, as shown in Equation (201–1).

Proposed Response *Response Status* **O**

Cl **201** *SC* **201.3.2.2** *P* **93** *L* **8** # 61

Lasry, Ariel — Qualcomm Technologies Inc.

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

"2.5G and 5G HS_PATH" in consistentcy to previous comments this needs to be updated

SuggestedRemedy

replace "2.5G and 5G HS_PATH" with "PAM2 path HS_TX (2.5Gb/s and 5Gb/s)"

Proposed Response *Response Status* **O**

Cl **201** *SC* **201.3.2.2** *P* **93** *L* **9** # 180

Zimmerman, George — CME Consulting/ADI,APL Gp, Cisco, Infineon, OnSe

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

Just to say "encode … as specified." doesn't write the requirement. The requirement is actually written below on line 18 - this line isn't needed - 18 just needs to be written as a requirement. Additionally, lines 6 through 17 are unnecessary.

SuggestedRemedy

Change P93 L18 to read "For the 2.5G and 5G HS_PATH, each consecutive output symbol, An shall be mapped to a PAM2 encoded symbol M(n) as follows:"
Delete lines 6 through 16.

Proposed Response *Response Status* **O**

Cl **201** *SC* **201.3.2.3** *P* **93** *L* **24** # 264

McCarthy, Frank — Infineon

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

"including, compliance" should be "includes compliance"

SuggestedRemedy

The PCS receive function for HS_PATH shall conform to the PCS 64B/65B receive state diagram in Figure 149-18, and the PCS Receive bit ordering in Figure 201–8 includes compliance with the associated state variables specified in 201.3.6.

Proposed Response *Response Status* **O**

Cl **201** *SC* **201.3.2.3** *P* **93** *L* **26** # 181

Zimmerman, George — CME Consulting/ADI,APL Gp, Cisco, Infineon, OnSe

Comment Type **T** *Comment Status* **X**

There are no state variables specified in 201.3.6. Only "S" is mentioned there, and S is already taken care of earlier for referneces.

SuggestedRemedy

Delete "including, compliance with the associated state variables specified in 201.3.6"

Proposed Response *Response Status* **O**

Cl **201** *SC* **201.3.2.3** *P* **93** *L* **30** # 265

McCarthy, Frank — Infineon

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

"are demapped and descrambling performed." should be ""are demapped, and descrambling is performed."

SuggestedRemedy

The received symbols are demapped, and descrambling is performed.

Proposed Response *Response Status* **O**

Cl **201** *SC* **201.3.2.3** *P* **93** *L* **30** # 233

Pandey, Sujan — Velinktech

Comment Type **ER** *Comment Status* **X**

The received symbols are demaped and descrambling performed

SuggestedRemedy

The received symbols are demaped and descrambled

Proposed Response *Response Status* **O**

Cl **201** *SC* **201.3.2.3** *P* **93** *L* **30** # 81

Wienckowski, Natalie IVN Solutions LLC

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

grammer

SuggestedRemedy

Change "descrambling performed" to "descrambling is performed".

Proposed Response *Response Status* **O**

Cl **201** *SC* **201.3.2.3** *P* **93** *L* **41** # 234

Pandey, Sujan Velinktech

Comment Type **ER** *Comment Status* **X**

… PCS Receive checks the received PAM2 framing and signals the reliable ...

SuggestedRemedy

… PCS Receive checks the received PAM2 framing and signals for the reliable ...

Proposed Response *Response Status* **O**

Cl **201** *SC* **201.3.2.3.1** *P* **94** *L* **10** # 185

Zimmerman, George CME Consulting/ADI,APL Gp, Cisco, Infineon, OnSe

Comment Type **T** *Comment Status* **X**

General comment, Big Ticket Item - MultiSpeed PHYs.
We need to decide whether we are specifying one (or 2) PMA/PCS types with multiple speed modes or one (or 2) PMA/PCS types per speed.
Most of the language says we have a PMA/PCS per speed, and this is how it is usually done. However, the language here, and elsewhere, describes the speeds as "modes" of a PHY - as though we had a multi-speed PHY. This is the first reference, but it occurs in many places. 2.5G, 5G, or 10G are not "modes" - the text refers to "in 10G" or "in 10G mode" (or 2.5G, or 5G…) in many places. There is a 2.5G+100MBASE-T1/V1 PHY transmiting 2.5 Gb/s, (and a 100M+2.5GBASE-T1/V1 PHY receiveing at 2.5Gb/s, and the other speeds similarly have their own phys).
While these edits are clear on clause 201 - they equally apply to 202, where the description of the phy is confused in that it speed-selects during PHY training, without a separate auto-neg sublayer (See 202.4.2.4.5) suggesting a multi-speed PHY.

SuggestedRemedy

Assuming at least clause 201 is one PMA/PCS per speed, Change "When operating in the data mode in 10G, the HS_RX PCS forms" to "When operating in the data mode, a100M+10GBASE-T1/V1 PHY's HS_RX PCS shall form",
and change, "When operating in the data mode in 2.5G and 5G, the HS_RX PCS" to "When operating in the data mode, a 100M+2.5GBASE-T1/V1 PHY and a 100M+10GBASE-T1/V1 PHY's HS_RX PCS's each"...
Similarly, change at P117 L35, "and the PHY is transmitting in 10G mode, it shall transmit" to "a 10G+100MBASE-T1/V1 PHY shall transmit..."
201.8.1
Change at P117 L38, "and the PHY is transmitting in 5G or 2.5G mode, it shall transmit" to "a 2.5G+100MBASE-T1/V1 PHY or a 5G+100MBASE-T1/V1 PHY shall each transmit..."
201.8.2.2
Change at P121 L6, "when transmitting in 10G mode" to "for a 10G+100MBASE-T1/V1 PHY"
Change at P121 L6, "For 5G and 2.5G modes" to "For 5G+100MBASE-T1/V1 or 2.5G+100MBASE-T1/V1 PHYs"
Editorial license to replace other "mode" usage

Proposed Response *Response Status* **O**

Cl **201** *SC* **201.3.2.3.1** *P* **94** *L* **10** # 184

Zimmerman, George — CME Consulting/ADI,APL Gp, Cisco, Infineon, OnSe

Comment Type **T** *Comment Status* **X**

Missing shall. There is one for the formation of the PAM2 stream, but not for the PAM4 stream. Additionally, while its nice to reference clause 149, 149.3.2.3.1 is sufficiently short you might as well put it here - AND - it is parallel to the new text needed for 2.5Gb/s and 5Gb/s

SuggestedRemedy

change "forms a PAM4 stream" to "shall form a PAM4 stream".
Consider simply replacing the first paragraph on 201.3.2.3.1 with the text of 149.3.2.3.1

Proposed Response *Response Status* **O**

Cl **201** *SC* **201.4.2.2** *P* **92** *L* **42** # 124

Wang, Frank — Realtek Semiconductor Corp.

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

wording

SuggestedRemedy

change "MultiGBASE-T1" to "100M+MultiGBASE-T1/V1"

Proposed Response *Response Status* **O**

Cl **201** *SC* **201.4.2.2** *P* **92** *L* **51** # 125

Wang, Frank — Realtek Semiconductor Corp.

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

wording

SuggestedRemedy

change: "take four 65B blocks and append a 10-bit OAM field followed by 6 reserved bits set to all 1s to each group."
to: "take 1 group of 4 65B blocks and append a 10-bit OAM field followed by 6 reserved bits set to all 1s to it."

Proposed Response *Response Status* **O**

Cl **201** *SC* **201.4.2.2** *P* **93** *L* **2** # 126

Wang, Frank — Realtek Semiconductor Corp.

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

wording

SuggestedRemedy

change "T" to "T"

Proposed Response *Response Status* **O**

Cl **201** *SC* **201.4.2.2** *P* **93** *L* **12** # 127

Wang, Frank — Realtek Semiconductor Corp.

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

wording

SuggestedRemedy

change "Tn" to "Tn"

Proposed Response *Response Status* **O**

Cl **201** *SC* **201.4.2.2** *P* **96** *L* **43** # 82

Wienckowski, Natalie — IVN Solutions LLC

Comment Type **T** *Comment Status* **X**

copy paste error from Clause 149

SuggestedRemedy

Change: MultiGBASE-T1 PCS
To: 100M+MultiGBASE-T1/V1

Proposed Response *Response Status* **O**

Cl **201** *SC* **201.4.2.2** *P* **97** *L* **12** # 216

van Dyck, Peter Infineon

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

"defined in 201.3.5.1" This section defines how Tn is derived for Sn in HS_PATH, Sn and Tn are not defined in the draft for LS_PATH, which has a different training frame than the HS_PATH.

SuggestedRemedy

Change to "defined in 201.4.5.1"
For definition of Sn for LS_PATH and Clause 201.4.5.1 see comment for Clause 201.4.5

Proposed Response *Response Status* **O**

Cl **201** *SC* **201.4.2.2** *P* **97** *L* **12** # 202

van Dyck, Peter Infineon

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

"(Tn)" the n should be subscript and this should be italic.

SuggestedRemedy

See comment

Proposed Response *Response Status* **O**

Cl **201** *SC* **201.4.2.2.2** *P* **98** *L* **35** # 75

Zhu, Infineon

Comment Type **T** *Comment Status* **X**

the bit ordering in the figure looks like Bit299 is sent first

SuggestedRemedy

Bit ordering in Figure shall be reversed from Bit0…Bit299 to Bit299…Bit0 to reflect that Bit0 is transmitted first

Proposed Response *Response Status* **O**

Cl **201** *SC* **201.4.2.2.15** *P* **99** *L* **3** # 128

Wang, Frank Realtek Semiconductor Corp.

Comment Type **T** *Comment Status* **X**

wording: since there is no interleaver in LS_TX, "interleaved" should be removed

SuggestedRemedy

change "the interleaved RS-FEC" to "the RS-FEC"

Proposed Response *Response Status* **O**

Cl **201** *SC* **201.4.2.2.15** *P* **103** *L* **3** # 271

Lo, William Axonne Inc

Comment Type **T** *Comment Status* **X**

There is no interleaving or superframes in the LS_PATH

SuggestedRemedy

Change: interleaved RS-FEC superframe
To: RS-FEC frame

Proposed Response *Response Status* **O**

Cl **201** *SC* **201.4.2.3.1** *P* **104** *L* **46** # 203

van Dyck, Peter Infineon

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

"block lock" underscore missing

SuggestedRemedy

Replace with "block_lock"

Proposed Response *Response Status* **O**

Cl **201** *SC* **201.4.3** *P* **101** *L* **18** # 129

Wang, Frank Realtek Semiconductor Corp.

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

grammar: comma afrer "mode"

SuggestedRemedy

change "mode" to "mode,"

Proposed Response *Response Status* **O**

Cl **201** *SC* **201.4.3** *P* **101** *L* **19** # 130

Wang, Frank — Realtek Semiconductor Corp.

Comment Type **T** *Comment Status* **X**

The initial condition of the scrambler is missed.

SuggestedRemedy

change: "by setting the data input to the scrambler to zero"
to: "by setting zero input and any non-zero initial condition to the scrambler"

Proposed Response *Response Status* **O**

Cl **201** *SC* **201.4.5** *P* **105** *L* **5** # 286

Razavi, Alireza — Infineon

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

enumaration is not correct and all of them are a)

SuggestedRemedy

enumaration should be updated

Proposed Response *Response Status* **O**

Cl **201** *SC* **201.4.5** *P* **105** *L* **34** # 287

Razavi, Alireza — Infineon

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

64/65 blocks

SuggestedRemedy

64/65 blocks" replaced by "64B/65B blocks"

Proposed Response *Response Status* **O**

Cl **201** *SC* **201.4.5** *P* **106** *L* **3** # 272

Lo, William — Axonne Inc

Comment Type **T** *Comment Status* **X**

Add the following sentence for clarity.

SuggestedRemedy

After the training frame is assembled, it is scrambled and DME encoded as described in 201.4.2.2.15 and 201.4.2.2.16 respectively.

Proposed Response *Response Status* **O**

Cl **201** *SC* **201.4.5** *P* **106** *L* **32** # 217

van Dyck, Peter — Infineon

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

Definition of Sn for LS_PATH is missing, definition of Tn for LS_PATH (Clause 201.4.5.1) is missing.

SuggestedRemedy

For definition of Sn, append below text and equation to Clause 201.4.5, page 106, line 18:
"Sn defines the training frame bit at time n, see Equation (201-…)"
use equation found in Sn.pdf

For definition of Tn, append the below text as Clause 201.4.5.1, page 106, line 18:
"201.4.5.1 Generation of symbol Tn
The bit Sn is encoded to the DME transmit symbol Tn applying the following rules:
— A “clock transition” shall always be generated at the start of each bit.
— A “data transition” in the middle of a nominal bit period shall be generated if the bit to be transmitted is a logical '1'. Otherwise, no transition shall be generated until the next bit"

Proposed Response *Response Status* **O**

Cl **201** *SC* **201.4.5.1** *P* **106** *L* **19** # 273

Lo, William — Axonne Inc

Comment Type **T** *Comment Status* **X**

Need to talk about setting scr_status during descrambling.

SuggestedRemedy

1) Add section 201.4.5.1 PMA training mode descrambler polynomials
2) Text should be:
The PHY shall acquire descrambler state synchronization to the DME training sequence and report success through scr_status.

Proposed Response *Response Status* **O**

Cl **201** *SC* **201.4.5.2** *P* **106** *L* # 204

van Dyck, Peter Infineon

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

The PMA training mode descrambler polynomial, section 201.4.5.2 is missing for LS_PATH

SuggestedRemedy

Add the below text at Page 106 Line 18:
201.4.5.2 PMA training mode descrambler polynomial
The PHY shall acquire descrambler state synchronization to the DME training sequence and report success through scr_status. For side-stream descrambling, the low speed receiver employs the receiver descrambler generator polynomial per 201.4.4.

Proposed Response *Response Status* **O**

Cl **201** *SC* **201.5** *P* **107** *L* **17** # 364

Jonsson, Ragnar Infineon

Comment Type **T** *Comment Status* **X**

EEE should be removed

SuggestedRemedy

Add to list "3) No EEE support"

Proposed Response *Response Status* **O**

Cl **201** *SC* **201.6.1** *P* **107** *L* **26** # 365

Jonsson, Ragnar Infineon

Comment Type **T** *Comment Status* **X**

Text missing for this section

SuggestedRemedy

Add text corresponding to Figure 149-26 and Clause 149.4.2

Proposed Response *Response Status* **O**

Cl **201** *SC* **201.6.2** *P* **107** *L* # 288

Razavi, Alireza Infineon

Comment Type **T** *Comment Status* **X**

figure for pma refrence diagram is missing.

SuggestedRemedy

figure can be copied from 149-26 with removing the dashed line signals related to EEE

Proposed Response *Response Status* **O**

Cl **201** *SC* **201.6.2** *P* **107** *L* **36** # 366

Jonsson, Ragnar Infineon

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

Refference figure is missin

SuggestedRemedy

Add figure referenced in this line

Proposed Response *Response Status* **O**

Cl **201** *SC* **201.6.2** *P* **107** *L* **38** # 367

Jonsson, Ragnar Infineon

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

Refference figure is missin

SuggestedRemedy

Add figure referenced in this line

Proposed Response *Response Status* **O**

Cl **201** *SC* **201.6.2.1** *P* **107** *L* **50** # 368

Jonsson, Ragnar Infineon

Comment Type **T** *Comment Status* **X**

Change 100ms to 50ms (see also Caluse 202.4.2.1)

SuggestedRemedy

See comment

Proposed Response *Response Status* **O**

Cl **201** *SC* **201.6.2.1** *P* **108** *L* **15** # 370

Jonsson, Ragnar Infineon

Comment Type **T** *Comment Status* **X**

Support for PHY-D as follower should be optional

SuggestedRemedy

See comment

Proposed Response *Response Status* **O**

Cl **201** *SC* **201.6.2.2** *P* **108** *L* **4** # 369

Jonsson, Ragnar Infineon

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

Clarify that Coax is also single "pair"

SuggestedRemedy

Add the word "signle" in front of "Coax cable"

Proposed Response *Response Status* **O**

Cl **201** *SC* **201.6.2.3** *P* **104** *L* **27** # 131

Wang, Frank Realtek Semiconductor Corp.

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

wording: remove "low speed"

SuggestedRemedy

change "The low speed PMA Receiver" to "The PMA Receiver"

Proposed Response *Response Status* **O**

Cl **201** *SC* **201.6.2.3** *P* **104** *L* **28** # 132

Wang, Frank Realtek Semiconductor Corp.

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

There is no such comma in 149.4.2.3.

SuggestedRemedy

change "MDI," to "MDI"

Proposed Response *Response Status* **O**

Cl **201** *SC* **201.6.2.3** *P* **104** *L* **34** # 133

Wang, Frank Realtek Semiconductor Corp.

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

wording: remove "low speed direction"

SuggestedRemedy

change "The low speed direction PMA Receiver" to "The PMA Receiver"

Proposed Response *Response Status* **O**

Cl **201** *SC* **201.6.2.3** *P* **104** *L* **35** # 134

Wang, Frank Realtek Semiconductor Corp.

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

period is missed

SuggestedRemedy

change "accordingly" to "accordingly."

Proposed Response *Response Status* **O**

Cl **201** *SC* **201.6.2.3** *P* **108** *L* **31** # 371

Jonsson, Ragnar Infineon

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

RFER is missing 10^{-10} after 2x

SuggestedRemedy

See comment

Proposed Response *Response Status* **O**

Cl **201** *SC* **201.6.2.3** *P* **108** *L* **35** # 235

Pandey, Sujan Velinktech

Comment Type **ER** *Comment Status* **X**

loc_rcvr_status varialbe accordingly

SuggestedRemedy

loc_rcvr_status varialbe accordingly.

Proposed Response *Response Status* **O**

Cl **201** *SC* **201.6.2.3** *P* **108** *L* **35** # 83

Wienckowski, Natalie IVN Solutions LLC

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

missing period

SuggestedRemedy

Add a period after accordingly.

Proposed Response *Response Status* **O**

Cl **201** *SC* **201.6.2.4** *P* **108** *L* **48** # 372

Jonsson, Ragnar Infineon

Comment Type **T** *Comment Status* **X**

There are sigificant updates from clause 149 that need to be added

SuggestedRemedy

See comment

Proposed Response *Response Status* **O**

Cl **201** *SC* **201.7** *P* **105** *L* **3** # 135

Wang, Frank Realtek Semiconductor Corp.

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

wording

SuggestedRemedy

change "fast and slow directions" to "HS_PATH and LS_PATH"

Proposed Response *Response Status* **O**

Cl **201** *SC* **201.7** *P* **109** *L* **3** # 373

Jonsson, Ragnar Infineon

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

Use HS and LS instead of "fast" and "slow"

SuggestedRemedy

See comment

Proposed Response *Response Status* **O**

Cl **201** *SC* **201.7.1** *P* **105** *L* **16** # 136

Wang, Frank Realtek Semiconductor Corp.

Comment Type **T** *Comment Status* **X**

In the training state, HS_PATH and LS_PATH use different modulation.

SuggestedRemedy

change "PAM 2 transmission is used" to " PAM2 transmission is used for HS_PATH and DME transmission is used for LS_PATH,"

Proposed Response *Response Status* **O**

Cl **201** *SC* **201.7.1** *P* **109** *L* **16** # 374

Jonsson, Ragnar Infineon

Comment Type **T** *Comment Status* **X**

PAM2 is only used for training in HS direction

SuggestedRemedy

Update text to clarify that PAM2 is osed in HS direction and add "DMA is used in LS direction as specified in Caluse …"

Proposed Response *Response Status* **O**

Cl **201** *SC* **201.7.1** *P* **109** *L* **16** # 205

van Dyck, Peter Infineon

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

LS_PATH uses DME during training, not PAM2

SuggestedRemedy

Modify text with: "In the TRAINING state, PAM 2 transmission is used for HS_PATH, DME transmission is used for LS_PATH and …."

Proposed Response *Response Status* **O**

Cl **201** *SC* **201.7.1** *P* **109** *L* **29** # 375

Jonsson, Ragnar Infineon

Comment Type **T** *Comment Status* **X**

100ms is too long, all times in Table 201-6 should be scaled down by 50%

SuggestedRemedy

See comment

Proposed Response *Response Status* **O**

Cl **201** *SC* **201.7.1** *P* **109** *L* **42** # 376

Jonsson, Ragnar Infineon

Comment Type **T** *Comment Status* **X**

100ms is too long, all times in Table 201-7 should be scaled down by 50%

SuggestedRemedy

See comment

Proposed Response *Response Status* **O**

Cl **201** *SC* **201.7.2.1.3** *P* **111** *L* **4** # 289

Razavi, Alireza Infineon

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

EEE is not defined. this section should be removed " and the EEE Refresh monitor state diagram for the fast data path is shown in Figure 149–34."

SuggestedRemedy

see comment

Proposed Response *Response Status* **O**

Cl **201** *SC* **201.7.2.1.3** *P* **111** *L* **6** # 211

Abedinzadeh, Bizhan Infineon

Comment Type **T** *Comment Status* **X**

Figure 201-17 transition from COUNTDOW to TX SWITCH should be changed.

SuggestedRemedy

((phy_role=PHY_S*loc_countd-won_done)*infofield_complete + phy_role=PHY_D

Proposed Response *Response Status* **O**

Cl **201** *SC* **201.7.2.1.3** *P* **111** *L* **6** # 209

Abedinzadeh, Bizhan Infineon

Comment Type **T** *Comment Status* **X**

Figure 201-17 should remove restart paths from PCS_TEST/TX_SWITCH/COUNT_DOWN to SILENT.

SuggestedRemedy

The restart should be only triggered in Link Sync state machine, Figure 201-20 LINK_GOOD_CHECK transition to TRANSMIT_DISABLE.

Proposed Response *Response Status* **O**

Cl **201** *SC* **201.7.2.1.3** *P* **111** *L* **6** # 210

Abedinzadeh, Bizhan Infineon

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

Figure 201-17 remove MASTER/en_slave_tx

SuggestedRemedy

The terms should be changed to LEADER/en_follower_tx

Proposed Response *Response Status* **O**

Cl **201** *SC* **201.7.2.1.3** *P* **111** *L* **6** # 213

Abedinzadeh, Bizhan Infineon

Comment Type **T** *Comment Status* **X**

Figure 201-17. Reduction of min wait timers, allow for quicker linkup

SuggestedRemedy

Min wait timer for SILENT and PCS TEST should be reduced to 500us

Proposed Response *Response Status* **O**

Cl **201** *SC* **201.7.2.1.3** *P* **111** *L* **6** # 212

Abedinzadeh, Bizhan Infineon

Comment Type **T** *Comment Status* **X**

Figure 201-17 , need a state Follower transmits and Leader is silent

SuggestedRemedy

Add a state from SILENT to Training where only Follower will enter. In this state Follower should be sending SEND_T. This state shall last for min wait time of 300us. The silent period for FOLLOWER in silent state should be reduced to allow for this extra state.

Proposed Response *Response Status* **O**

Cl **201** *SC* **201.7.2.1.3** *P* **111** *L* **22** # 76

Zhu, Infineon

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

to unify the names of roles

SuggestedRemedy

change to Leader and Follower

Proposed Response *Response Status* **O**

Cl **201** *SC* **201.7.2.1.3** *P* **111** *L* **23** # 290

Razavi, Alireza Infineon

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

en_slave_tx should be replaced by en_follower_tx

SuggestedRemedy

see comment

Proposed Response *Response Status* **O**

Cl **201** *SC* **201.7.3** *P* **112** *L* **18** # 266

McCarthy, Frank Infineon

Comment Type **T** *Comment Status* **X**

Should add arrows from the reception of the Leader link sync pulse to the following transmitted pulse from the follower. This would be like a timing diagram showing the leader pulse detection at the follower causing the follower to reply with the follower pulse. The leader pulse must cause the follower to respond so that the timing between the leader and follower is stable.

SuggestedRemedy

See comment

Proposed Response *Response Status* **O**

Cl **201** *SC* **201.7.3** *P* **112** *L* **42** # 267

McCarthy, Frank Infineon

Comment Type **T** *Comment Status* **X**

For each SEND_S pulse that the follower detects, the follower is allowed to answer with one SEND_S pulse to the Leader. If follower does not detect a SEND_S pulse from the leader, then the follower skips transmitting its SEND_S pulse. A question is should a missing SEND_S pulse from the leader cause the follower to wait for three consecutive pulses from the leader before sending additional SEND_S pulses to the leader? Should the leader send a "reverse polarity" SEND_S pulse to indicate that the leader detected the SEND_S pulses from the follower? This would provide a "closed-loop" link-synchronization method, i.e. the follower would never leave before the leader had detected its SEND_S pulses.

SuggestedRemedy

Add text describing behavior when SEND_S pulse is missing.

Proposed Response *Response Status* **O**

Cl **201** *SC* **201.7.3** *P* **112** *L* **44** # 291

Razavi, Alireza Infineon

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

misspelling SENDS_S should eb replaced by SEND_S

SuggestedRemedy

see comment

Proposed Response *Response Status* **O**

Cl **201** *SC* **201.7.3.1** *P* **114** *L* **4** # 84

Wienckowski, Natalie IVN Solutions LLC

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

missing space

SuggestedRemedy

Add a non-breaking space between 3.1 and us. Also change "u" to the symbol for micro.

Proposed Response *Response Status* **O**

Cl **201** *SC* **201.7.3.2** *P* **114** *L* **20** # 77

Zhu, Infineon

Comment Type **T** *Comment Status* **X**

break_link_timer is currently fixed at 300-305us but can be more flexible for different implementations

SuggestedRemedy

change to a minimum value corresponding to different link speeds

Proposed Response *Response Status* **O**

Cl **201** *SC* **201.7.3.2** *P* **114** *L* **23** # 215

Abedinzadeh, Bizhan Infineon

Comment Type **T** *Comment Status* **X**

Link_fail_inhibit_timer shall be reduced

SuggestedRemedy

Propose changing from 100ms to 50ms

Proposed Response *Response Status* **O**

Cl **201** *SC* **201.8** *P* **112** *L* **35** # 137

Wang, Frank Realtek Semiconductor Corp.

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

typo

SuggestedRemedy

change "for the high speed path" to "for the HS_PATH"

Proposed Response *Response Status* **O**

Cl **201** *SC* **201.8** *P* **116** *L* **35** # 206

van Dyck, Peter Infineon

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

"forthe" space missing

SuggestedRemedy

Replace with "for the"

Proposed Response *Response Status* **O**

Cl **201** *SC* **201.8** *P* **116** *L* **36** # 334

Jonsson, Ragnar Infineon

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

missing space between 'for' and 'the'

SuggestedRemedy

for the high speed path

Proposed Response *Response Status* **O**

Cl **201** *SC* **201.8.1** *P* **113** *L* **50** # 138

Wang, Frank Realtek Semiconductor Corp.

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

wording

SuggestedRemedy

change "2.5GBASE-T1, 5GBASE-T1, or 10GBASE-T1" to "multiG+100M/100M+MultiGBASE-T1/V1"

Proposed Response *Response Status* **O**

Cl **201** *SC* **201.8.1** *P* **117** *L* **26** # 336

Jonsson, Ragnar Infineon

Comment Type **T** *Comment Status* **X**

For 5G and 2.5G NRZ mode, should not use the term JP03A, JP03B pattern anymore, otherwise when digital team implement it, if use the same bit sequence, it will be not what we want for NRZ mode. Or should put note on what is JP03A, JP03B pattern for NRZ mode

SuggestedRemedy

Change the text to: "Test mode 2 is for transmitter jitter testing on the MDI when the transmitter is in LEADER timing mode.
For 10G HS_PATH, when test mode 2 is enabled, the PHY shall transmit a continuous pattern of JP03A (as specified in 94.2.9.1)
or JP03B (as specified in 94.2.9.2) with the transmitted symbols timed from its local clock source. For 2.5G and 5G HS_PATH, the JP03A and JP03B signals shall be replaced with the equivalent PAM2 signals, using repeated sequence of {0,1} instead of repeated sequence of {0,3}."

Proposed Response *Response Status* **O**

Cl **201** *SC* **201.8.1** *P* **117** *L* **26** # 85

Wienckowski, Natalie IVN Solutions LLC

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

SuggestedRemedy

change character type of 94.2.9.1 to "External"

Proposed Response *Response Status* **O**

Cl **201** *SC* **201.8.1** *P* **117** *L* **26** # 243

Sakunia, Saket Infineon Technologies

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

External text reference 94.2.9.1, should be in green

SuggestedRemedy

Proposed Response *Response Status* **O**

Cl **201** *SC* **201.8.1** *P* **117** *L* **27** # 86

Wienckowski, Natalie IVN Solutions LLC

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

SuggestedRemedy

change character type of 94.2.9.2 to "External"

Proposed Response *Response Status* **O**

Cl **201** *SC* **201.8.1** *P* **117** *L* **27** # 337

Jonsson, Ragnar Infineon

Comment Type **T** *Comment Status* **X**

For PAM4 signal, to measure EOJ, need JP03B pattern since two bits form one symbol, while for NRZ signal, it's not necessary to define such a pttern anymore, can just use 1010 pattern to get duty cycle distortion (fine to call it EOJ for consistency) as in other NRZ standard (i.e. clause 130 5G KR). Also OK to define another NRZ pattern similar to JP03B pattern for consistency, maybe call it JP01B pattern

SuggestedRemedy

Proposed Response *Response Status* **O**

Cl **201** *SC* **201.8.1** *P* **117** *L* **27** # 244

Sakunia, Saket Infineon Technologies

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

External text reference 94.2.9.1, should be in green

SuggestedRemedy

Proposed Response *Response Status* **O**

Cl **201** *SC* **201.8.1** *P* **117** *L* **38** # 87

Wienckowski, Natalie — IVN Solutions LLC

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

SuggestedRemedy

change character type of 94.3.10.8 to "External"

Proposed Response *Response Status* **O**

Cl **201** *SC* **201.8.2.2** *P* **121** *L* **4** # 88

Wienckowski, Natalie — IVN Solutions LLC

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

SuggestedRemedy

change character type of 120D.3.1.2 to "External"

Proposed Response *Response Status* **O**

Cl **201** *SC* **201.8.2.2** *P* **121** *L* **8** # 240

Sakunia, Saket — Infineon Technologies

Comment Type **T** *Comment Status* **X**

Transmitter Linearity test.Test Mode 4 measurement is impacted by presence of PoC/PoDL components. The measurement method needs to be updaetd to account for presence of PoC/PoDL components

SuggestedRemedy

Update the Value of Np used in calculation to reflect the value of expected PoC/PoDL components.

Proposed Response *Response Status* **O**

Cl **201** *SC* **201.8.2.3** *P* **121** *L* **21** # 303

Penumuchu, Venkat — Infineon Technologies

Comment Type **TR** *Comment Status* **X**

The J value is 1 for 10G & 5G and 2 for 2.5G

SuggestedRemedy

J=1 for 5G, J=2 for 2.5G

Proposed Response *Response Status* **O**

Cl **201** *SC* **201.8.2.3** *P* **121** *L* **40** # 338

Jonsson, Ragnar — Infineon

Comment Type **T** *Comment Status* **X**

The jitter spec is 6ps for Follower, should it be data rate dependent as what for Leader? CH spec for 2.5G is 8ps, higher than DM one.

SuggestedRemedy

Change "6 ps" to "6/S ps", "3 ps" to "3/S ps" and "60 ps" to "60/S ps"

Proposed Response *Response Status* **O**

Cl **201** *SC* **201.8.2.4** *P* **123** *L* **16** # 236

Pandey, Sujan — Velinktech

Comment Type **ER** *Comment Status* **X**

all "HZ"

SuggestedRemedy

Hz

Proposed Response *Response Status* **O**

Cl **201** SC **201.8.2.6** P **121** L **29** # 330

Johnson, Samuel Infineon

Comment Type **T** *Comment Status* **X**

To prevent overclockingg digitial logic, and to allow for natural VCO frequency variation, we prefer to operate open-loop atbetween -20 and 0% of nominal frequency. Current spec is -10 / +10%

SuggestedRemedy

For the FOLLOWER PHY running off free-running clock, shall be within the range we prefer 5624 * S MHz +/-20%

Proposed Response *Response Status* **O**

Cl **201** SC **201.8.2.6** P **125** L **29** # 341

Jonsson, Ragnar Infineon

Comment Type **T** *Comment Status* **X**

What does short term mean? How short? Need clear definition

SuggestedRemedy

Proposed Response *Response Status* **O**

Cl **201** SC **201.8.2.6** P **125** L **29** # 377

Jonsson, Ragnar Infineon

Comment Type **T** *Comment Status* **X**

Clock accuracy in crystal-less mode: change +/-10% should be +/-20%

SuggestedRemedy

See comment

Proposed Response *Response Status* **O**

Cl **201** SC **201.8.2.8** P **125** L **9** # 241

Sakunia, Saket Infineon Technologies

Comment Type **T** *Comment Status* **X**

Table 201-11 the Max transmit swing values are significanlty higher than 802.3ch. This causes un-necessary complications in implementing PHY's in Lower geometries.

SuggestedRemedy

Please revert the values back to 802.3ch, of 1.3V max

Proposed Response *Response Status* **O**

Cl **201** SC **201.8.3.2** P **125** L **46** # 190

Zimmerman, George CME Consulting/ADI,APL Gp, Cisco, Infineon, OnSe

Comment Type **T** *Comment Status* **X**

While this test is labeled alien crosstalk, it has, for some time, been the only test in the standard for receiver noise tolerance. With the expected use of shielded media, it is time to rename it - because people think there is no alien crosstalk so they don't need to pay attention.

SuggestedRemedy

Change "Alien crosstalk noise rejection" to "Broadband stationary noise rejection" at P125 L46
Make same change at P225 L45 to 202.5.3.2.
Change "tolerance to alien crosstalk noise." at line 48, to "tolerance to broadband stationary noise from a variety of sources."
Change the title of Table 201-12 to "Broadband noise source, high speed"
at P126 L44 (after Table 201-12), add Editor's note (to be removed prior to SA ballot) - Contributors to consider whether to specify additional noise sources, such as line spectra from power management ICs, or other common self-noise from associated components.

Proposed Response *Response Status* **O**

Cl **201** SC **201.8.3.2** P **126** L **1** # 292

Razavi, Alireza Infineon

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

camma is missing after specification "specification the frame loss ratio is less than"

SuggestedRemedy

see comment

Proposed Response *Response Status* **O**

Cl **201** *SC* **201.8.3.2** *P* **126** *L* **38** # 242

Sakunia, Saket — Infineon Technologies

Comment Type **T** *Comment Status* **X**

The alien crosstalk noise source between T1 and V1 shows a 3 dBm/Hz reduction when scaled to signal levels. In differential architectures, common-mode noise is typically rejected. In contrast, single-ended architectures convert this common-mode noise into additive noise. As a result, coaxial systems are generally more vulnerable to such interference. Also Applicable for TDD

SuggestedRemedy

The Alien cross talk level for Coax needs to be evaluated differently.

Proposed Response *Response Status* **O**

Cl **201** *SC* **201.9.1** *P* **127** *L* **51** # 245

Sakunia, Saket — Infineon Technologies

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

External text reference 94.2.9.1, should be in green

SuggestedRemedy

Proposed Response *Response Status* **O**

Cl **201** *SC* **201.9.1** *P* **127** *L* **51** # 89

Wienckowski, Natalie — IVN Solutions LLC

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

SuggestedRemedy

change character type of 94.2.9.1 to "External"

Proposed Response *Response Status* **O**

Cl **201** *SC* **201.9.1** *P* **127** *L* **52** # 246

Sakunia, Saket — Infineon Technologies

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

External text reference 94.2.9.1, should be in green

SuggestedRemedy

Proposed Response *Response Status* **O**

Cl **201** *SC* **201.9.1** *P* **127** *L* **52** # 90

Wienckowski, Natalie — IVN Solutions LLC

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

SuggestedRemedy

change character type of 94.2.9.2 to "External"

Proposed Response *Response Status* **O**

Cl **201** *SC* **201.9.1** *P* **127** *L* **52** # 342

Jonsson, Ragnar — Infineon

Comment Type **T** *Comment Status* **X**

Similar as above, low speed mode, JP03A and JP03B pattern need to be reclarified, is DME applied or not?

SuggestedRemedy

Change paragraph to: "Test mode 2 is for transmitter jitter testing on the MDI when the transmitter is in LEADER timing mode. When test mode 2 is enabled, the PHY shall transmit a continuous pattern based on JP03A (as specified in 94.2.9.1) or JP03B (as specified in 94.2.9.2) with the transmitted symbols timed from its local clock source. The JP03A and JP03B signals shall be replaced with the equivalent DME signals, using repeated sequence of {0,1} instead of repeated sequence of {0,3}."

Proposed Response *Response Status* **O**

Cl **201** *SC* **201.9.1** *P* **128** *L* **2** # 91

Wienckowski, Natalie IVN Solutions LLC

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

SuggestedRemedy

change character type of 94.3.10.8 to "External"

Proposed Response *Response Status* **O**

Cl **201** *SC* **201.9.2** *P* **126** *L* **14** # 333

Johnson, Samuel Infineon

Comment Type **T** *Comment Status* **X**

For the LEADER to provide a optimal reference clock for the FOLLOWER to use in XTAL-less operation with minimal jitter, define a maximum rise and fall time of the 100MHz transmission.

See this presentation for reference:
https://www.ieee802.org/3/dm/public/1125/Razavi_3dm_02a_1125.pdf

SuggestedRemedy

Create section 201.9.2.8 "Transmitter Rise and Fall Time" and add text:

"For the LEADER to provide a optimal reference clock for the FOLLOWER to use in XTAL-less operation with minimal jitter, a maximum rise and fall time is defined for the 100MHz transmission.

--The rise and fall transition time between 20% and 80% levels of the steady state voltage amplitude shall be less than TBD ns.
--Measurement shall be performed using an all-ones sequence applied to the DME mapper. This sequence generates a deterministic square wave with frequency of 117MHz
--Testmode 4 shall be used for this measurement"

Proposed Response *Response Status* **O**

Cl **201** *SC* **201.9.2.2** *P* **128** *L* **48** # 92

Wienckowski, Natalie IVN Solutions LLC

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

SuggestedRemedy

change character type of 85.8.3.3.4 to "External"

Proposed Response *Response Status* **O**

Cl **201** *SC* **201.9.2.5** *P* **130** *L* **1** # 237

Pandey, Sujan Velinktech

Comment Type **ER** *Comment Status* **X**

dBM/Hz

SuggestedRemedy

dBm/Hz

Proposed Response *Response Status* **O**

Cl **201** *SC* **201.9.2.5** *P* **130** *L* **40** # 247

Sakunia, Saket Infineon Technologies

Comment Type **T** *Comment Status* **X**

Low Speed transmitter upped PSD mask needs to be extended beyond 400MHz. It should cover the same frequency region as High Speed Transmit PSD mask. Not doing that leaves the system vulnerable to devices introducing high frequency content beyond 400MHz

SuggestedRemedy

Extend the upper limit of PSD mask for the Low speed transmit, specify to 3500MHz

Proposed Response *Response Status* **O**

Cl **201** SC **201.9.2.5** P **131** L **1** # 293

Razavi, Alireza Infineon

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

in lines 2 and 3, wrong notation: dBM/Hz should be replaced with 'dBm/Hz'

SuggestedRemedy

see comment

Proposed Response *Response Status* **O**

Cl **201** SC **201.9.2.5** P **131** L **2** # 238

Pandey, Sujan Velinktech

Comment Type **ER** *Comment Status* **X**

dBM/Hz

SuggestedRemedy

dBm/Hz

Proposed Response *Response Status* **O**

Cl **201** SC **201.9.2.6** P **132** L **36** # 239

Pandey, Sujan Velinktech

Comment Type **ER** *Comment Status* **X**

… the transmit signalof ...

SuggestedRemedy

… the transmit signal of ...

Proposed Response *Response Status* **O**

Cl **201** SC **201.9.2.6** P **132** L **36** # 294

Razavi, Alireza Infineon

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

complex sentense and spelling error "the transmit signalof a 100M+MultiGBASE-V1 transmitter shall be" can be replaced by "the transmit signal shall be"

SuggestedRemedy

see comment

Proposed Response *Response Status* **O**

Cl **201** SC **201.9.2.6** P **132** L **36** # 93

Wienckowski, Natalie IVN Solutions LLC

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

missing space

SuggestedRemedy

Add a space between "signal" and "of".

Proposed Response *Response Status* **O**

Cl **201** SC **201.9.3** P **133** L **1** # 248

Sakunia, Saket Infineon Technologies

Comment Type **T** *Comment Status* **X**

Alien cross talk noise bandwidth should cover the high speed transmission frequency range.

SuggestedRemedy

Extend the noise bandwidth of Alien Cross Talk noise to 3500MHz

Proposed Response *Response Status* **O**

Cl **201** SC **201.11.1.3** P **135** L **31** # 249

Sakunia, Saket Infineon Technologies

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

Return loss instead of "IReturn Loss"

SuggestedRemedy

Proposed Response *Response Status* **O**

Cl **201** SC **201.13.2.1** P **138** L **17** # 162

Zimmerman, George CME Consulting/ADI,APL Gp, Cisco, Infineon, OnSe

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

Editor's note is not needed as Fmax is already scaled here.

SuggestedRemedy

Delete editor's note.

Proposed Response *Response Status* **O**

Cl **201** *SC* **201.14.3** *P* **139** *L* **22** # 188

Zimmerman, George — CME Consulting/ADI,APL Gp, Cisco, Infineon, OnSe

Comment Type **T** *Comment Status* **X**

The MDI fault tolerance for coax can't possibly be 96.8.3. That specifies short circuits & powering voltages for a differential interface. I assume we can't specify connecting the shield ground to a positive voltage, so this would only apply to the signal conductor.

SuggestedRemedy

Replace 201.14.3 text with "The signal conductor of the MDI shall, under all operating conditions, withstand without damage the application of short circuits of any wire to the shield ground or positive voltages of up to
50 V dc with the source current limited to 150 mA, as per Table 201-x, for an indefinite period of time. Normal
operation shall resume after the short circuit(s) is (are) removed.
The signal conductor of the MDI shall also withstand without damage high-voltage transient noises and ESD per
application requirements."
Add Table 201-x - Connection fault
Signal Conductor
No fault
Ground
+50 V dc
-50V dc

Proposed Response *Response Status* **O**

Cl **201** *SC* **201.16** *P* **139** *L* # 275

Lo, William — Axonne Inc

Comment Type **T** *Comment Status* **D**

Add table 201-BBB

SuggestedRemedy

Proposed Response *Response Status* **Z**

PROPOSED REJECT.

This comment was WITHDRAWN by the commenter.

Cl **201** *SC* **201.16** *P* **139** *L* # 274

Lo, William — Axonne Inc

Comment Type **T** *Comment Status* **X**

Redo delay constraints

SuggestedRemedy

1) Delete the entire contents of this section.
2) The following paragraphs are taken from 149.10 but modified:

In full duplex mode, predictable operation of the MAC Control PAUSE operation (Clause 31, Annex 31B)also demands that there be an upper bound on the propagation delays through the network. This implies that MAC, MAC Control sublayer, and PHY implementers conform to certain delay maxima, and that network planners and administrators conform to constraints regarding the cable topology and concatenation of devices.

The HS_PATH delays for an implementation of the PHY link shall not exceed the limits shown in Table 201–AAA. The data delay is measured from the input of a given unit of data at the PHY_S XGMII to the presentation of the same unit of data by the PHY_D XGMII.

The LS_PATH delays for an implementation of the PHY link shall not exceed the limits shown in Table 201–AAA. The data delay is measured from the input of a given unit of data at the PHY_D XGMII to the presentation of the same unit of data by the PHY_S XGMII.

NOTE—The physical medium interconnecting two PHYs introduces additional delay in a link.

3) Add editor's note:
Do we want to further break down the HS_TX, HS_RX, LS_TX, LS_RX delays limits or are we ok leaving this as a path delay. If it is the former then we need to define the undetectable reference point in the RS Frame at the MDI so that the TX and RX portions of the delay is measured consistently. It is not clear how to apply a shall statement on the delay limits referenced to an unmeasurable point. At best this can be determined by the vendor using RTL simulations. Maybe it is ok to leave the latter as these limits are loose enough that no vendor will do a bad implementation for fear that their silicon will fail the total path delay when interoperating with other vendors.

4) Copy table 149-20 as table 201-AAA here except the Mode is the HS_PATH.

5) Add 1 more row for the LS_PATH (100BASE-T1), (blank), 512, 1, 5120

6) Add editor's note:
Pause quanta are in units of 512 bits where in this case each 100BASE-T1 bit is 10ns. If pause quanta needs to be an integer then the choice can be either 512 or 1024 bits. An implementation of 512 bits for LS_PATH is possible but may be tight depending on the underlying implementation micro-architecture. 1024 bits seems a bit too loose. We should discuss this choice as a looser number causes the worst case delay to be 10.24 us.

Proposed Response *Response Status* **O**

Cl **201** *SC* **201-20** *P* **115** *L* **37** # 214

Abedinzadeh, Bizhan Infineon

Comment Type **T** *Comment Status* **X**

Allow restart from Link Sync when training fails

SuggestedRemedy

add loss of loc_rcvr_status to condition for state machine to transition from LINK_GOOD_CHECK to TRANSMIT_DISABLE

Proposed Response *Response Status* **O**

Cl **201** *SC* **201.8.1** *P* **120** *L* **11** # 335

Jonsson, Ragnar Infineon

Comment Type **T** *Comment Status* **X**

How to understand the transmit reference clock in the test block diagram? DUT provides reference clock to spectrum analyzer? Spectrum analyzer doesn't need refclk.

SuggestedRemedy

change the comment to "the transmit reference clock in the test block diagram" is ambigious. DUTdoes provide reference clock to spectrum analyzer. . and ask for its removal

Proposed Response *Response Status* **O**

Cl **201** *SC* **Table 201-11** *P* **125** *L* **15** # 339

Jonsson, Ragnar Infineon

Comment Type **T** *Comment Status* **D**

SuggestedRemedy

Proposed Response *Response Status* **Z**

PROPOSED REJECT.

This comment was WITHDRAWN by the commenter.

Cl **201** *SC* **201.8.2.5** *P* **125** *L* **15** # 340

Jonsson, Ragnar Infineon

Comment Type **T** *Comment Status* **X**

1.7Vdpp will violate power level 2dBm max spec. What's the meaning to increase voltage spec but still keep power level spec to be -1~2dBm?

SuggestedRemedy

Proposed Response *Response Status* **O**

Cl **202** *SC* **202.1.5** *P* **145** *L* **49** # 139

Wang, Frank Realtek Semiconductor Corp.

Comment Type **T** *Comment Status* **X**

polarity is only for T1

SuggestedRemedy

change "in the connection" to "in the connectionfor the single shielded balanced pair of conductors (T1)

Proposed Response *Response Status* **O**

Cl **202** *SC* **202.1.6** *P* **146** *L* **17** # 140

Wang, Frank Realtek Semiconductor Corp.

Comment Type **T** *Comment Status* **X**

polarity is only for T1

SuggestedRemedy

change "in the connection" to "in the connectionfor the single shielded balanced pair of conductors (T1)

Proposed Response *Response Status* **O**

Cl **202** *SC* **202.1.7** *P* **149** *L* **26** # 71

Maguire, Valerie — Copperopolis; aff'l w/ CME Consulting, Microchip, an

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

This header and text should have been deleted when the order of the LS_PATH signaling and HS_PATH signaling clauses were swapped.

SuggestedRemedy

Delete "202.1.7 L" and re-number subsequent clauses.

Proposed Response *Response Status* **O**

Cl **202** *SC* **202.1.7** *P* **149** *L* **26** # 94

Wienckowski, Natalie — IVN Solutions LLC

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

delete 202.1.7 as the title is just "L" and there is no content.

SuggestedRemedy

Delete: 202.1.7 L

Proposed Response *Response Status* **O**

Cl **202** *SC* **202.1.8** *P* **140** *L* **32** # 95

Wienckowski, Natalie — IVN Solutions LLC

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

duplicated sentence

SuggestedRemedy

Delete one instance of "All MultiG+100M/100M+MultiGBASE-T1 PHY implementations are compatible at the MDI.".

Proposed Response *Response Status* **O**

Cl **202** *SC* **202.1.8** *P* **146** *L* **30** # 141

Wang, Frank — Realtek Semiconductor Corp.

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

align with 149.1.5

SuggestedRemedy

change "at the XGMII" to "at the MDI and at the XGMII"
remove "All MultiG+100M/100M+MultiGBASE-T1 PHY implementations are compatible at the MDI. All MultiG+100M/100M+MultiGBASE-V1 PHY implementations are compatible at the MDI."

Proposed Response *Response Status* **O**

Cl **202** *SC* **202.2.1.4.2** *P* **151** *L* **2** # 142

Wang, Frank — Realtek Semiconductor Corp.

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

align with 149.2.2.4.2: insert ";"

SuggestedRemedy

change "100M+10GBASE-T1/V1 as" to "100M+10GBASE-T1/V1; as"

Proposed Response *Response Status* **O**

Cl **202** *SC* **202.2.1.7.3** *P* **155** *L* **33** # 316

Gorshe, Steve — Microchip

Comment Type **T** *Comment Status* **X**

The text should be updated to point to the clause 202 equivalent figure and subclauses, which resolves the Editor's Note.

SuggestedRemedy

Replace the current text with "The effect of the receipt of this primitive is specified in Figure 202-2, 202.3.2.3, 202.4.2.4 and 202.5." and remove the Editor's Note.

Proposed Response *Response Status* **O**

Cl **202** *SC* **202.3.2.1** *P* **161** *L* **13** # 96

Wienckowski, Natalie IVN Solutions LLC

Comment Type **T** *Comment Status* **X**

Based on the objective: Define optional startup procedure which enables the time from power_on=FALSE to a state capable of transmitting and receiving valid data to be less than 100 ms, the maximimum time available to resume normal operation after reset is 100 ms.

SuggestedRemedy

Change "(TBD) ms" to "100 ms."

Proposed Response *Response Status* **O**

Cl **202** *SC* **202.3.2.2** *P* **160** *L* **12** # 143

Wang, Frank Realtek Semiconductor Corp.

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

wording

SuggestedRemedy

change "On" to "On"

Proposed Response *Response Status* **O**

Cl **202** *SC* **202.3.2.2.5** *P* **165** *L* **10** # 144

Wang, Frank Realtek Semiconductor Corp.

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

align with 149.3.2.2.5

SuggestedRemedy

change "their mappings to control codes" to "their mappings to MultiG+100M/100M+MultiGBASE-T1/V1 control codes"

Proposed Response *Response Status* **O**

Cl **202** *SC* **202.3.2.2.5** *P* **165** *L* **14** # 145

Wang, Frank Realtek Semiconductor Corp.

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

wording: "for" is missed

SuggestedRemedy

change "Control codes MultiG+100M/100M+MultiGBASE-T1/V1" to "Control codes for MultiG+100M/100M+MultiGBASE-T1/V1"

Proposed Response *Response Status* **O**

Cl **202** *SC* **202.3.2.2.22** *P* **172** *L* **29** # 331

Johnson, Samuel Infineon

Comment Type **T** *Comment Status* **X**

For some Testmodes, a frequency locked to the test equipment is required.

SuggestedRemedy

It is recommened that a FOLLOWER PHY nominally operating in XTAL-less mode should include a test method to provide a reference clock such that the transmission rate shall be within the range of 5625 * S MHz +/- 50ppm. It is recommended that the reference clock be 117.186MHz

Proposed Response *Response Status* **O**

Cl **202** *SC* **202.3.2.2.22** *P* **172** *L* **52** # 332

Johnson, Samuel Infineon

Comment Type **T** *Comment Status* **X**

Mapping of logic0 -> +1 and logic1 -> -1 seems non-intuitive

SuggestedRemedy

If this is used by PAM2 in other standards, then leave unchanged. Otherwide, propose
Logic0 -> -1
Logic1 -> +1

Proposed Response *Response Status* **O**

Cl **202** *SC* **202.3.2.2.22** *P* **176** *L* **1** # 97

Wienckowski, Natalie IVN Solutions LLC

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

subject verb agrement

SuggestedRemedy

Change "transmit process send out" to "transmit process sends out".

Proposed Response *Response Status* **O**

Cl **202** *SC* **202.3.2.3** *P* **173** *L* **38** # 146

Wang, Frank Realtek Semiconductor Corp.

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

wording: "_" is missed (also for lines 39, 49, and 52)

SuggestedRemedy

change "block lock" to "block_lock"

Proposed Response *Response Status* **O**

Cl **202** *SC* **202.3.2.3** *P* **176** *L* **41** # 98

Wienckowski, Natalie IVN Solutions LLC

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

missing bracket

SuggestedRemedy

Change "RXD 31:0>" to "RXD <31:0>"

Proposed Response *Response Status* **O**

Cl **202** *SC* **202.3.5.2.1** *P* **183** *L* **43** # 99

Wienckowski, Natalie IVN Solutions LLC

Comment Type **T** *Comment Status* **X**

Incorrect number of bytes and awkward wording.

SuggestedRemedy

Change "four bytes header" to "eight header bytes"

Proposed Response *Response Status* **O**

Cl **202** *SC* **202.4.2.3** *P* **197** *L* **7** # 147

Wang, Frank Realtek Semiconductor Corp.

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

wording

SuggestedRemedy

change:
uses the parameters pcs_status and scr_status, and the state of the equalization, and estimation functions to determine
to:
uses the parameters pcs_status and scr_status, the state of the equalization, and estimation functions to determine
or
uses the parameters pcs_status and scr_status, and the state of the equalization and estimation functions to determine

Proposed Response *Response Status* **O**

Cl **202** *SC* **202.4.2.3** *P* **200** *L* **16** # 100

Wienckowski, Natalie IVN Solutions LLC

Comment Type **T** *Comment Status* **X**

polarity inversion applies to balanced pair only

SuggestedRemedy

at the end of the sentence add, "for balanced pair only."

Proposed Response *Response Status* **O**

Cl **202** *SC* **202.4.2.4.5** *P* **202** *L* **46** # 186

Zimmerman, George — CME Consulting/ADI,APL Gp, Cisco, Infineon, OnSe

Comment Type **T** *Comment Status* **X**

Clause 202 related to Big Ticket Item - MultiSpeed PHYs. The PHY_S has 3 speed capabilities here. In other places of the draft, they are referred to as different PHY types. It appears however, that clause 202 describes a single type with speed selection built in, rather than autonegotiated by a separate sublayer which might select other clauses as the PHY type. Assuming that this is the case, then for interoperability, at least ONE of the speed grades should be mandatory, and the others optional.
Note - while I've made a suggestion here, I'm not taking a side - but we need to be clear. If we really have an auto-negotiating set of PHY types, we need a separate sublayer, which is much more spec-writing work.

SuggestedRemedy

Append the following to line 47 (after "10 Gb/s capable.") "2.5 Gb/s support is a mandatory capability, and Oct10<5> should always be set to 1.

Proposed Response *Response Status* **O**

Cl **202** *SC* **202.4.2.4.7** *P* **201** *L* **16** # 148

Wang, Frank — Realtek Semiconductor Corp.

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

202.4.2.4.7 Phase switch PHY burst count

SuggestedRemedy

change "data switch" to "phase switch"

Proposed Response *Response Status* **O**

Cl **202** *SC* **202.4.2.4.11** *P* **202** *L* **47** # 149

Wang, Frank — Realtek Semiconductor Corp.

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

grammar: comma afrer "PrecoderSel"

SuggestedRemedy

change "PrecoderSel and" to "PrecoderSel, and"

Proposed Response *Response Status* **O**

Cl **202** *SC* **202.4.2.4.11** *P* **202** *L* **52** # 150

Wang, Frank — Realtek Semiconductor Corp.

Comment Type **T** *Comment Status* **X**

not only COUNTDOWN stage but also PCS_TEST stage

SuggestedRemedy

change "At any COUNTDOWN stage" to "At any COUNTDOWN stage and PCS_TEST stage"

Proposed Response *Response Status* **O**

Cl **202** *SC* **202.4.2.5** *P* **203** *L* **16** # 151

Wang, Frank — Realtek Semiconductor Corp.

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

wording: "_" is missed

SuggestedRemedy

change "link status" to "link_status"

Proposed Response *Response Status* **O**

Cl **202** *SC* **202.5.1** *P* **216** *L* **18** # 220

Chini, Ahmad — Broadcom

Comment Type **T** *Comment Status* **X**

The test mode 5 text does not correlate with the PSD specification of TDD as in Chini_3dm_03a_0125.pdf where the PSD specified for continous signaling with no quiet gap.

SuggestedRemedy

Change the following sentence

"When test mode 5 is enabled, the PHY shall transmit as in non-test operation and in the LEADER data mode with data set to normal interframe idle signals."

to

When test mode 5 is enabled, the PHY shall transmit idle signals continuously with no quiet gap and with transmit signal level corresponding to the normal mode of operation. The test applies to both LEADER and FOLLOWER. The clock is sourced from a stable clock with 100PPM accuracy for this test.

Proposed Response *Response Status* **O**

Cl **202** *SC* **202.5.1** *P* **216** *L* **21** # 307

Gorshe, Steve Microchip

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

Better to add the explicity local clock rate

SuggestedRemedy

Replace the paragraph "When test mode 6 …" with "When the test mode 6 is enabled, the PHY shall transmit a continuous pattern of 30 {+1} symbols followed by 30 {–1} symbols with the transmitted symbols timed from its local 3 GHz clock source."

Proposed Response *Response Status* **O**

Cl **202** *SC* **202.5.1.1** *P* **216** *L* **35** # 305

Gorshe, Steve Microchip

Comment Type **T** *Comment Status* **X**

As explained in the next comment, test fixture 6 should be removed

SuggestedRemedy

Remove the reference to Figure 202-35

Proposed Response *Response Status* **O**

Cl **202** *SC* **202.5.1.1** *P* **218** *L* **20** # 306

Gorshe, Steve Microchip

Comment Type **T** *Comment Status* **X**

Test fixture 6 is redundant relative to test fixture 5

SuggestedRemedy

Remove Figure 202-35 and replace the Figure 202-34 caption with "Transmitter test fixture 5 for MultiG+100M/100M+MultiGBASE-V1
transmitter droop measurement, transmitter linearity measurement, power spectral density measurement, transmit power level measurement, and MDI jitter"

Proposed Response *Response Status* **O**

Cl **202** *SC* **202.5.2** *P* **218** *L* **36** # 101

Wienckowski, Natalie IVN Solutions LLC

Comment Type **T** *Comment Status* **X**

The 50 ohm load is not a differential load. Change the text to match 201.8.2 and 201.9.2.

SuggestedRemedy

Change: Where a load is not specified, the transmitter shall meet the requirements of this clause with a 100 Ω for MultiG+100M/100M+MultiGBASE-T1 or a 50 Ω for MultiG+100M/100M+MultiGBASE-V1 resistive differential load connected to each transmitter output.
To: Where a load is not specified, the transmitter shall meet the requirements of this clause with a 100 Ω resistive differential load connected to each transmitter output when connected to a -T1 link, and a 50 Ω
resistive load connected to each single-ended transmitter output when connected to a -V1 link.

Proposed Response *Response Status* **O**

Cl **202** *SC* **202.5.2.3** *P* **220** *L* **22** # 309

Gorshe, Steve Microchip

Comment Type **T** *Comment Status* **X**

Need to clarify that this pertains to both transmitter timing jitter and transmitter jitter at the MDI

SuggestedRemedy

Add the following sentence at the beginning of the first paragraph of 202.5.2.3: "This clause applies to both Transmitter Timing jitter and Transmitter jitter on the MDI."

Proposed Response *Response Status* **O**

Cl **202** *SC* **202.5.2.3** *P* **220** *L* **23** # 308

Gorshe, Steve Microchip

Comment Type **T** *Comment Status* **X**

This first paragraph and its two numbered bullets need updating for a correction and greater clarity.

SuggestedRemedy

In the first paragraph of 202.5.2.3 delete "using test fixture 2 (see Figure 202-31". In the first bullet, replace "test mode 1" with "test mode 2 using test fixture 1 for -T1 and test fixture 5 for -V1" In the second numbered bullet, after "test mode 1" add the phrase "using test fixture 2"

Proposed Response *Response Status* **O**

Cl **202** *SC* **202.5.2.3.1** *P* **220** *L* **40** # 310

Gorshe, Steve Microchip

Comment Type **T** *Comment Status* **X**

Ths sub-clause doesn't directly pertain to TDD, and the relavant information is captured above.

SuggestedRemedy

Remove 202.5.2.3.1

Proposed Response *Response Status* **O**

Cl **202** *SC* **202.5.2.3.2** *P* **220** *L* **40** # 311

Gorshe, Steve Microchip

Comment Type **T** *Comment Status* **X**

Ths sub-clause doesn't directly pertain to TDD, and the relavant information is captured above.

SuggestedRemedy

Remove 202.5.2.3.2

Proposed Response *Response Status* **O**

Cl **202** *SC* **202.5.2.4** *P* **224** *L* **1** # 218

Chini, Ahmad Broadcom

Comment Type **T** *Comment Status* **X**

Power spectral density Uppe/ Lower Masks shown for 10G+100MBASE-T1 is not correct.

SuggestedRemedy

Replace with the correct Plot shown in the page 7 of https://www.ieee802.org/3/dm/public/0125/Chini_3dm_03a_0125.pdf

Proposed Response *Response Status* **O**

Cl **202** *SC* **202.5.2.5** *P* **225** *L* **7** # 219

Chini, Ahmad Broadcom

Comment Type **T** *Comment Status* **X**

Transmitter peak-to-peak output in Table 202-17 does not correlate with TDD Upper PSD MASK and for a PoC corner of 7MHz (corresponding to MDI RL limit line).
See Chini_3dm_01a_0126.pdf for simulation and calculations.

SuggestedRemedy

Replace the values in the table 202.17 with max Peak to Peak of 1.3Vpp for 2.5G+100BASE-T1 and 100M+MultiGBASE-T1 and 1.5Vpp for both 5G+100MBASE-T1. 10G+100MBASE-T1 remains to be 1.7Vpp.

Half of the mentioned values apply to V1.
In addition change V1 to T1 in the first Column

Proposed Response *Response Status* **O**

Cl **202** *SC* **202.5.3.2** *P* **225** *L* **48** # 321

Gorshe, Steve Microchip

Comment Type **T** *Comment Status* **X**

There have been no presentations on this topic and the 802.3ch limits may not be appropriate.

SuggestedRemedy

Add "Presentations on this topic are needed." to the Editor's Note

Proposed Response *Response Status* **O**

Cl **202** *SC* **202.6** *P* **226** *L* **3** # 304

Gorshe, Steve Microchip

Comment Type **T** *Comment Status* **X**

Open clause with no text

SuggestedRemedy

Insert the following text: "2.5G+100MBASE-T1, 5G+100MBASE-T1, 10G+100MBASE-T1, 2.5G+100MBASE-V1, 5G+100MBASE-V1, 10G+100MBASE-V1, 100M+2.5GMBASE-T1, 100M+5GBASE-T1, 100M+10GBASE-T1, 100M+2.5GBASE-V1, and 100M+5GMBASE-V1, 100M+10GBASE-V12.5GBASE-T1, 5GBASE-T1, and 10GBASE-T1 make extensive use of the management functions that may be provided by the optional MDIO (Clause 45), and the communication and self-configuration functions provided by the optional (TBD pending decision on the need for AN) Auto-Negotiation (See Clause 98)."

Proposed Response *Response Status* **O**

Cl **202** *SC* **202.8.1.4** *P* **230** *L* **1** # 312

Gorshe, Steve Microchip

Comment Type **T** *Comment Status* **X**

Coupling attenuation only pertains to differential pair cables and is not defined for coaxial cables

SuggestedRemedy

Replace the TBD with "Coupling attenuation is not not defined for coaxial cables.

Proposed Response *Response Status* **O**

Cl **202** *SC* **202.8.1.5** *P* **230** *L* **9** # 322

Gorshe, Steve Microchip

Comment Type **T** *Comment Status* **X**

Adopt the limits from https://ieee802.org/3/dm/public/0524/Coax_Cables_Silvano_de_Sousa_ISAAC_Interim_may_2024(002).pdf

SuggestedRemedy

Remove the Editor's note and insert,
"The screening attenuation for 100M+MultiGBASE-V1 and MultiG+100MBASE-V1 link segments, measured in accordance with ISO 19642-11, shall meet the values determined using Equation (202–2X). Additional screening attenuation test methodologies are defined in Annex 149A.

Screening attenuation(f) ≤

-75	10≤f<3000	dB
-50	3000≤f<5000	

where
f is the frequency in MHz;

Equation (202–2X) is plotted in Figure 202–XX which is provided for information only."

Grant Editor's license to apply to equation, numbering, and figure creation style. Grant Editor's license to add ISO 19642-11 details to subclause 1.3 Normative references.

Proposed Response *Response Status* **O**

Cl **202** *SC* **202.8.2** *P* **230** *L* **19** # 323

Gorshe, Steve Microchip

Comment Type **T** *Comment Status* **X**

Since this is a heading for the subsequent subclauses, no text is needed.

SuggestedRemedy

Remove the Editor's Note.

Proposed Response *Response Status* **O**

Cl **202** *SC* **202.8.2.1** *P* **230** *L* **24** # 326

Gorshe, Steve Microchip

Comment Type **T** *Comment Status* **X**

Clause 149 is specific to differential pairs. There have been no presentations on this topic, especially regarding its relationship to coaxial cables.

SuggestedRemedy

Copy and insert the text currently found in 201.12.2.1 for -T1. Add "Presentations on this topic are needed for -V1." to the Editor's Note.

Grant Editor's license to apply to equation, numbering, and figure creation style.

Proposed Response *Response Status* **O**

Cl **202** *SC* **202.8.2.2** *P* **230** *L* **30** # 327

Gorshe, Steve Microchip

Comment Type **T** *Comment Status* **X**

Clause 149 is specific to differential pairs. There have been no presentations on this topic, especially regarding its relationship to coaxial cables.

SuggestedRemedy

Copy and insert the text currently found in 201.12.2.2 for -T1. Add "Presentations on this topic are needed for -V1." to the Editor's Note.

Grant Editor's license to apply to equation, numbering, and figure creation style.

Proposed Response *Response Status* **O**

Cl **202** *SC* **202.9.2.1** *P* **231** *L* **17** # 163

Zimmerman, George CME Consulting/ADI,APL Gp, Cisco, Infineon, OnSe

Comment Type **T** *Comment Status* **X**

If Fmax should scale with baud rate, there should be different Fmax's listed - but there aren't. The link segment parameters are not scaled. If there is a scaling it would only be applicable to 2.5G+100BASE-T1.

SuggestedRemedy

Suggest delete editor's note, and add, "For 2.5GBASE-T1

Proposed Response *Response Status* **O**

Cl **202** *SC* **202.9.3** *P* **232** *L* **29** # 315

Gorshe, Steve Microchip

Comment Type **T** *Comment Status* **X**

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SuggestedRemedy

Remove the Editor's Note and insert the sentence “MDI fault tolerance shall comply with 96.8.3.”

Proposed Response *Response Status* **O**

Cl **202** *SC* **202.10.1** *P* **232** *L* **11** # 313

Gorshe, Steve Microchip

Comment Type **T** *Comment Status* **X**

Since this is indepent of modulation, it can use the same language as 201.14.1.

SuggestedRemedy

Replace the TBD with ; “Where coaxial cabling is used, the mechanical interface to the coaxial cabling is a single pin connector with a shield. Further specification of the mechanical interface is beyond the scope of this standard.”

Proposed Response *Response Status* **O**

Cl **202** *SC* **202.10.2.1** *P* **232** *L* **23** # 314

Gorshe, Steve Microchip

Comment Type **T** *Comment Status* **X**

Both -T1 and -V1 would have the same return loss parameters.

SuggestedRemedy

Remove the Editor's Note and insert the sentence “MDI return loss shall comply with 202.9.2.1.”

Proposed Response *Response Status* **O**

Cl **202** *SC* **202.10.3** *P* **232** *L* **29** # 325

Gorshe, Steve Microchip

Comment Type **T** *Comment Status* **X**

Replace the Editor's Note box and TBD with the proposed text and table.

SuggestedRemedy

See attached file.

Proposed Response *Response Status* **O**