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

Pandey, Sujan
Velinktech

*Comment Type* **ER** *Comment Status* **D** *EZ*

automotive Ethernet, 100M+2.5GMBASE-T1

*SuggestedRemedy*

automotive Ethernet, 100M+2.5GBASE-T1

*Proposed Response* *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Do a global replace of "2.5GMBASE" with "2.5GBASE"

Val in Clause 202

---

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

Pandey, Sujan
Velinktech

*Comment Type* **ER** *Comment Status* **D** *EZ*

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

*SuggestedRemedy*

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

*Proposed Response* *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Do a global replace of "5GMBASE" with "5GBASE"

Val in Clause 202

---

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

Gorshe, Steve
Microchip

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

*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This comment was WITHDRAWN by the commenter.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** *EZ*

*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This comment was WITHDRAWN by the commenter.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** *EZ*

*SuggestedRemedy*

*Proposed Response* *Response Status* **Z**

PROPOSED REJECT.

This comment was WITHDRAWN by the commenter.

---

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

Gorshe, Steve
Microchip

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

*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This comment was WITHDRAWN by the commenter.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** *EZ*

*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This comment was WITHDRAWN by the commenter.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* **D** *EZ*

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* **W**

PROPOSED ACCEPT.

---

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* **D** *EZ*

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* **W**

PROPOSED ACCEPT.

---

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* **D** *EZ*

Definition for coaxial cable is OK as is.

*SuggestedRemedy*

No change to text, delete 1.4.248 from the draft

*Proposed Response* *Response Status* **W**

PROPOSED ACCEPT.

---

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* **D** *EZ*

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* **W**

PROPOSED ACCEPT.

---

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* **D** *EZ*

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* **W**

PROPOSED ACCEPT.

*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* **D** *EZ*

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* **W**

PROPOSED ACCEPT.

---

*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* **D** *Duplexing Method*

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* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Need people to commit to working on this.

---

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

Lasry, Ariel — Qualcomm Technologies Inc.

*Comment Type* **E** *Comment Status* **D** *EZ*

Typo "/" used instead of "+"

*SuggestedRemedy*

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

*Proposed Response* *Response Status* **W**

PROPOSED ACCEPT.

---

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

Lasry, Ariel — Qualcomm Technologies Inc.

*Comment Type* **E** *Comment Status* **D** *EZ*

Typo "/" used instead of "+"

*SuggestedRemedy*

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

*Proposed Response* *Response Status* **W**

PROPOSED ACCEPT.

---

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

Lasry, Ariel — Qualcomm Technologies Inc.

*Comment Type* **E** *Comment Status* **D** *EZ*

Typo "/" used instead of "+"

*SuggestedRemedy*

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

*Proposed Response* *Response Status* **W**

PROPOSED ACCEPT.

---

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

Lasry, Ariel — Qualcomm Technologies Inc.

*Comment Type* **E** *Comment Status* **D** *EZ*

Typo "/" used instead of "+"

*SuggestedRemedy*

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

*Proposed Response* *Response Status* **W**

PROPOSED ACCEPT.

*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* **D** *ACT Autonegotiation*

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* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Does ACT want/need Auto negotiation? Does it make sense to Auto negotiate between Symmetric and Asymmetric PHYs?

---

*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* **D** *EZ*

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* **W**

PROPOSED ACCEPT.

---

*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* **D** *Duplexing Method*

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* **W**

PROPOSED ACCEPT.

---

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

Lasry, Ariel — Qualcomm Technologies Inc.

*Comment Type* **E** *Comment Status* **D** *EZ*

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

*SuggestedRemedy*

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

*Proposed Response* *Response Status* **W**

PROPOSED ACCEPT.

---

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

Pandey, Sujan — Velinktech

*Comment Type* **ER** *Comment Status* **D** *EZ*

100M+2.5GMBASE-T1, ...

*SuggestedRemedy*

100M+2.5GBASE-T1, ...

*Proposed Response* *Response Status* **W**

PROPOSED ACCEPT.

---

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

Lasry, Ariel — Qualcomm Technologies Inc.

*Comment Type* **E** *Comment Status* **D** *EZ*

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

*SuggestedRemedy*

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

*Proposed Response* *Response Status* **W**

PROPOSED ACCEPT.

---

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

Pandey, Sujan — Velinktech

*Comment Type* **ER** *Comment Status* **D** *EZ*

100M+5GMBASE-T1, ...

*SuggestedRemedy*

100M+5GBASE-T1, ...

*Proposed Response* *Response Status* **W**

PROPOSED ACCEPT.

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

Lasry, Ariel — Qualcomm Technologies Inc.

*Comment Type* **E** *Comment Status* **D** *EZ*

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

*SuggestedRemedy*

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

*Proposed Response* *Response Status* **W**

PROPOSED ACCEPT.

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

Pandey, Sujan — Velinktech

*Comment Type* **ER** *Comment Status* **D** *EZ*

2.5GMBASE-T1

*SuggestedRemedy*

2.5GBASE-T1

*Proposed Response* *Response Status* **W**

PROPOSED ACCEPT.

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

Pandey, Sujan — Velinktech

*Comment Type* **ER** *Comment Status* **D** *EZ*

2.5GMBASE-T1

*SuggestedRemedy*

2.5GBASE-T1

*Proposed Response* *Response Status* **W**

PROPOSED ACCEPT.

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

Lasry, Ariel — Qualcomm Technologies Inc.

*Comment Type* **E** *Comment Status* **D** *EZ*

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

*SuggestedRemedy*

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

*Proposed Response* *Response Status* **W**

PROPOSED ACCEPT.

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

Lasry, Ariel — Qualcomm Technologies Inc.

*Comment Type* **E** *Comment Status* **D** *EZ*

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* **W**

PROPOSED ACCEPT.

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

Lasry, Ariel — Qualcomm Technologies Inc.

*Comment Type* **E** *Comment Status* **D** *EZ*

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* **W**

PROPOSED ACCEPT.

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

Lasry, Ariel — Qualcomm Technologies Inc.

*Comment Type* **E** *Comment Status* **D** *EZ*

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* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Add editing instruction before 45.22.1.24: Change the title of the following subsection as follows:
Change the title to add "/V1" after T1 in underline

Modify the editing instruction on P40/L3 to read: Change the title of Table 45-178 as follows and replace …(the reset is the same).

Change the table title to add "/V1" after T1 in underline.

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

Lasry, Ariel — Qualcomm Technologies Inc.

*Comment Type* **E** *Comment Status* **D** *EZ*

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* **W**

PROPOSED REJECT.

The list of which PHY type is selected based on the setting of the bits was removed from the 45.2.1.214.2 text by IEEE Std 802.3da-202x. Therefore, it will not longer exist when IEEE Std 802.3dm-202x is published.

*Cl* **46** *SC* **46.1** *P* **41** *L* **19** # 167

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

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

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* **W**

PROPOSED ACCEPT IN PRINCIPLE.

The Clause and subclause were update to reflect that this is in 46.1, not 45.1.

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

Lasry, Ariel — Qualcomm Technologies Inc.

*Comment Type* **E** *Comment Status* **D** *Asymmetric*

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* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Is this really necessary? TFTD

*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* **D** *Asymmetric*

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* **W**

PROPOSED ACCEPT.

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

Kleinwaechter, Mathias — in-tech

*Comment Type* **E** *Comment Status* **D** *EZ*

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* **W**

PROPOSED ACCEPT.

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

Wienckowski, Natalie — IVN Solutions LLC

*Comment Type* **E** *Comment Status* **D** *EZ*

delete as it is not needed

*SuggestedRemedy*

Delete: 46.6.1 Introduction

*Proposed Response* *Response Status* **W**

PROPOSED ACCEPT.

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

Wienckowski, Natalie — IVN Solutions LLC

*Comment Type* **E** *Comment Status* **D** *EZ*

delete as it is not needed

*SuggestedRemedy*

Delete: 46.6.2 Identification

*Proposed Response* *Response Status* **W**

PROPOSED ACCEPT.

*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* **D** *Asymmetric*

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* **W**

PROPOSED ACCEPT.

Consider mocking up to share with the group.

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

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

*Comment Type* **E** *Comment Status* **D** *ACT Autonegotiation*

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* **W**

PROPOSED ACCEPT IN PRINCIPLE.

TDD does not currently include Auto negotiaton, they select the speed during startup.

Does ACT want/need Auto negotiation? Does it make sense to Auto negotiate between Symmetric and Asymmetric PHYs?

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

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

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

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* **W**

PROPOSED ACCEPT IN PRINCIPLE.

How do we want to do powering for Coax? Create a new Clause, create an Annex like we've done for Coupling and screening attenuation?

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

Lasry, Ariel — Qualcomm Technologies Inc.

*Comment Type* **E** *Comment Status* **D** *EZ*

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* **W**

PROPOSED ACCEPT.

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

Kleinwaechter, Mathias — in-tech

*Comment Type* **ER** *Comment Status* **D** *EZ*

typo

*SuggestedRemedy*

100M+5GBASE-V1

*Proposed Response* *Response Status* **W**

PROPOSED ACCEPT.

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

Lasry, Ariel — Qualcomm Technologies Inc.

*Comment Type* **E** *Comment Status* **D** *EZ*

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

*SuggestedRemedy*

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

*Proposed Response* *Response Status* **W**

PROPOSED ACCEPT.

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

Razavi, Alireza — Infineon

*Comment Type* **E** *Comment Status* **D** *EZ*

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

*SuggestedRemedy*

see comment

*Proposed Response* *Response Status* **W**

PROPOSED ACCEPT.

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

Wienckowski, Natalie IVN Solutions LLC

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

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* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Val to implement 202.1.1

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

Wienckowski, Natalie IVN Solutions LLC

*Comment Type* **E** *Comment Status* **D** *EZ*

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* **W**

PROPOSED ACCEPT.

*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* **D** *EZ*

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* **W**

PROPOSED ACCEPT IN PRINCIPLE.

This is in table 200-1, 201-2, and 202-2

Change: Cable Type
To: Medium Interface

Change: SBP
To: Differential (balanced)

Change: Coax
To: Single-ended (unbalanced)

Val to update Table 202-2.

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

Lasry, Ariel Qualcomm Technologies Inc.

*Comment Type* **E** *Comment Status* **D** *EZ*

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

*SuggestedRemedy*

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

*Proposed Response* *Response Status* **W**

PROPOSED ACCEPT.

*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* **D** *EZ*

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* **W**

PROPOSED ACCEPT.

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

Lasry, Ariel — Qualcomm Technologies Inc.

*Comment Type* **E** *Comment Status* **D** *EZ*

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* **W**

PROPOSED ACCEPT.

*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* **D** *EZ*

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* **W**

PROPOSED ACCEPT.

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

Lasry, Ariel — Qualcomm Technologies Inc.

*Comment Type* **E** *Comment Status* **D** *EZ*

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

*SuggestedRemedy*

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

*Proposed Response* *Response Status* **W**

PROPOSED ACCEPT.

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

Wienckowski, Natalie — IVN Solutions LLC

*Comment Type* **E** *Comment Status* **D** *EZ*

typo

*SuggestedRemedy*

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

*Proposed Response* *Response Status* **W**

PROPOSED ACCEPT.

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

Lasry, Ariel — Qualcomm Technologies Inc.

*Comment Type* **E** *Comment Status* **D** *EZ*

Typo

*SuggestedRemedy*

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

*Proposed Response* *Response Status* **W**

PROPOSED ACCEPT.

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

Johnson, Samuel — Infineon

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

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* **W**

PROPOSED REJECT.

This is common with 802.3ch and other Automotive PHYs.

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

Lasry, Ariel — Qualcomm Technologies Inc.

*Comment Type* **E** *Comment Status* **D** *EZ*

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* **W**

PROPOSED ACCEPT.

---

*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* **D** *EZ*

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* **W**

PROPOSED ACCEPT.

Val to implement changes in 202.

---

*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* **D** *EZ*

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

*SuggestedRemedy*

Delete "Parameters "

*Proposed Response* *Response Status* **W**

PROPOSED ACCEPT.

---

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

Pandey, Sujan — Velinktech

*Comment Type* **ER** *Comment Status* **D** *EZ*

Parameters The transmission ...

*SuggestedRemedy*

The transmission ...

*Proposed Response* *Response Status* **W**

PROPOSED ACCEPT.

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*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* **D** *EZ*

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* **W**

PROPOSED ACCEPT.

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*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* **D** *Common MDI*

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* **W**

PROPOSED ACCEPT IN PRINCIPLE.

TFTD

The reason the content was here is because it was agreed to by a TF Motion. At the time, Fmax was not defined.

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

Kleinwaechter, Mathias in-tech

*Comment Type* **ER** *Comment Status* **D** *EZ*

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* **W**

PROPOSED ACCEPT.

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

Pandey, Sujan Velinktech

*Comment Type* **ER** *Comment Status* **D** *Common MDI*

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* **W**

PROPOSED ACCEPT.

The text may be deleted if comment #164 is accepted.

*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* **D** *Common MDI*

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* **W**

PROPOSED ACCEPT.

The text may be deleted if comment #164 is accepted.

*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* **D** *Common MDI*

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* **W**

PROPOSED ACCEPT.

The text may be deleted if comment #164 is accepted.

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

Kleinwaechter, Mathias in-tech

*Comment Type* **ER** *Comment Status* **D** *EZ*

typo

*SuggestedRemedy*

100M+.25GBASE-V1

*Proposed Response* *Response Status* **W**

PROPOSED ACCEPT.

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

Kleinwaechter, Mathias in-tech

*Comment Type* **ER** *Comment Status* **D** *EZ*

typo

*SuggestedRemedy*

100M+5GBASE-V1

*Proposed Response* *Response Status* **W**

PROPOSED ACCEPT.

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

Lasry, Ariel Qualcomm Technologies Inc.

*Comment Type* **E** *Comment Status* **D** *EZ*

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* **W**

PROPOSED ACCEPT.

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

Lasry, Ariel Qualcomm Technologies Inc.

*Comment Type* **E** *Comment Status* **D** *EZ*

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

*SuggestedRemedy*

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

*Proposed Response* *Response Status* **W**

PROPOSED ACCEPT.

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

Lasry, Ariel Qualcomm Technologies Inc.

*Comment Type* **E** *Comment Status* **D** *EZ*

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* **W**

PROPOSED ACCEPT.

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

Lasry, Ariel Qualcomm Technologies Inc.

*Comment Type* **E** *Comment Status* **D** *EZ*

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

*SuggestedRemedy*

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

*Proposed Response* *Response Status* **W**

PROPOSED ACCEPT.

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

Kleinwaechter, Mathias in-tech

*Comment Type* **ER** *Comment Status* **D** *EZ*

typo

*SuggestedRemedy*

100M+.25GBASE-V1

*Proposed Response* *Response Status* **W**

PROPOSED ACCEPT.

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

Kleinwaechter, Mathias in-tech

*Comment Type* **ER** *Comment Status* **D** *EZ*

typo

*SuggestedRemedy*

100M+5GBASE-V1

*Proposed Response* *Response Status* **W**

PROPOSED ACCEPT.

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

Lasry, Ariel Qualcomm Technologies Inc.

*Comment Type* **E** *Comment Status* **D** *EZ*

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* **W**

PROPOSED ACCEPT.

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

Lasry, Ariel Qualcomm Technologies Inc.

*Comment Type* **E** *Comment Status* **D** *EZ*

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

*SuggestedRemedy*

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

*Proposed Response* *Response Status* **W**

PROPOSED ACCEPT.

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

Kleinwaechter, Mathias in-tech

*Comment Type* **ER** *Comment Status* **D** *EZ*

typo

*SuggestedRemedy*

100M+.25GBASE-V1

*Proposed Response* *Response Status* **W**

PROPOSED ACCEPT.

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

Kleinwaechter, Mathias in-tech

*Comment Type* **ER** *Comment Status* **D** *EZ*

typo

*SuggestedRemedy*

100M+5GBASE-V1

*Proposed Response* *Response Status* **W**

PROPOSED ACCEPT.

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

Lasry, Ariel Qualcomm Technologies Inc.

*Comment Type* **E** *Comment Status* **D** *EZ*

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* **W**

PROPOSED ACCEPT.

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

Lasry, Ariel Qualcomm Technologies Inc.

*Comment Type* **E** *Comment Status* **D** *EZ*

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

*SuggestedRemedy*

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

*Proposed Response* *Response Status* **W**

PROPOSED ACCEPT.

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

Lasry, Ariel Qualcomm Technologies Inc.

*Comment Type* **E** *Comment Status* **D** *EZ*

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* **W**

PROPOSED ACCEPT.

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

Lasry, Ariel Qualcomm Technologies Inc.

*Comment Type* **E** *Comment Status* **D** *EZ*

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

*SuggestedRemedy*

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

*Proposed Response* *Response Status* **W**

PROPOSED ACCEPT.

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

Pandey, Sujan Velinktech

*Comment Type* **ER** *Comment Status* **D** *EZ*

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* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Change "at" to "and"

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

Razavi, Alireza Infineon

*Comment Type* **E** *Comment Status* **D** *EZ*

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

*SuggestedRemedy*

see comment

*Proposed Response* *Response Status* **W**

PROPOSED ACCEPT.

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

Razavi, Alireza Infineon

*Comment Type* **E** *Comment Status* **D** *EZ*

HS_RX' is missing after 'PHY_D'

*SuggestedRemedy*

see comment

*Proposed Response* *Response Status* **W**

PROPOSED ACCEPT.

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

Razavi, Alireza Infineon

*Comment Type* **E** *Comment Status* **D** *ACT Nomenclature*

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* **W**

PROPOSED REJECT.

The definitions of PHY_D and PHY_S can be found in 201.1.1. LSHS and HSLS are not defined in the draft.

*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* **D** *EZ*

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* **W**

PROPOSED ACCEPT.

*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* **D** *ACT Autonegotiation*

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* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Does ACT want/need Auto negotiation? Does it make sense to Auto negotiate between Symmetric and Asymmetric PHYs?

*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* **D** *ACT Autonegotiation*

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* **W**

PROPOSED ACCEPT IN PRINCIPLE.

See question in comment #187

Does ACT want/need Auto negotiation? Does it make sense to Auto negotiate between Symmetric and Asymmetric PHYs?

TFTD - Can both devices be LEADER or FOLLOWER or should this be fixed.

Resolve with comment #344.

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

Razavi, Alireza — Infineon

*Comment Type* **E** *Comment Status* **D** *ACT EEE*

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

*SuggestedRemedy*

see comment

*Proposed Response* *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Remove the following from Figure 201-1:
- tx_lpi_active and associated line
- remove NOTE 2 on the Figure

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

Abedinzadeh, Bizhan Infineon

*Comment Type* **E** *Comment Status* **D** *ACT EEE*

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* **W**

PROPOSED ACCEPT IN PRINCIPLE.

See comment #300

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

Jonsson, Ragnar Infineon

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

Missing LSS Tx path

*SuggestedRemedy*

Add LSS Tx Path

*Proposed Response* *Response Status* **Z**

PROPOSED REJECT.

This comment was WITHDRAWN by the commenter.

*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* **D** *EZ*

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* **W**

PROPOSED ACCEPT.

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

Lasry, Ariel Qualcomm Technologies Inc.

*Comment Type* **E** *Comment Status* **D** *EZ*

Typo missing "HS_TX" before "PMA TRANSMIT"

*SuggestedRemedy*

add "HS_TX " before "PMA TRANSMIT"

*Proposed Response* *Response Status* **W**

PROPOSED ACCEPT.

*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* **D** *ACT EEE*

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* **W**

PROPOSED ACCEPT IN PRINCIPLE.

See comment #300

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

Razavi, Alireza Infineon

*Comment Type* **E** *Comment Status* **D** *ACT EEE*

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* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Remove the following from Figure 201-2:
- rx_lpi_active and associated line
- alert_detect and associated line
- remove NOTE 2 on the Figure

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

Abedinzadeh, Bizhan Infineon

*Comment Type* **E** *Comment Status* **D** *ACT EEE*

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* **W**

PROPOSED ACCEPT IN PRINCIPLE.

See comment #301.

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

Jonsson, Ragnar Infineon

*Comment Type* **T** *Comment Status* **D** *ACT Autonegotiation*

Clock recovery is optional for leader

*SuggestedRemedy*

Mark "Clock Recovery" optional

*Proposed Response* *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

TFTD - Can both devices be LEADER or FOLLOWER or should this be fixed.

Resolve with comment #183.

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

Lasry, Ariel Qualcomm Technologies Inc.

*Comment Type* **E** *Comment Status* **D** *EZ*

Typo missing "LS_TX" before "PMA TRANSMIT"

*SuggestedRemedy*

add "LS_TX " before "PMA TRANSMIT"

*Proposed Response* *Response Status* **W**

PROPOSED ACCEPT.

*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* **D** *ACT EEE*

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* **W**

PROPOSED ACCEPT IN PRINCIPLE.

See comment #301.

*Cl* **201** *SC* **201.1.4.1** *P* **77** *L* **4** # 401

Muma, Scott Microchip

*Comment Type* **T** *Comment Status* **D** *ACT Introduction*

I would recommend describing the PCS layer from the PHY_D/PHY_S perspective rather than HS_PATH/LS_PATH. The wording in this paragraphs shows how challenging it is to talk about a PCS from a path perspective, but then to say it contains a management interface, and XGMII interface, etc. when this is referring to 2 different interfaces in separate PHY instances.

*SuggestedRemedy*

Describe the PHY_S PCS sublayer which has an XGMII interface, a single management interface, a PMA interface, etc. Describe the data format of the PHY_S Tx referring to 149.3 of the HS_TX as desired. Add any specifics needed for LS_RX.

*Proposed Response* *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

TFTD
Replace 201.1.4.1 with

201.1.4.1 PHY_S Functional Description

The PHY_S device integrates the high-speed transmit path and low-speed receive path required for asymmetric operation over the automotive link. The top-level arrangement of the PCS, PMA, synchronization, monitoring, and clock-recovery blocks is shown in Figure 201-1. While the block diagram illustrates data, status, and control flow among these elements, the detailed functional definitions are provided in the remainder of Clause 201, including service primitives and interfaces in 201.2, PCS behaviors in 201.3, OAM in 201.3.8, PMA functions in 201.5, common PMA functionality in 201.7, and start-up and link-level sequencing in 201.7.x.

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

van Dyck, Peter Infineon

*Comment Type* **E** *Comment Status* **D** *EZ*

Not a proper sentence

*SuggestedRemedy*

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

*Proposed Response* *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Change: In the HS_PATH, the PCS functions as specified in 149.3, ...

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

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

Lasry, Ariel Qualcomm Technologies Inc.

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

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* **W**

PROPOSED ACCEPT.

*Cl* **201** *SC* **201.1.4.2** *P* **77** *L* **17** # 402

Muma, Scott Microchip

*Comment Type* **T** *Comment Status* **D** *ACT Introduction*

I would recommend describing the PCS layer from the PHY_D/PHY_S perspective rather than HS_PATH/LS_PATH. The wording in this paragraphs shows how challenging it is to talk about a PCS from a path perspective, but then to say it contains a management interface, and XGMII interface, etc. when this is referring to 2 different interfaces in separate PHY instances.

*SuggestedRemedy*

Describe the PHY_D PCS sublayer which has an XGMII interface, a single management interface, a PMA interface, etc. Describe the data format of the PHY_D Tx as the LS_TX and add any specifics needed for HS_RX.

*Proposed Response* *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

TFTD

Replace 201.1.4.2 with

201.1.4.2 PHY_D Functional Description

The PHY_D device provides the complementary asymmetric direction, implementing the low-speed transmit and high-speed receive paths together with the associated PCS, PMA, synchronization, monitoring, and clock-recovery blocks. Its overall architecture is illustrated in Figure 201-2, which shows control and data interactions between the PCS and PMA elements. Complete behavior and state definitions are distributed across Clause 201, including primitives and interfaces in 201.2, PCS low-speed functions in 201.4, OAM in 201.4.8, PMA sublayer operation in 201.5, common PMA mechanisms in 201.7, and link monitor, start-up, and timing functions in 201.7.x.

*Cl* **201** *SC* **201.1.4.2** *P* **77** *L* **18** # 108

Wang, Frank Realtek Semiconductor Corp.

*Comment Type* **E** *Comment Status* **D** *EZ*

grammar

*SuggestedRemedy*

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

*Proposed Response* *Response Status* **W**

PROPOSED ACCEPT.

corrected page number

Cl **201** SC **201.1.4.2** P **77** L **23** # 109

Wang, Frank — Realtek Semiconductor Corp.

*Comment Type* **E** *Comment Status* **D** *EZ*

typo

*SuggestedRemedy*

change "Reserved" to "reserved"

*Proposed Response* *Response Status* **W**

PROPOSED ACCEPT.

corrected page number

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* **D** *EZ*

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* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Do a search in the text and in the Figures, as this can be found in both.

Val to check Clause 202.

Also need to submit a Maintenance request as this is not consistent in 802.3.

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

Razavi, Alireza — Infineon

*Comment Type* **E** *Comment Status* **D** *EZ*

word Finally should be removed

*SuggestedRemedy*

see comment

*Proposed Response* *Response Status* **W**

PROPOSED ACCEPT.

Cl **201** SC **201.1.4.2** P **77** L **26** # 110

Wang, Frank — Realtek Semiconductor Corp.

*Comment Type* **E** *Comment Status* **D** *EZ*

wording

*SuggestedRemedy*

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

*Proposed Response* *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Change: The low data rate direction PCS transmit functions are described in 201.2.2.2.

To: The LS_PATH contains the PCS functions as specified in 201.4.2.2.

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

Lasry, Ariel — Qualcomm Technologies Inc.

*Comment Type* **E** *Comment Status* **D** *EZ*

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* **W**

PROPOSED ACCEPT.

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

Jonsson, Ragnar — Infineon

*Comment Type* **T** *Comment Status* **D** *ACT EEE*

EEE should be removed

*SuggestedRemedy*

Remove all reference to EEE

*Proposed Response* *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

See comment #193.

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

van Dyck, Peter Infineon

*Comment Type* **E** *Comment Status* **D** *EZ*

Wrong reference: (see 201.3.5.2)

*SuggestedRemedy*

(see 201.4.5)

*Proposed Response* *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Change: (see 201.3.5.2)

To: (see 201.4.5)

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

van Dyck, Peter Infineon

*Comment Type* **T** *Comment Status* **D** *ACT EEE*

"such as EEE and OAM" EEE should be removed

*SuggestedRemedy*

Replace with "such as OAM"

*Proposed Response* *Response Status* **W**

PROPOSED ACCEPT.

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

Razavi, Alireza Infineon

*Comment Type* **E** *Comment Status* **D** *ACT EEE*

remove EEE, as it is not defined

*SuggestedRemedy*

*Proposed Response* *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

See comment #193.

*Cl* **201** *SC* **201.1.4.3** *P* **77** *L* **52** # 112

Wang, Frank Realtek Semiconductor Corp.

*Comment Type* **E** *Comment Status* **D** *EZ*

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

*SuggestedRemedy*

change "provides  communications" to "provides communications"

*Proposed Response* *Response Status* **W**

PROPOSED REJECT.

There is a single space. The space is large because of the justification to both edges.

corrected page number

*Cl* **201** *SC* **201.1.4.3** *P* **77** *L* **48** # 111

Wang, Frank Realtek Semiconductor Corp.

*Comment Type* **E** *Comment Status* **D** *EZ*

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* **W**

PROPOSED REJECT.

802.3ch and 802.3cy just say "a single balanced pair of conductors".

corrected page number

*Cl* **201** *SC* **201.1.4.3** *P* **77** *L* **52** # 113

Wang, Frank Realtek Semiconductor Corp.

*Comment Type* **E** *Comment Status* **D** *EZ*

typo

*SuggestedRemedy*

change "x" to "×"

*Proposed Response* *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Change the letter "x" to the multiplication sign.

corrected page number

*Cl* **201** *SC* **201.1.4.3** *P* **77** *L* **52** # 403

Muma, Scott — Microchip

*Comment Type* **T** *Comment Status* **D** *ACT PCS*

This paragraphs switches from the PMA being a sublayer to being 2 ends of the path. The PMA is a sublayer, so talking about an HS_PATH PMA or LS_PATH PMA makes it challenging to maintain clarity. The following paragraphs on PHY Control switches back to sublayer since the PHY control would control an HS_TX/LS_RX PMA, not an HS_PATH PMA.

*SuggestedRemedy*

Change this paragraph to: The PMA provides full duplex communications at 117.1875 MBd in one direction and 5625 x S MBd in the other direction. See Table 201–1 for the definition of S.

*Proposed Response* *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

TFTD

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

Jonsson, Ragnar — Infineon

*Comment Type* **E** *Comment Status* **D** *ACT Autonegotiation*

Autoneg is optional

*SuggestedRemedy*

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

*Proposed Response* *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Does ACT want/need Auto negotiation? Does it make sense to Auto negotiate between Symmetric and Asymmetric PHYs?

*Cl* **201** *SC* **201.1.4.3** *P* **78** *L* **3** # 114

Wang, Frank — Realtek Semiconductor Corp.

*Comment Type* **E** *Comment Status* **D** *EZ*

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* **W**

PROPOSED REJECT.

The use of "PHY" here is consistent with other 802.3 clauses.

corrected page number

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

Jonsson, Ragnar — Infineon

*Comment Type* **T** *Comment Status* **D** *ACT EEE*

EEE should be removed

*SuggestedRemedy*

Remove all reference to EEE

*Proposed Response* *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Delete the Editor's note.

Add: MultiG+100M/100M+MultiGBASE-T1/V1 does not support EEE.

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

Jonsson, Ragnar — Infineon

*Comment Type* **E** *Comment Status* **D** *ACT Link Sync*

Link Syncronization is not half-duplex

*SuggestedRemedy*

Remove text about Link Sync beeing half-duplex

*Proposed Response* *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Solved by comment #401.

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

Jonsson, Ragnar Infineon

*Comment Type* **T** *Comment Status* **D** *ACT EEE*

EEE should be removed

*SuggestedRemedy*

Remove item "i)" from the list

*Proposed Response* *Response Status* **W**

PROPOSED ACCEPT.

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

van Dyck, Peter Infineon

*Comment Type* **T** *Comment Status* **D** *ACT EEE*

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

*SuggestedRemedy*

Delete item i) (P78 L50)

*Proposed Response* *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

See comment #349.

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

Razavi, Alireza Infineon

*Comment Type* **T** *Comment Status* **D** *ACT EEE*

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* **W**

PROPOSED ACCEPT IN PRINCIPLE.

See comment #349.

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

Jonsson, Ragnar Infineon

*Comment Type* **T** *Comment Status* **D** *ACT EEE*

EEE should be removed

*SuggestedRemedy*

Only two modes and remove LPI reference

*Proposed Response* *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

See comment #195.

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

van Dyck, Peter Infineon

*Comment Type* **T** *Comment Status* **D** *ACT EEE*

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* **W**

PROPOSED ACCEPT.

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

Lo, William Axonne Inc

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

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* **W**

PROPOSED ACCEPT.

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

Razavi, Alireza Infineon

*Comment Type* **E** *Comment Status* **D** *EZ*

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

*SuggestedRemedy*

see comment

*Proposed Response* *Response Status* **W**

PROPOSED ACCEPT.

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

Jonsson, Ragnar Infineon

*Comment Type* **E** *Comment Status* **D** *EZ*

Missing figre

*SuggestedRemedy*

Add figure referenced in this line

*Proposed Response* *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Delete the reference to the figure per comment #268.

Cl **201** SC **201.2** P **79** L **48** # 115

Wang, Frank Realtek Semiconductor Corp.

*Comment Type* **E** *Comment Status* **D** *ACT Nomenclature*

wording

*SuggestedRemedy*

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

*Proposed Response* *Response Status* **W**

PROPOSED ACCEPT.

corrected page number

Cl **201** SC **201.2** P **79** L **50** # 116

Wang, Frank Realtek Semiconductor Corp.

*Comment Type* **E** *Comment Status* **D** *ACT Nomenclature*

wording

*SuggestedRemedy*

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

*Proposed Response* *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE. corrected page number

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

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

Lasry, Ariel Qualcomm Technologies Inc.

*Comment Type* **E** *Comment Status* **D** *ACT Link Monitor*

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* **W**

PROPOSED ACCEPT.

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

van Dyck, Peter Infineon

*Comment Type* **E** *Comment Status* **D** *ACT Nomenclature*

"US_TX link is established"

*SuggestedRemedy*

Replace with "PHY link is established"

*Proposed Response* *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Change "US_TX link is established"

To "MultiG+100M/100+MultiGBASE-T1/V1 link is established"

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

Lasry, Ariel — Qualcomm Technologies Inc.

*Comment Type* **E** *Comment Status* **D** *ACT Nomenclature*

"US_TX" is not defined.

*SuggestedRemedy*

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

*Proposed Response* *Response Status* **W**

PROPOSED ACCEPT.

---

*Cl* **201** *SC* **201.2.2** *P* **81** *L* **24** # 117

Wang, Frank — Realtek Semiconductor Corp.

*Comment Type* **E** *Comment Status* **D** *ACT Nomenclature*

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* **W**

PROPOSED ACCEPT.
corrected page number

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

Lasry, Ariel — Qualcomm Technologies Inc.

*Comment Type* **E** *Comment Status* **D** *ACT EEE*

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* **W**

PROPOSED REJECT.

EEE is not supported.

---

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

van Dyck, Peter — Infineon

*Comment Type* **T** *Comment Status* **D** *ACT EEE*

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* **W**

PROPOSED ACCEPT IN PRINCIPLE.

See comment #279.

---

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

Jonsson, Ragnar — Infineon

*Comment Type* **E** *Comment Status* **D** *ACT PMA*

PMA_LINK signals are optional

*SuggestedRemedy*

Mark PMA_LINK.request and indication optional

*Proposed Response* *Response Status* **W**

PROPOSED REJECT.

802.3ch also had optional autoneg, and PMA_LINK was not marked as optional

---

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

Razavi, Alireza — Infineon

*Comment Type* **E** *Comment Status* **D** *ACT EEE*

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* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Remove the following from Figure 201-3:
- PMA_PCS_TX_LPI_STATUS_request and associated line
- remove the NOTE on the Figure

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

Jonsson, Ragnar Infineon

*Comment Type* **T** *Comment Status* **D** *ACT EEE*

EEE should be removed

*SuggestedRemedy*

Remove LPI status request signal

*Proposed Response* *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

See comment #279.

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

van Dyck, Peter Infineon

*Comment Type* **T** *Comment Status* **D** *ACT EEE*

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* **W**

PROPOSED ACCEPT IN PRINCIPLE.

See comment #280.

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

Razavi, Alireza Infineon

*Comment Type* **E** *Comment Status* **D** *ACT EEE*

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* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Remove the following from Figure 201-3:
- PMA_PCS_RX_LPI_STATUS_request and associated line
- PMA_ALERTDETECT.induction and associated line
- remove the NOTE on the Figure

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

Razavi, Alireza Infineon

*Comment Type* **E** *Comment Status* **D** *EZ*

Missing space in 'FOLLOWERThis value'.

*SuggestedRemedy*

Insert a space: 'FOLLOWER This value'.

*Proposed Response* *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Correct per comment #107

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

Wienckowski, Natalie IVN Solutions LLC

*Comment Type* **E** *Comment Status* **D** *EZ*

*SuggestedRemedy*

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

*Proposed Response* *Response Status* **W**

PROPOSED ACCEPT.

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

Jonsson, Ragnar Infineon

*Comment Type* **T** *Comment Status* **D** *ACT EEE*

EEE should be removed

*SuggestedRemedy*

Remove LPI status and Alert-Detect signals

*Proposed Response* *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

See comment #280.

*Cl* **201** *SC* **201.2.2.2** *P* **84** *L* **27** # 118

Wang, Frank — Realtek Semiconductor Corp.

*Comment Type* **T** *Comment Status* **D** *ACT Asymmetric*

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

*SuggestedRemedy*

change "and" to "or"

*Proposed Response* *Response Status* **W**

PROPOSED ACCEPT.

---

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

Jonsson, Ragnar — Infineon

*Comment Type* **T** *Comment Status* **D** *ACT Autonegotiation*

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* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Does ACT want/need Auto negotiation? Does it make sense to Auto negotiate between Symmetric and Asymmetric PHYs?

---

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

Razavi, Alireza — Infineon

*Comment Type* **E** *Comment Status* **D** *EZ*

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

*SuggestedRemedy*

for consistency, only one of them should be used

*Proposed Response* *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Use LEADER-FOLLOWER as this is the predominate usage in 802.3, as MASTER-SLAVE.

Change throughout the draft.

Val to check clause 202.

---

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

Lasry, Ariel — Qualcomm Technologies Inc.

*Comment Type* **E** *Comment Status* **D** *EZ*

space missing between "FOLLOWER" and "This"

*SuggestedRemedy*

Insert between "FOLLOWER" and "This"

*Proposed Response* *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Correct per comment #107

---

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

Pandey, Sujan — Velinktech

*Comment Type* **ER** *Comment Status* **D** *EZ*

FOLLOWERThis …

*SuggestedRemedy*

FOLLOWER This

*Proposed Response* *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Correct per comment #107

---

*Cl* **201** *SC* **201.2.2.3** *P* **85** *L* **5** # 119

Wang, Frank — Realtek Semiconductor Corp.

*Comment Type* **E** *Comment Status* **D** *EZ*

typo

*SuggestedRemedy*

change "in201.4.2.2" to "in 201.4.2.2"

*Proposed Response* *Response Status* **W**

PROPOSED ACCEPT.
corrected page number

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

Jonsson, Ragnar Infineon

*Comment Type* **T** *Comment Status* **D** *ACT Autonegotiation*

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

*SuggestedRemedy*

See comment

*Proposed Response* *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Does ACT want/need Auto negotiation? Does it make sense to Auto negotiate between Symmetric and Asymmetric PHYs?

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

Razavi, Alireza Infineon

*Comment Type* **E** *Comment Status* **D** *EZ*

Missing space in reference 'in201.4.2.2'.

*SuggestedRemedy*

Insert a space: 'in 201.4.2.2'.

*Proposed Response* *Response Status* **W**

PROPOSED ACCEPT.

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

Pandey, Sujan Velinktech

*Comment Type* **ER** *Comment Status* **D** *EZ*

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* **W**

PROPOSED ACCEPT.

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

Wienckowski, Natalie IVN Solutions LLC

*Comment Type* **E** *Comment Status* **D** *EZ*

missing space

*SuggestedRemedy*

Add space between "in" and "201.4.2.2".

*Proposed Response* *Response Status* **W**

PROPOSED ACCEPT.

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

van Dyck, Peter Infineon

*Comment Type* **E** *Comment Status* **D** *EZ*

"in201.4.2.2" space missing

*SuggestedRemedy*

Replace with "in 201.4.2.2"

*Proposed Response* *Response Status* **W**

PROPOSED ACCEPT.

*Cl* **201** *SC* **201.2.2.3.1** *P* **85** *L* **16** # 120

Wang, Frank Realtek Semiconductor Corp.

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

{–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* **W**

PROPOSED ACCEPT.

corrected page number

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

Lasry, Ariel — Qualcomm Technologies Inc.

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

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* **W**

PROPOSED ACCEPT.

*Cl* **201** *SC* **201.2.2.3.1** *P* **85** *L* **18** # 378

Wang, Frank — Realtek Semiconductor Corp.

*Comment Type* **E** *Comment Status* **D** *EZ*

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* **W**

PROPOSED REJECT.

This is the standard structure in 802.3.

*Cl* **201** *SC* **201.2.2.3.1** *P* **85** *L* **23** # 396

Muma, Scott — Microchip

*Comment Type* **TR** *Comment Status* **D** *DME*

It's not clear what it means when tx_symb has the value DME. DME should not be in the PCS layer, it should be in the PMA layer as in Clause 147: "the DME encoder/decoder is contained in the PMA (see 147.4)"

*SuggestedRemedy*

tx_symb should be the logic symbol values, and the DME encoder/decoder functions should be removed from the PCS and added to the PMA.

*Proposed Response* *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

In 201.2.2.3.1, P85/L23
Change: DME
To: {0, 1}

In Figure 201-10 remove the "DME mapper" box and replace with "An".

Move 201.4.2.2.16 to 201.6.2.2.1
201.6.2.2.1 Differential Manchester encoding (DME)

During transmission, PMA_UNITDATA.request conveys the tx_symb variable, An, to the PMA, which can take on the values of "1" and "0".

P103 L16 - 51 here.

P96L53 Change: These bits are then sent one bit at a time as a DME symbol.
To: These bits are then sent one bit at a time.

P98L40 (Figure 201-11): Remove "Bit to DME" block

P99L28 (Figure 201-12): Remove "DME to Bit" block

P104L9 Change: The received DME symbols are demapped
To: The received symbols are demapped

P104L10 Delete: See 201.4.2.2.16 for details on the DME symbols.

P104L21 Change: received DME training framing
To: received training framing

P104L44 Change: PCS shall form a DME stream
To: PCS shall form a bit stream

P104L45 Change: rx_DME_0 to rx_DME_299
To: rx_0 to rx_299

P107L23 Change: See 201.4.2.2.16 for details on the DME symbols.
To: See 201.6.2.2.1 for details on the DME symbols.

---

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

Jonsson, Ragnar Infineon

*Comment Type* **E** *Comment Status* **D** *EZ*

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* **W**

PROPOSED ACCEPT IN PRINCIPLE.

After "DME" add (see 201.4.2.2.16)

---

*Cl* **201** *SC* **201.2.2.3.1** *P* **85** *L* **24** # 121

Wang, Frank Realtek Semiconductor Corp.

*Comment Type* **E** *Comment Status* **D** *EZ*

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* **W**

PROPOSED REJECT.

This is the standard structure in 802.3.

corrected page number and line number

---

*Cl* **201** *SC* **201.2.2.4.1** *P* **85** *L* **45** # 122

Wang, Frank Realtek Semiconductor Corp.

*Comment Type* **E** *Comment Status* **D** *EZ*

grammar: comma afrer "During reception"

*SuggestedRemedy*

change "reception" to "reception,"

*Proposed Response* *Response Status* **W**

PROPOSED ACCEPT.

corrected page number and line number

---

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

Lasry, Ariel Qualcomm Technologies Inc.

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

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* **W**

PROPOSED ACCEPT.

---

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

Lasry, Ariel Qualcomm Technologies Inc.

*Comment Type* **E** *Comment Status* **D** *EZ*

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

*SuggestedRemedy*

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

*Proposed Response* *Response Status* **W**

PROPOSED ACCEPT.

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

McCarthy, Frank Infineon

*Comment Type* **E** *Comment Status* **D** *EZ*

semicolon should be a comma

*SuggestedRemedy*

*Proposed Response* *Response Status* **W**

PROPOSED ACCEPT.

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

Lasry, Ariel Qualcomm Technologies Inc.

*Comment Type* **E** *Comment Status* **D** *EZ*

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* **W**

PROPOSED ACCEPT.

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

Lasry, Ariel Qualcomm Technologies Inc.

*Comment Type* **E** *Comment Status* **D** *EZ*

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

*SuggestedRemedy*

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

*Proposed Response* *Response Status* **W**

PROPOSED ACCEPT.

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

McCarthy, Frank Infineon

*Comment Type* **E** *Comment Status* **D** *EZ*

semicolon should be a comma

*SuggestedRemedy*

*Proposed Response* *Response Status* **W**

PROPOSED ACCEPT.

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

Jonsson, Ragnar Infineon

*Comment Type* **T** *Comment Status* **D** *ACT PMA*

Reference to wrong clause

*SuggestedRemedy*

Reference Clause 201.5 instead of 149.4.2.3

*Proposed Response* *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Change per comment #269.

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

Jonsson, Ragnar Infineon

*Comment Type* **E** *Comment Status* **D** *ACT PMA*

Change second HS_RX tp LS_RX

*SuggestedRemedy*

See comment

*Proposed Response* *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Change per comment #269.

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

Lo, William — Axonne Inc

*Comment Type* **T** *Comment Status* **D** *ACT PMA*

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* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Delete Editor's note

Change: 201.6.2.3 for HS_RX and TBD.
To: 201.4.2.3 for HS_RX and 201.6.2.3 for LS_RX.

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

Jonsson, Ragnar — Infineon

*Comment Type* **E** *Comment Status* **D** *ACT PMA*

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

*SuggestedRemedy*

See comment

*Proposed Response* *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Change per comment #269.

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

Razavi, Alireza — Infineon

*Comment Type* **E** *Comment Status* **D** *ACT PMA*

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* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Change per comment #269.

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

van Dyck, Peter — Infineon

*Comment Type* **E** *Comment Status* **D** *ACT PMA*

"201.6.2.3 for HS_RX" wrong RX

*SuggestedRemedy*

Replace with "201.6.2.3 for LS_RX"

*Proposed Response* *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Change per comment #269.

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

Lo, William — Axonne Inc

*Comment Type* **T** *Comment Status* **D** *ACT PMA*

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* **W**

PROPOSED ACCEPT.

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

Jonsson, Ragnar Infineon

*Comment Type* **E** *Comment Status* **D** *ACT PMA*

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

*SuggestedRemedy*

See comment

*Proposed Response* *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Change per comment #270.

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

van Dyck, Peter Infineon

*Comment Type* **E** *Comment Status* **D** *EZ*

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* **W**

PROPOSED ACCEPT.

*Cl* **201** *SC* **201.3** *P* **88** *L* **24** # 390

Muma, Scott Microchip

*Comment Type* **T** *Comment Status* **D** *ACT PCS*

The PCS is a sublayer within the PHY comprising a transmit and receive, which makes describing it only as HS_PATH functions a challenge in the current text structure.

*SuggestedRemedy*

Describe the functions/structure of a PHY_S PCS in one subclause, including subclauses for the HS_TX and LS_RX. Then in another subclause describe the functions/structure of a PHY_D PCS, including subclauses for the HS_RX and LS_TX. This will be consistent with the layered structure of the document rather than mixing the layer and path within one description.

*Proposed Response* *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

TFTD

The reorganization is a good idea, but specific text is needed.

See #390, #391, #392, #393

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

Lasry, Ariel Qualcomm Technologies Inc.

*Comment Type* **E** *Comment Status* **D** *refer vs. include*

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* **W**

PROPOSED ACCEPT.

*Cl* **201** *SC* **201.3.1** *P* **88** *L* **32** # 123

Wang, Frank Realtek Semiconductor Corp.

*Comment Type* **E** *Comment Status* **D** *refer vs. include*

wording

*SuggestedRemedy*

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

*Proposed Response* *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Dependant on decision regarding comment #44.

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

McCarthy, Frank Infineon

*Comment Type* **E** *Comment Status* **D** *EZ*

line should not go through pma_data_mode

*SuggestedRemedy*

*Proposed Response* *Response Status* **W**

PROPOSED ACCEPT.

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

Zhu, Infineon

*Comment Type* **E** *Comment Status* **D** *EZ*

pcs_data_mode text is blocked

*SuggestedRemedy*

adjust text postion

*Proposed Response* *Response Status* **W**

PROPOSED ACCEPT.

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

Lasry, Ariel Qualcomm Technologies Inc.

*Comment Type* **E** *Comment Status* **D** *ACT EEE*

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* **W**

PROPOSED REJECT.

EEE is not supported

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

Lasry, Ariel Qualcomm Technologies Inc.

*Comment Type* **E** *Comment Status* **D** *EZ*

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* **W**

PROPOSED ACCEPT.

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

McCarthy, Frank Infineon

*Comment Type* **E** *Comment Status* **D** *EZ*

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* **W**

PROPOSED ACCEPT.

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

McCarthy, Frank Infineon

*Comment Type* **E** *Comment Status* **D** *EZ*

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* **W**

PROPOSED ACCEPT.

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

Jonsson, Ragnar — Infineon

*Comment Type* **E** *Comment Status* **D** *EZ*

"pcs_data_mode" is overlapping the line

*SuggestedRemedy*

See comment

*Proposed Response* *Response Status* **W**

PROPOSED ACCEPT.

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

McCarthy, Frank — Infineon

*Comment Type* **E** *Comment Status* **D** *EZ*

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* **W**

PROPOSED ACCEPT.

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

Wienckowski, Natalie — IVN Solutions LLC

*Comment Type* **E** *Comment Status* **D** *EZ*

extra period

*SuggestedRemedy*

Remove duplicate period at end of sentence.

*Proposed Response* *Response Status* **W**

PROPOSED ACCEPT.

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

Razavi, Alireza — Infineon

*Comment Type* **E** *Comment Status* **D** *EZ*

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

*SuggestedRemedy*

Remove the extra period.

*Proposed Response* *Response Status* **W**

PROPOSED ACCEPT.

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

Lasry, Ariel — Qualcomm Technologies Inc.

*Comment Type* **E** *Comment Status* **D** *EZ*

typo: dot at end of line

*SuggestedRemedy*

remove " ." at end of line

*Proposed Response* *Response Status* **W**

PROPOSED ACCEPT.

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

McCarthy, Frank — Infineon

*Comment Type* **E** *Comment Status* **D** *EZ*

"ad" should be "and" in block name

*SuggestedRemedy*

Interleave and RS-FEC(360,326) encoder

*Proposed Response* *Response Status* **W**

PROPOSED ACCEPT.

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

Pandey, Sujan — Velinktech

*Comment Type* **ER** *Comment Status* **D** *EZ*

Interleaver ad RS-FEC (360,326) encoder

*SuggestedRemedy*

Interleaver and RS-FEC (360,326) encoder

*Proposed Response* *Response Status* **W**

PROPOSED ACCEPT.

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

Jonsson, Ragnar Infineon

*Comment Type* **E** *Comment Status* **D** *EZ*

Typo: "ad" instead of "and"

*SuggestedRemedy*

See comment

*Proposed Response* *Response Status* **W**

PROPOSED ACCEPT.

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

Lasry, Ariel Qualcomm Technologies Inc.

*Comment Type* **E** *Comment Status* **D** *EZ*

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* **W**

PROPOSED ACCEPT.

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

Lasry, Ariel Qualcomm Technologies Inc.

*Comment Type* **E** *Comment Status* **D** *EZ*

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* **W**

PROPOSED ACCEPT.

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

McCarthy, Frank Infineon

*Comment Type* **E** *Comment Status* **D** *refer vs. include*

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* **W**

PROPOSED REJECT.

There is a reference to 149.3.2.2. 149.3.2.2.15 defines interleaving.

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

Lasry, Ariel Qualcomm Technologies Inc.

*Comment Type* **E** *Comment Status* **D** *EZ*

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* **W**

PROPOSED ACCEPT.

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

Lasry, Ariel Qualcomm Technologies Inc.

*Comment Type* **E** *Comment Status* **D** *ACT Nomenclature*

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* **W**

PROPOSED ACCEPT.

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

Razavi, Alireza Infineon

*Comment Type* **E** *Comment Status* **D** *EZ*

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

*SuggestedRemedy*

see comment

*Proposed Response* *Response Status* **W**

PROPOSED REJECT.

If this comment were to be implemented, many other changes would need to be made for similar references to 149.

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

Lasry, Ariel Qualcomm Technologies Inc.

*Comment Type* **E** *Comment Status* **D** *EZ*

typo: dot at end of line

*SuggestedRemedy*

remove " ." at end of line

*Proposed Response* *Response Status* **W**

PROPOSED ACCEPT.

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

Wienckowski, Natalie IVN Solutions LLC

*Comment Type* **E** *Comment Status* **D** *EZ*

extra period

*SuggestedRemedy*

Remove duplicate period at end of sentence.

*Proposed Response* *Response Status* **W**

PROPOSED ACCEPT.

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

Lasry, Ariel Qualcomm Technologies Inc.

*Comment Type* **E** *Comment Status* **D** *EZ*

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

*SuggestedRemedy*

replace "10G Path" with "PAM4 path"

*Proposed Response* *Response Status* **W**

PROPOSED ACCEPT.

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

Lasry, Ariel Qualcomm Technologies Inc.

*Comment Type* **E** *Comment Status* **D** *EZ*

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* **W**

PROPOSED ACCEPT.

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

McCarthy, Frank Infineon

*Comment Type* **E** *Comment Status* **D** *EZ*

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* **W**

PROPOSED REJECT.

This is common with 802.3ch and other Automotive PHYs.

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

McCarthy, Frank Infineon

*Comment Type* **E** *Comment Status* **D** *refer vs. include*

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* **W**

PROPOSED REJECT.

There is a reference to 149.3.2.2. 149.3.2.2.15 defines interleaving.

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

Lasry, Ariel Qualcomm Technologies Inc.

*Comment Type* **E** *Comment Status* **D** *EZ*

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* **W**

PROPOSED ACCEPT.

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

Lasry, Ariel Qualcomm Technologies Inc.

*Comment Type* **E** *Comment Status* **D** *EZ*

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* **W**

PROPOSED ACCEPT.

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

Lasry, Ariel Qualcomm Technologies Inc.

*Comment Type* **E** *Comment Status* **D** *EZ*

"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* **W**

PROPOSED ACCEPT.

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

Lasry, Ariel Qualcomm Technologies Inc.

*Comment Type* **E** *Comment Status* **D** *EZ*

"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* **W**

PROPOSED ACCEPT.

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

Lasry, Ariel Qualcomm Technologies Inc.

*Comment Type* **E** *Comment Status* **D** *EZ*

"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* **W**

PROPOSED ACCEPT.

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

McCarthy, Frank Infineon

*Comment Type* **E** *Comment Status* **D** *EZ*

There should be commas around respectively.

*SuggestedRemedy*

and 149.3.2.2.21, respectively, with the

*Proposed Response* *Response Status* **W**

PROPOSED ACCEPT.

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

Lasry, Ariel Qualcomm Technologies Inc.

*Comment Type* **E** *Comment Status* **D** *EZ*

"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* **W**

PROPOSED ACCEPT.

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

McCarthy, Frank Infineon

*Comment Type* **E** *Comment Status* **D** *EZ*

comma should be after D_n

*SuggestedRemedy*

presented as D_n, where

*Proposed Response* *Response Status* **W**

PROPOSED ACCEPT.

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

Zhu, Infineon

*Comment Type* **E** *Comment Status* **D** *EZ*

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

*SuggestedRemedy*

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

*Proposed Response* *Response Status* **W**

PROPOSED ACCEPT.

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

McCarthy, Frank Infineon

*Comment Type* **E** *Comment Status* **D** *EZ*

"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* **W**

PROPOSED ACCEPT.

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

McCarthy, Frank Infineon

*Comment Type* **E** *Comment Status* **D** *EZ*

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* **W**

PROPOSED ACCEPT.

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

Lasry, Ariel Qualcomm Technologies Inc.

*Comment Type* **E** *Comment Status* **D** *EZ*

"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* **W**

PROPOSED ACCEPT.

*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* **D** *EZ*

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* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Make consistent with working change in comment #61.

Delete lines 6 through 16.

Change P93 L18 to read "For the PAM2 path HS_TX, each consecutive output symbol, An shall be mapped to a PAM2 encoded symbol M(n) as follows:"

*Cl* **201** *SC* **201.3.2.2** *P* **93** *L* **19** # 329

Johnson, Samuel — Infineon

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

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* **W**

PROPOSED REJECT.

This is common with 802.3ch and other Automotive PHYs.

corrected page number and line number

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

McCarthy, Frank — Infineon

*Comment Type* **E** *Comment Status* **D** *EZ*

"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* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Implemented by solution to comment #181.

*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* **D** *EZ*

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* **W**

PROPOSED ACCEPT.

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

McCarthy, Frank — Infineon

*Comment Type* **E** *Comment Status* **D** *EZ*

"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* **W**

PROPOSED ACCEPT.

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

Wienckowski, Natalie IVN Solutions LLC

*Comment Type* **E** *Comment Status* **D** *EZ*

grammer

*SuggestedRemedy*

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

*Proposed Response* *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Implemented by solution to comment #265.

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

Pandey, Sujan Velinktech

*Comment Type* **ER** *Comment Status* **D** *EZ*

The received symbols are demaped and descrambling performed

*SuggestedRemedy*

The received symbols are demaped and descrambled

*Proposed Response* *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Implemented by solution to comment #265.

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

Pandey, Sujan Velinktech

*Comment Type* **ER** *Comment Status* **D** *EZ*

… 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* **W**

PROPOSED ACCEPT.

*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* **D** *Duplexing Method*

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* **W**

PROPOSED ACCEPT IN PRINCIPLE.

TFTD

*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* **D** *EZ*

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* **W**

PROPOSED ACCEPT.

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*Cl* **201** *SC* **201.4** *P* **95** *L* **14** # 391

Muma, Scott — Microchip

*Comment Type* **T** *Comment Status* **D** *ACT PCS*

The PCS is a sublayer within the PHY comprising a transmit and receive, which makes describing it only as LS_PATH functions a challenge in the current text structure.

*SuggestedRemedy*

Describe the functions/structure of a PHY_S PCS in one subclause, including subclauses for the HS_TX and LS_RX. Then in another subclause describe the functions/structure of a PHY_D PCS, including subclauses for the HS_RX and LS_TX. This will be consistent with the layered structure of the document rather than mixing the layer and path within one description.

*Proposed Response* *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

TFTD

The reorganization is a good idea, but specific text is needed.

See #390, #391, #392, #393

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*Cl* **201** *SC* **201.4.2.2** *P* **96** *L* **42** # 124

Wang, Frank — Realtek Semiconductor Corp.

*Comment Type* **E** *Comment Status* **D** *EZ*

wording

*SuggestedRemedy*

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

*Proposed Response* *Response Status* **W**

PROPOSED ACCEPT.

corrected page number

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

Wienckowski, Natalie — IVN Solutions LLC

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

copy paste error from Clause 149

*SuggestedRemedy*

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

*Proposed Response* *Response Status* **W**

PROPOSED ACCEPT.

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*Cl* **201** *SC* **201.4.2.2** *P* **96** *L* **51** # 125

Wang, Frank — Realtek Semiconductor Corp.

*Comment Type* **E** *Comment Status* **D** *EZ*

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* **W**

PROPOSED ACCEPT.

*Cl* **201** *SC* **201.4.2.2** *P* **97** *L* **2** # 126

Wang, Frank — Realtek Semiconductor Corp.

*Comment Type* **E** *Comment Status* **D** *EZ*

wording

*SuggestedRemedy*

change "T" to "T"

*Proposed Response* *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE. corrected page number
"T" should be in italics.

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

van Dyck, Peter — Infineon

*Comment Type* **E** *Comment Status* **D** *EZ*

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

*SuggestedRemedy*

See comment

*Proposed Response* *Response Status* **W**

PROPOSED ACCEPT.

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

van Dyck, Peter — Infineon

*Comment Type* **E** *Comment Status* **D** *EZ*

"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* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Change: 201.3.5.1

To: 201.4.5.1

Comment #217 implements the rest of the request.

*Cl* **201** *SC* **201.4.2.2** *P* **97** *L* **12** # 127

Wang, Frank — Realtek Semiconductor Corp.

*Comment Type* **E** *Comment Status* **D** *EZ*

wording

*SuggestedRemedy*

change "Tn" to "Tn"

*Proposed Response* *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE. corrected page number
"Tn" should be in italics.

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

Zhu, — Infineon

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

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* **W**

PROPOSED ACCEPT.

*Cl* **201** *SC* **201.4.2.2.15** *P* **103** *L* **3** # 128

Wang, Frank — Realtek Semiconductor Corp.

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

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* **W**

PROPOSED ACCEPT.

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

Lo, William — Axonne Inc

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

There is no interleaving or superframes in the LS_PATH

*SuggestedRemedy*

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

*Proposed Response* *Response Status* **W**

PROPOSED ACCEPT.

*Cl* **201** *SC* **201.4.2.2.16** *P* **103** *L* **12** # 395

Muma, Scott — Microchip

*Comment Type* **TR** *Comment Status* **D** *DME*

DME encoding may be better done as a PMA function similar to other existing 802.3 clauses

*SuggestedRemedy*

Move DME encoding from PCS to PMA.

*Proposed Response* *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

See response to comment #396.

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

van Dyck, Peter — Infineon

*Comment Type* **E** *Comment Status* **D** *EZ*

"block lock" underscore missing

*SuggestedRemedy*

Replace with "block_lock"

*Proposed Response* *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Make the same correction on P94/L15

*Cl* **201** *SC* **201.4.3** *P* **105** *L* **18** # 129

Wang, Frank — Realtek Semiconductor Corp.

*Comment Type* **E** *Comment Status* **D** *EZ*

grammar: comma afrer "mode"

*SuggestedRemedy*

change "mode" to "mode,"

*Proposed Response* *Response Status* **W**

PROPOSED ACCEPT.
corrected page number

*Cl* **201** *SC* **201.4.3** *P* **105** *L* **19** # 130

Wang, Frank — Realtek Semiconductor Corp.

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

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* **W**

PROPOSED ACCEPT.
corrected page number

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

Razavi, Alireza — Infineon

*Comment Type* **E** *Comment Status* **D** *EZ*

enumaration is not correct and all of them are a)

*SuggestedRemedy*

enumaration should be updated

*Proposed Response* *Response Status* **W**

PROPOSED ACCEPT.

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

Razavi, Alireza Infineon

*Comment Type* **E** *Comment Status* **D** *EZ*

64/65 blocks

*SuggestedRemedy*

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

*Proposed Response* *Response Status* **W**

PROPOSED ACCEPT.

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

Lo, William Axonne Inc

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

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* **W**

PROPOSED ACCEPT.

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

van Dyck, Peter Infineon

*Comment Type* **E** *Comment Status* **D** *ACT PMA*

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* **W**

PROPOSED ACCEPT.

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

Lo, William Axonne Inc

*Comment Type* **T** *Comment Status* **D** *ACT PMA*

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* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Accomplished by solution to comment #204.

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

van Dyck, Peter Infineon

*Comment Type* **E** *Comment Status* **D** *ACT PMA*

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* **W**

PROPOSED ACCEPT.

*Cl* **201** *SC* **201.5** *P* **107** *L* **12** # 392

Muma, Scott — Microchip

*Comment Type* **T** *Comment Status* **D** *ACT PMA*

The PMA sublayer description in 149.4 describes a PMA sublayer contained within a single PHY. Attempting to reference it to describe the HS_PATH functions of the PMA could lead to some unintended misunderstandings since the HS_PATH functions are not in a single PHY.

*SuggestedRemedy*

Describe the functions/structure of a PHY_S PMA sublayer in one subclause, including subclauses for the HS_TX and LS_RX. Then in another subclause describe the functions/structure of a PHY_D PMA sublayer, including subclauses for the HS_RX and LS_TX.

*Proposed Response* *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

TFTD

The reorganization is a good idea, but specific text is needed.

See #390, #391, #392, #393

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

Jonsson, Ragnar — Infineon

*Comment Type* **T** *Comment Status* **D** *ACT EEE*

EEE should be removed

*SuggestedRemedy*

Add to list "3) No EEE support"

*Proposed Response* *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Add to list: 3) EEE is not supported

*Cl* **201** *SC* **201.6** *P* **107** *L* **19** # 393

Muma, Scott — Microchip

*Comment Type* **T** *Comment Status* **D** *ACT LS PMA*

The PMA sublayer description from an LS_PATH only perspective is extremely challenging to understand from the text. The PMA transmit and receive functions defined exist in 2 distinct instances of the PMA sublayer even though the single PMA sublayer is defined as containing a transmit and receive function. Similarly a single PHY control function instance does not interact with both ends of the LS_PATH.

*SuggestedRemedy*

Describe the functions/structure of a PHY_S PMA sublayer in one subclause, including subclauses for the HS_TX and LS_RX. Then in another subclause describe the functions/structure of a PHY_D PMA sublayer, including subclauses for the HS_RX and LS_TX.

*Proposed Response* *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

TFTD

The reorganization is a good idea, but specific text is needed.

See #390, #391, #392, #393

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

Jonsson, Ragnar — Infineon

*Comment Type* **T** *Comment Status* **D** *ACT PMA*

Text missing for this section

*SuggestedRemedy*

Add text corresponding to Figure 149-26 and Clause 149.4.2

*Proposed Response* *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

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

Razavi, Alireza Infineon

*Comment Type* **T** *Comment Status* **D** *ACT PMA*

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* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Add text to 201.6.1: The PMA couples messages from the PMA service interface specified in 201.2.2 to the 100M+MultiGBASE-T1/V1 baseband medium, specified in 201.11 to -T1 and in 201.12 for -V1.
The interface between the PMA and the baseband medium is the Medium Dependent Interface (MDI),
which is specified in 201.13 to -T1 and in 201.14 for -V1.

Copy Figure 149-26 I nto 201.6.1 with the following changes:
- remove all dashed lines and associated names
- rename PMA RECEIVE to HS-RX PMA RECEIVE
- rename PMA TRANSMIT to LS_TX PMA TRANSMIT

Replace Figure <REF> in 201.6.2 with reference to this added Figure.

*Cl* **201** *SC* **201.6.2** *P* **107** *L* **36** # 366

Jonsson, Ragnar Infineon

*Comment Type* **E** *Comment Status* **D** *ACT PMA*

Refference figure is missin

*SuggestedRemedy*

Add figure referenced in this line

*Proposed Response* *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

See comment #288

*Cl* **201** *SC* **201.6.2** *P* **107** *L* **38** # 367

Jonsson, Ragnar Infineon

*Comment Type* **E** *Comment Status* **D** *ACT PMA*

Refference figure is missin

*SuggestedRemedy*

Add figure referenced in this line

*Proposed Response* *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

See comment #288

*Cl* **201** *SC* **201.6.2.1** *P* **107** *L* **50** # 368

Jonsson, Ragnar Infineon

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

Change 100ms to 50ms (see also Caluse 202.4.2.1)

*SuggestedRemedy*

See comment

*Proposed Response* *Response Status* **W**

PROPOSED ACCEPT.

TFTD for both Clause 201 and 202.

Val to make any necessary change in 202.

*Cl* **201** *SC* **201.6.2.1** *P* **108** *L* **15** # 370

Jonsson, Ragnar Infineon

*Comment Type* **T** *Comment Status* **D** *ACT Autonegotiation*

Support for PHY-D as follower should be optional

*SuggestedRemedy*

See comment

*Proposed Response* *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Does ACT want/need Auto negotiation? Does it make sense to Auto negotiate between Symmetric and Asymmetric PHYs?

*Cl* **201** *SC* **201.6.2.2** *P* **108** *L* **4** # 369

Jonsson, Ragnar Infineon

*Comment Type* **E** *Comment Status* **D** *EZ*

Clarify that Coax is also single "pair"

*SuggestedRemedy*

Add the word "signle" in front of "Coax cable"

*Proposed Response* *Response Status* **W**

PROPOSED ACCEPT.

*Cl* **201** *SC* **201.6.2.3** *P* **108** *L* **34** # 133

Wang, Frank Realtek Semiconductor Corp.

*Comment Type* **E** *Comment Status* **D** *EZ*

wording: remove "low speed direction"

*SuggestedRemedy*

change "The low speed direction PMA Receiver" to "The PMA Receiver"

*Proposed Response* *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE. corrected page number

change "The low speed direction PMA Receive"
to "The PMA Receive"

*Cl* **201** *SC* **201.6.2.3** *P* **108** *L* **27** # 379

Wang, Frank Realtek Semiconductor Corp.

*Comment Type* **E** *Comment Status* **D** *EZ*

wording: add "The" before "PMA Receive contains"

*SuggestedRemedy*

change "PMA Receive contains" to "The PMA Receive contains"

*Proposed Response* *Response Status* **W**

PROPOSED ACCEPT.

*Cl* **201** *SC* **201.6.2.3** *P* **108** *L* **27** # 131

Wang, Frank Realtek Semiconductor Corp.

*Comment Type* **E** *Comment Status* **D** *EZ*

wording: remove "low speed"

*SuggestedRemedy*

change "The low speed PMA Receiver" to "The PMA Receiver"

*Proposed Response* *Response Status* **W**

PROPOSED ACCEPT.
corrected page number

*Cl* **201** *SC* **201.6.2.3** *P* **108** *L* **28** # 132

Wang, Frank Realtek Semiconductor Corp.

*Comment Type* **E** *Comment Status* **D** *EZ*

There is no such comma in 149.4.2.3.

*SuggestedRemedy*

change "MDI," to "MDI"

*Proposed Response* *Response Status* **W**

PROPOSED ACCEPT.
corrected page number

*Cl* **201** *SC* **201.6.2.3** *P* **108** *L* **31** # 371

Jonsson, Ragnar Infineon

*Comment Type* **E** *Comment Status* **D** *EZ*

RFER is missing 10^{-10} after 2x

*SuggestedRemedy*

See comment

*Proposed Response* *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Change 2x to 2 x 10^-10

Cl **201** SC **201.6.2.3** P **108** L **35** # 83

Wienckowski, Natalie IVN Solutions LLC

*Comment Type* **E** *Comment Status* **D** *EZ*

missing period

*SuggestedRemedy*

Add a period after accordingly.

*Proposed Response* *Response Status* **W**

PROPOSED ACCEPT.

Cl **201** SC **201.6.2.3** P **108** L **35** # 235

Pandey, Sujan Velinktech

*Comment Type* **ER** *Comment Status* **D** *EZ*

loc_rcvr_status varialbe accordingly

*SuggestedRemedy*

loc_rcvr_status varialbe accordingly.

*Proposed Response* *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Add missing period.

Cl **201** SC **201.6.2.3** P **108** L **35** # 134

Wang, Frank Realtek Semiconductor Corp.

*Comment Type* **E** *Comment Status* **D** *EZ*

period is missed

*SuggestedRemedy*

change "accordingly" to "accordingly."

*Proposed Response* *Response Status* **W**

PROPOSED ACCEPT.
corrected page number

Cl **201** SC **201.6.2.4** P **108** L **48** # 372

Jonsson, Ragnar Infineon

*Comment Type* **T** *Comment Status* **D** *ACT LS PMA*

There are sigificant updates from clause 149 that need to be added

*SuggestedRemedy*

See comment

*Proposed Response* *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Resolved by comment #394 when references to 149 are replaced by new content inserted by that comment.

Cl **201** SC **201.7** P **109** L **3** # 135

Wang, Frank Realtek Semiconductor Corp.

*Comment Type* **E** *Comment Status* **D** *Nomenclature*

wording

*SuggestedRemedy*

change "fast and slow directions" to "HS_PATH and LS_PATH"

*Proposed Response* *Response Status* **W**

PROPOSED ACCEPT.

Cl **201** SC **201.7** P **109** L **3** # 394

Muma, Scott Microchip

*Comment Type* **T** *Comment Status* **D** *ACT PMA*

This contradicts the text in 201.5 that says the HS_PATH PMA functions are specified in 149.4 as 149.4 defines all of these functions already.

*SuggestedRemedy*

Describing the PMA in terms of PHY_S/PHY_D instance functions rather than HS_PATH/LS_PATH functions may remove the contradiction if there are some common functions between the PHY_S and PHY_D.

*Proposed Response* *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

In order to fix this, we need to bring the 149 text into 201.5 and correct a number of items. The references can then be made to 201.5.x instead of 149.

See 3dm_d0pa_Comment_394.pdf for proposed changes to 201.5.
There was an extensive set of changes that are easier to see in a file.

*Cl* **201** *SC* **201.7** *P* **109** *L* **3** # 373

Jonsson, Ragnar Infineon

*Comment Type* **E** *Comment Status* **D** *EZ*

Use HS and LS instead of "fast" and "slow"

*SuggestedRemedy*

See comment

*Proposed Response* *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Change: fast and slow directions

To: HS_PATH and LS_PATH

*Cl* **201** *SC* **201.7.1** *P* **109** *L* **16** # 136

Wang, Frank Realtek Semiconductor Corp.

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

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* **W**

PROPOSED ACCEPT IN PRINCIPLE.

See solution in comment #205.

*Cl* **201** *SC* **201.7.1** *P* **109** *L* **16** # 205

van Dyck, Peter Infineon

*Comment Type* **E** *Comment Status* **D** *EZ*

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* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Change: In the TRAINING state, PAM 2 transmission is used and PHY capabilities are exchanged with Infofields as specified in 149.4.2.4.5.

To: In the TRAINING state, PHY capabilities are exchanged with Infofields as specified in 149.4.2.4.5. PAM 2 transmission is used for HS_PATH and DME is used for LS_PATH.

*Cl* **201** *SC* **201.7.1** *P* **109** *L* **16** # 374

Jonsson, Ragnar Infineon

*Comment Type* **T** *Comment Status* **D** *ACT PMA*

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* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Change: In the TRAINING state, PAM 2 transmission is used and PHY capabilities are exchanged with Infofields as specified in 149.4.2.4.5.

To: In the TRAINING state, PAM 2 transmission is used in the HS direction and DME is used in the LS direction, PHY capabilities are exchanged with Infofields as specified in 149.4.2.4.5.

*Cl* **201** *SC* **201.7.1** *P* **109** *L* **29** # 375

Jonsson, Ragnar Infineon

*Comment Type* **T** *Comment Status* **D** *ACT Startup*

100ms is too long, all times in Table 201-6 should be scaled down by 50%

*SuggestedRemedy*

See comment

*Proposed Response* *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

TFTD
Consider comments 375, 376, 213, 399, and 215 together.

*Cl* **201** *SC* **201.7.1** *P* **109** *L* **42** # 376

Jonsson, Ragnar Infineon

*Comment Type* **T** *Comment Status* **D** *ACT Startup*

100ms is too long, all times in Table 201-7 should be scaled down by 50%

*SuggestedRemedy*

See comment

*Proposed Response* *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

TFTD
Consider comments 375, 376, 213, 399, and 215 together.

*Cl* **201** *SC* **201.7.2.1** *P* **110** *L* **18** # 405

Muma, Scott Microchip

*Comment Type* **ER** *Comment Status* **D** *ACT PHY Control*

The state variables subclause of the Link Monitor seems to be incorrect. It has variables for the PHY control state diagram and the PHY control state diagram is a subclause of the variables.

*SuggestedRemedy*

Move the PHY control variables/timers to the state variables section of the PHY Control function. Make the PHY Control state diagram subclause a subclause fo the PHY control function or nmove to the PMA state diagrams in 201.7.8

*Proposed Response* *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

See 3dm_d0pa_Comment_405.pdf for proposed changes to 201.7.
There was an extensive set of changes that are easier to see in a file.

*Cl* **201** *SC* **201.7.2.1.3** *P* **111** *L* **4** # 289

Razavi, Alireza Infineon

*Comment Type* **E** *Comment Status* **D** *ACT PHY Control*

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* **W**

PROPOSED ACCEPT IN PRINCIPLE.

See solution to comment #405 which resolves this.

*Cl* **201** *SC* **201.7.2.1.3** *P* **111** *L* **6** # 212

Abedinzadeh, Bizhan Infineon

*Comment Type* **T** *Comment Status* **D** *ACT PHY control*

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* **W**

PROPOSED ACCEPT IN PRINCIPLE.

TFTD

*Cl* **201** *SC* **201.7.2.1.3** *P* **111** *L* **6** # 210

Abedinzadeh, Bizhan Infineon

*Comment Type* **E** *Comment Status* **D** *EZ*

Figure 201-17 remove MASTER/en_slave_tx

*SuggestedRemedy*

The terms should be changed to LEADER/en_follower_tx

*Proposed Response* *Response Status* **W**

PROPOSED ACCEPT.

*Cl* **201** *SC* **201.7.2.1.3** *P* **111** *L* **6** # 213

Abedinzadeh, Bizhan Infineon

*Comment Type* **T** *Comment Status* **D** *ACT Startup*

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* **W**

PROPOSED ACCEPT IN PRINCIPLE.

TFTD
Consider comments 375, 376, 213, 399, and 215 together.

*Cl* **201** *SC* **201.7.2.1.3** *P* **111** *L* **6** # 209

Abedinzadeh, Bizhan Infineon

*Comment Type* **T** *Comment Status* **D** *ACT PHY control*

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* **W**

PROPOSED ACCEPT.

*Cl* **201** *SC* **201.7.2.1.3** *P* **111** *L* **6** # 211

Abedinzadeh, Bizhan Infineon

*Comment Type* **T** *Comment Status* **D** *ACT PHY control*

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* **W**

PROPOSED ACCEPT IN PRINCIPLE.

TFTD

*Cl* **201** *SC* **201.7.2.1.3** *P* **111** *L* **22** # 76

Zhu, Infineon

*Comment Type* **E** *Comment Status* **D** *EZ*

to unify the names of roles

*SuggestedRemedy*

change to Leader and Follower

*Proposed Response* *Response Status* **W**

PROPOSED ACCEPT.

*Cl* **201** *SC* **201.7.2.1.3** *P* **111** *L* **23** # 290

Razavi, Alireza Infineon

*Comment Type* **E** *Comment Status* **D** *EZ*

en_slave_tx should be replaced by en_follower_tx

*SuggestedRemedy*

see comment

*Proposed Response* *Response Status* **W**

PROPOSED ACCEPT.

*Cl* **201** *SC* **201.7.2.1.3** *P* **111** *L* **40** # 404

Muma, Scott Microchip

*Comment Type* **TR** *Comment Status* **D** *ACT PHY Control*

The rem_countdown_done is defined as "set to TRUE once the receiver has transitioned from PAM2 to PAM4." So it only works for 10G. How shall it be set to true for 2.5G/5G PHY_D HS_RX? No need to wait in that case, but need a variable phy_type to determine if wait is required, or redefine rem_countdown_done to work for 2.5G/5G.

*SuggestedRemedy*

Change (phy_role = PHY_D * rem_countdown_done) to (phy_role = PHY_D * (rem_countdown_done + phy_type != 100M+10GBASE-T1/V1))

*Proposed Response* *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Change: (phy_role = PHY_D * rem_countdown_done)

To: (phy_role = PHY_D * (rem_countdown_done + phy_type = 100M+5GBASE-T1/V1)+ phy_type = 100M+2.5GBASE-T1/V1))

*Cl* **201** *SC* **201.7.3** *P* **112** *L* **18** # 266

McCarthy, Frank Infineon

*Comment Type* **T** *Comment Status* **D** *ACT Link Sync*

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* **W**

PROPOSED ACCEPT IN PRINCIPLE.

TFTD

See also comment #267.

*Cl* **201** *SC* **201.7.3** *P* **112** *L* **42** # 267

McCarthy, Frank Infineon

*Comment Type* **T** *Comment Status* **D** *ACT Link Sync*

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* **W**

PROPOSED ACCEPT IN PRINCIPLE.

TFTD

See also comment #266.

*Cl* **201** *SC* **201.7.3** *P* **112** *L* **44** # 291

Razavi, Alireza Infineon

*Comment Type* **E** *Comment Status* **D** *EZ*

misspelling SENDS_S should eb replaced by SEND_S

*SuggestedRemedy*

see comment

*Proposed Response* *Response Status* **W**

PROPOSED ACCEPT.

*Cl* **201** *SC* **201.7.3.1** *P* **114** *L* **4** # 84

Wienckowski, Natalie IVN Solutions LLC

*Comment Type* **E** *Comment Status* **D** *EZ*

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* **W**

PROPOSED ACCEPT.

*Cl* **201** *SC* **201.7.3.2** *P* **114** *L* **20** # 77

Zhu, Infineon

*Comment Type* **T** *Comment Status* **D** *ACT Link Sync*

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* **W**

PROPOSED REJECT.

The commenter has not provided a specific remedy that can be implemented.

*Cl* **201** *SC* **201.7.3.2** *P* **114** *L* **20** # 398

Muma, Scott — Microchip

*Comment Type* **TR** *Comment Status* **D** *ACT PHY Control*

98.5.2 defines both break_link_timer_[HSM] and break_link_timer_[LSM], so it's ambiguous which should be used since clause 98 AN is not being used.

*SuggestedRemedy*

After see 98.5.2 Add: Refer to break_link_timer_[HSM].

*Proposed Response* *Response Status* **W**

PROPOSED ACCEPT.

A Maintenance request is needed to fix this issue in Clauses 149 and 165.

*Cl* **201** *SC* **201.7.3.2** *P* **114** *L* **23** # 215

Abedinzadeh, Bizhan — Infineon

*Comment Type* **T** *Comment Status* **D** *ACT Startup*

Link_fail_inhibit_timer shall be reduced

*SuggestedRemedy*

Propose changing from 100ms to 50ms

*Proposed Response* *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

TFTD
Consider comments 375, 376, 213, 399, and 215 together.

*Cl* **201** *SC* **201.7.3.2** *P* **114** *L* **23** # 399

Muma, Scott — Microchip

*Comment Type* **T** *Comment Status* **D** *ACT Startup*

The link_fail_inhibit_timer_[HCD] is defined in 98.5.2 as a timer to allow the PHY to determine link integrity. It says "this timer shall expire 97 ms to 98 ms after entering the AN GOOD CHECK state." This state does not exist in the diagram, but assume LINK_GOOD_CHECK is intended instead of AN GOOD CHECK. 97-98ms seems like a very long time to determine link integrity. Suggest 49 to 50 ms or any reasonable value by consensus.

*SuggestedRemedy*

Replace "see 98.5.2" with: Timer for qualifying a link_status=FAIL indication or a link_status=OK indication when a link is first being established. A link will be considered “failed” only if the link_fail_inhibit_timer has expired and the link has still not gone into the link_status=OK state. The expiration time of the link_fail_inhibit_timer shall be 49 ms to 50 ms after entering the LINK_GOOD_CHECK state.

*Proposed Response* *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

TFTD
Consider comments 375, 376, 213, 399, and 215 together.

*Cl* **201** *SC* **201.7.3.4** *P* **115** *L* **1** # 397

Muma, Scott — Microchip

*Comment Type* **TR** *Comment Status* **D** *ACT PHY Control*

The figure shows setting sync_tx_symb to 0 or 1, but these are not valid settings according to 201.7.3.3. Valid settings are SEND_S and SEND_Z. Compare to Figure 149-31

*SuggestedRemedy*

Change the diagram to be SEND_Z in place of 0 and SEND_S in place of 1 when assigning sync_tx_symb.

*Proposed Response* *Response Status* **W**

PROPOSED ACCEPT.

*Cl* **201** *SC* **201.7.7** *P* **116** *L* **26** # 407

Muma, Scott — Microchip

*Comment Type* **TR** *Comment Status* **D** *ACT PHY Control*

Why is this specific to 100M+MultiGBASE-T1/V1 when it's under the Common PMA Functions section?

*SuggestedRemedy*

Possibly delete this section or correct depending on other changes/intent.

*Proposed Response* *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

See comment #405. This is moved as part of that response.

*Cl* **201** *SC* **201.7.8** *P* **116** *L* **30** # 406

Muma, Scott — Microchip

*Comment Type* **TR** *Comment Status* **D** *ACT PHY Control*

Subclause 149.4.4 doesn't contain any state diagrams, so this reference is incorrect. Assuming 149.4.5 was intended, now the only new information is the PHY Control state diagram which will conflict with the PHY control state diagram in 201.7.2.3

*SuggestedRemedy*

Provide the intended PHY Control state diagram.

*Proposed Response* *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Resolved with response to comment #405.

*Cl* **201** *SC* **201.8** *P* **116** *L* **35** # 137

Wang, Frank — Realtek Semiconductor Corp.

*Comment Type* **E** *Comment Status* **D** *EZ*

typo

*SuggestedRemedy*

change "forthe high speed path" to "for the HS_PATH"

*Proposed Response* *Response Status* **W**

PROPOSED ACCEPT. corrected page number

*Cl* **201** *SC* **201.8** *P* **116** *L* **35** # 206

van Dyck, Peter — Infineon

*Comment Type* **E** *Comment Status* **D** *EZ*

"forthe" space missing

*SuggestedRemedy*

Replace with "for the"

*Proposed Response* *Response Status* **W**

PROPOSED ACCEPT.

*Cl* **201** *SC* **201.8** *P* **116** *L* **36** # 334

Jonsson, Ragnar — Infineon

*Comment Type* **E** *Comment Status* **D** *EZ*

missing space between 'for' and 'the'

*SuggestedRemedy*

for the high speed path

*Proposed Response* *Response Status* **W**

PROPOSED ACCEPT.

*Cl* **201** *SC* **201.8.1** *P* **117** *L* **26** # 85

Wienckowski, Natalie — IVN Solutions LLC

*Comment Type* **E** *Comment Status* **D** *EZ*

*SuggestedRemedy*

change character type of 94.2.9.1 to "External"

*Proposed Response* *Response Status* **W**

PROPOSED ACCEPT.

*Cl* **201** *SC* **201.8.1** *P* **117** *L* **26** # 336

Jonsson, Ragnar Infineon

*Comment Type* **T** *Comment Status* **D** *ACT tests*

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* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Included in response for comment #337.

*Cl* **201** *SC* **201.8.1** *P* **117** *L* **26** # 243

Sakunia, Saket Infineon Technologies

*Comment Type* **E** *Comment Status* **D** *EZ*

External text reference 94.2.9.1, should be in green

*SuggestedRemedy*

*Proposed Response* *Response Status* **W**

PROPOSED ACCEPT.

*Cl* **201** *SC* **201.8.1** *P* **117** *L* **27** # 86

Wienckowski, Natalie IVN Solutions LLC

*Comment Type* **E** *Comment Status* **D** *EZ*

*SuggestedRemedy*

change character type of 94.2.9.2 to "External"

*Proposed Response* *Response Status* **W**

PROPOSED ACCEPT.

*Cl* **201** *SC* **201.8.1** *P* **117** *L* **27** # 337

Jonsson, Ragnar Infineon

*Comment Type* **T** *Comment Status* **D** *ACT tests*

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* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Change: 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.

To: When test mode 2 is enabled, when transmitting PAM4, 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.
When test mode 2 is enabled, when transmitting PAM2, the PHY shall transmit a continuous pattern of 0101 with the transmitted symbols timed from its local clock source.

Also need to modify 2.8.2.3.1, Table 201-9
Add column on the left called "modulation". This should be PAM4 for rows 2-4 and PAM2 for the 5th row.
Change the Test pattern in row 5 to be 0101 (as specified in 130.7.1.9)

*Cl* **201** *SC* **201.8.1** *P* **117** *L* **27** # 244

Sakunia, Saket Infineon Technologies

*Comment Type* **E** *Comment Status* **D** *EZ*

External text reference 94.2.9.1, should be in green

*SuggestedRemedy*

*Proposed Response* *Response Status* **W**

PROPOSED ACCEPT.

*Cl* **201** *SC* **201.8.1** *P* **117** *L* **38** # 87

Wienckowski, Natalie IVN Solutions LLC

*Comment Type* **E** *Comment Status* **D** *EZ*

*SuggestedRemedy*

change character type of 94.3.10.8 to "External"

*Proposed Response* *Response Status* **W**

PROPOSED ACCEPT.

*Cl* **201** *SC* **201.8.1** *P* **117** *L* **50** # 138

Wang, Frank Realtek Semiconductor Corp.

*Comment Type* **E** *Comment Status* **D** *EZ*

wording

*SuggestedRemedy*

change "2.5GBASE-T1, 5GBASE-T1, or 10GBASE-T1" to "multiG+100M/100M+MultiGBASE-T1/V1"

*Proposed Response* *Response Status* **W**

PROPOSED ACCEPT.
corrected page number

*Cl* **201** *SC* **201.8.2.1** *P* **120** *L* **48** # 380

Johnson, Samuel Infineon

*Comment Type* **T** *Comment Status* **D** *ACT tests*

For Output Droop Test, the measurement requires a frequency-locked clock.

*SuggestedRemedy*

Add to section "201.8.2.1 Maximum output droop" after existing text

"It is recommended that a FOLLOWER PHY nominally operating in XTAL-less mode should include a method to use a reference clock provided by the measurement device."

*Proposed Response* *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Accomplished by implementation of comment #335 solution.

*Cl* **201** *SC* **201.8.2.2** *P* **121** *L* **4** # 88

Wienckowski, Natalie IVN Solutions LLC

*Comment Type* **E** *Comment Status* **D** *EZ*

*SuggestedRemedy*

change character type of 120D.3.1.2 to "External"

*Proposed Response* *Response Status* **W**

PROPOSED ACCEPT.

*Cl* **201** *SC* **201.8.2.2** *P* **121** *L* **8** # 240

Sakunia, Saket Infineon Technologies

*Comment Type* **T** *Comment Status* **D** *ACT tests*

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* **W**

PROPOSED REJECT.

The commenter has not provided a suggested value of Np to use.

Also, Np is not in 201.8.2.2.

*Cl* **201** *SC* **201.8.2.2** *P* **122** *L* **1** # 381

Johnson, Samuel Infineon

*Comment Type* **T** *Comment Status* **D** *ACT tests*

For Linearity Test, the measurement requires a frequency-locked clock.

*SuggestedRemedy*

Add to section "201.8.2.2 Transmitter linearity" after existing text

"It is recommended that a FOLLOWER PHY nominally operating in XTAL-less mode should include a method to use a reference clock provided by the measurement device."

*Proposed Response* *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Accomplished by implementation of comment #335 solution.

*Cl* **201** *SC* **201.8.2.3** *P* **121** *L* **21** # 303

Penumuchu, Venkat — Infineon Technologies

*Comment Type* **TR** *Comment Status* **D** *ACT tests*

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* **W**

PROPOSED ACCEPT IN PRINCIPLE.

change the second coulmn in the table 201-8, use J=1 for 5G, and use J=2 for 2.5G.

*Cl* **201** *SC* **201.8.2.3** *P* **121** *L* **40** # 338

Jonsson, Ragnar — Infineon

*Comment Type* **T** *Comment Status* **D** *ACT tests*

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* **W**

PROPOSED ACCEPT.

*Cl* **201** *SC* **201.8.2.4** *P* **122** *L* **39** # 382

Johnson, Samuel — Infineon

*Comment Type* **T** *Comment Status* **D** *ACT tests*

For PSD Test, the measurement requires a frequency-locked clock.

*SuggestedRemedy*

Add to section "201.8.2.4 "Transmitter power spectral desnsity (PSD) and power level" after the existing text:

"It is recommended that a FOLLOWER PHY nominally operating in XTAL-less mode should include a method to use a reference clock provided by the measurement device."

*Proposed Response* *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Accomplished by implementation of comment #335 solution.

*Cl* **201** *SC* **201.8.2.4** *P* **123** *L* **16** # 236

Pandey, Sujan — Velinktech

*Comment Type* **ER** *Comment Status* **D** *EZ*

all "HZ"

*SuggestedRemedy*

Hz

*Proposed Response* *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Scan the document and replace all instances of "HZ" with "Hz".

Val to update Clause 202.

*Cl* **201** *SC* **201.8.2.6** *P* **125** *L* **28** # 330

Johnson, Samuel — Infineon

*Comment Type* **T** *Comment Status* **D** *ACT transmitter*

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* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Change the text to:
"For the FOLLOWER PHY running off free-running clock, shall be within the range 5624 * S MHz +/-20% and the short term rate of frequency variation shall be less than 1% / second

*Cl* **201** *SC* **201.8.2.6** *P* **125** *L* **29** # 377

Jonsson, Ragnar — Infineon

*Comment Type* **T** *Comment Status* **D** *ACT transmitter*

Clock accuracy in crystal-less mode: change +/-10% should be +/-20%

*SuggestedRemedy*

See comment

*Proposed Response* *Response Status* **W**

PROPOSED ACCEPT.

*Cl* **201** *SC* **201.8.2.6** *P* **125** *L* **29** # 341

Jonsson, Ragnar Infineon

*Comment Type* **T** *Comment Status* **D** *ACT transmitter*

What does short term mean? How short? Need clear definition

*SuggestedRemedy*

*Proposed Response* *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

TFTD what that correct meaning is

A specific length of time, or number of bits, etc. should be specified.

*Cl* **201** *SC* **201.8.2.8** *P* **125** *L* **9** # 241

Sakunia, Saket Infineon Technologies

*Comment Type* **T** *Comment Status* **D** *ACT transmitter*

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* **W**

PROPOSED ACCEPT IN PRINCIPLE.

TFTD
Consider with comment #340 which changes the 10G voltage.

Should the 2.5G voltage be raised?

*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* **D** *ACT noise*

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* **W**

PROPOSED ACCEPT.

*Cl* **201** *SC* **201.8.3.2** *P* **126** *L* **1** # 292

Razavi, Alireza Infineon

*Comment Type* **E** *Comment Status* **D** *EZ*

camma is missing after specification "specification the frame loss ratio is less than"

*SuggestedRemedy*

see comment

*Proposed Response* *Response Status* **W**

PROPOSED ACCEPT.

Cl **201** SC **201.8.3.2** P **126** L **38** # 242

Sakunia, Saket Infineon Technologies

*Comment Type* **T** *Comment Status* **D** *ACT noise*

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* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Accomplished by implementation of comment #190 solution.

Cl **201** SC **201.9.1** P **127** L **51** # 89

Wienckowski, Natalie IVN Solutions LLC

*Comment Type* **E** *Comment Status* **D** *EZ*

*SuggestedRemedy*

change character type of 94.2.9.1 to "External"

*Proposed Response* *Response Status* **W**

PROPOSED ACCEPT.

Cl **201** SC **201.9.1** P **127** L **51** # 245

Sakunia, Saket Infineon Technologies

*Comment Type* **E** *Comment Status* **D** *EZ*

External text reference 94.2.9.1, should be in green

*SuggestedRemedy*

*Proposed Response* *Response Status* **W**

PROPOSED ACCEPT.

Cl **201** SC **201.9.1** P **127** L **52** # 246

Sakunia, Saket Infineon Technologies

*Comment Type* **E** *Comment Status* **D** *EZ*

External text reference 94.2.9.1, should be in green

*SuggestedRemedy*

*Proposed Response* *Response Status* **W**

PROPOSED ACCEPT.

Cl **201** SC **201.9.1** P **127** L **52** # 90

Wienckowski, Natalie IVN Solutions LLC

*Comment Type* **E** *Comment Status* **D** *EZ*

*SuggestedRemedy*

change character type of 94.2.9.2 to "External"

*Proposed Response* *Response Status* **W**

PROPOSED ACCEPT.

Cl **201** SC **201.9.1** P **127** L **52** # 342

Jonsson, Ragnar Infineon

*Comment Type* **T** *Comment Status* **D** *ACT tests*

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* **W**

PROPOSED ACCEPT IN PRINCIPLE.

TFTD

Text is needed or comment will be rejected.

Cl **201** SC **201.9.1** P **128** L **2** # 91

Wienckowski, Natalie IVN Solutions LLC

*Comment Type* **E** *Comment Status* **D** *EZ*

*SuggestedRemedy*

change character type of 94.3.10.8 to "External"

*Proposed Response* *Response Status* **W**

PROPOSED ACCEPT.

Cl **201** SC **201.9.2** P **132** L **46** # 333

Johnson, Samuel Infineon

*Comment Type* **T** *Comment Status* **D** *ACT clock*

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* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Create section 201.9.2.8 "Transmitter Rise and Fall Time" and add text:

"The transmitter rise and fall time requirements specified in this subclause apply when the D_PHY is used to provide a reference clock for XTAL-less operation of S_PHY. Limiting the transmitter transition times reduces deterministic jitter of the derived reference at the receiving PHY.
The rise/fall transition time between 20% and 80% levels of the steady state voltage amplitude shall be less than 1.5 ns. The rise time and fall time shall be measured at MDI using Test mode 4. "

Cl **201** SC **201.9.2.2** P **128** L **48** # 92

Wienckowski, Natalie IVN Solutions LLC

*Comment Type* **E** *Comment Status* **D** *EZ*

*SuggestedRemedy*

change character type of 85.8.3.3.4 to "External"

*Proposed Response* *Response Status* **W**

PROPOSED ACCEPT.

Cl **201** SC **201.9.2.5** P **130** L **1** # 237

Pandey, Sujan Velinktech

*Comment Type* **ER** *Comment Status* **D** *EZ*

dBM/Hz

*SuggestedRemedy*

dBm/Hz

*Proposed Response* *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Replace all instances of "dBM" with "dBm".

Val to check clause 202.

Cl **201** SC **201.9.2.5** P **130** L **40** # 247

Sakunia, Saket Infineon Technologies

*Comment Type* **T** *Comment Status* **D** *ACT tests*

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* **W**

PROPOSED ACCEPT IN PRINCIPLE.

For the UpperPSD mask in equation 201-8, change 400 to 3500

*Cl* **201** *SC* **201.9.2.5** *P* **131** *L* **1** # 293

Razavi, Alireza Infineon

*Comment Type* **E** *Comment Status* **D** *EZ*

in lines 2 and 3, wrong notation: dBM/Hz should be replaced with 'dBm/Hz'

*SuggestedRemedy*

see comment

*Proposed Response* *Response Status* **W**

PROPOSED ACCEPT.

*Cl* **201** *SC* **201.9.2.5** *P* **131** *L* **2** # 238

Pandey, Sujan Velinktech

*Comment Type* **ER** *Comment Status* **D** *EZ*

dBM/Hz

*SuggestedRemedy*

dBm/Hz

*Proposed Response* *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

See response to comment #237.

*Cl* **201** *SC* **201.9.2.6** *P* **132** *L* **36** # 239

Pandey, Sujan Velinktech

*Comment Type* **ER** *Comment Status* **D** *EZ*

… the transmit signalof ...

*SuggestedRemedy*

… the transmit signal of ...

*Proposed Response* *Response Status* **W**

PROPOSED ACCEPT.

*Cl* **201** *SC* **201.9.2.6** *P* **132** *L* **36** # 294

Razavi, Alireza Infineon

*Comment Type* **E** *Comment Status* **D** *EZ*

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* **W**

PROPOSED ACCEPT.

*Cl* **201** *SC* **201.9.2.6** *P* **132** *L* **36** # 93

Wienckowski, Natalie IVN Solutions LLC

*Comment Type* **E** *Comment Status* **D** *EZ*

missing space

*SuggestedRemedy*

Add a space between "signal" and "of".

*Proposed Response* *Response Status* **W**

PROPOSED ACCEPT.

*Cl* **201** *SC* **201.9.3** *P* **133** *L* **1** # 248

Sakunia, Saket Infineon Technologies

*Comment Type* **T** *Comment Status* **D** *ACT tests*

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* **W**

PROPOSED ACCEPT.

*Cl* **201** *SC* **201.11.1.1** *P* **133** *L* **46** # 384

Cheng, Xiaoyue Infineon

*Comment Type* **T** *Comment Status* **D** *ACT Link Segment*

Insertion loss spec starts from 3MHz, but return loss spec starts from 1MHz

*SuggestedRemedy*

Modify insertion loss spec to start from1MHz

*Proposed Response* *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Change return loss spec to start at 3 MHz.

*Cl* **201** *SC* **201.11.1.1** *P* **133** *L* **51** # 383

Cheng, Xiaoyue Infineon

*Comment Type* **E** *Comment Status* **D** *ACT Link Segment*

The unit for Fmax should be GHz or MHz, not Gb/s

*SuggestedRemedy*

Change to GHz

*Proposed Response* *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Use MHz to be consistent with the rest of the draft.

Change 2 Gb/s to 2,000 MHz

Change 4 Gb/s to 4,000 MHz

*Cl* **201** *SC* **201.11.1.3** *P* **135** *L* **31** # 249

Sakunia, Saket Infineon Technologies

*Comment Type* **E** *Comment Status* **D** *EZ*

Return loss instead of "IReturn Loss"

*SuggestedRemedy*

*Proposed Response* *Response Status* **W**

PROPOSED ACCEPT.

*Cl* **201** *SC* **201.11.1.6** *P* **135** *L* **48** # 386

Cheng, Xiaoyue Infineon

*Comment Type* **E** *Comment Status* **D** *ACT Link Segment*

should be link segment delay

*SuggestedRemedy*

change link delay to link segment delay

*Proposed Response* *Response Status* **W**

PROPOSED REJECT.

This is the common title for this subclause throughout 802.3.

*Cl* **201** *SC* **201.11.1.6** *P* **135** *L* **49** # 387

Cheng, Xiaoyue Infineon

*Comment Type* **E** *Comment Status* **D** *ACT Link Segment*

should be link segment delay

*SuggestedRemedy*

change link delay to link segment delay

*Proposed Response* *Response Status* **W**

PROPOSED REJECT.

This is the common title for this subclause throughout 802.3.

*Cl* **201** *SC* **201.11.1.6** *P* **135** *L* **50** # 385

Cheng, Xiaoyue Infineon

*Comment Type* **T** *Comment Status* **D** *ACT Link Segment*

maximum link segment delay. No frequency range

*SuggestedRemedy*

Add "at all frequencies between 2 MHz and Fmax" at the end of the sentence.

*Proposed Response* *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Change: The maximum link delay of each MultiG+100M/100M+MultiGBASE-T1 link shall be 160 ns.

To: The propagation delay of a MultiG+100M/100M+MultiGBASE-T1 link segment shall not exceed 160 ns at all frequencies between 2 MHz and Fmax MHz.

*Cl* **201** *SC* **201.12.1.6** *P* **136** *L* **49** # 388

Cheng, Xiaoyue Infineon

*Comment Type* **E** *Comment Status* **D** *ACT Link Segment*

should be link segment delay

*SuggestedRemedy*

change link delay to link segment delay

*Proposed Response* *Response Status* **W**

PROPOSED REJECT.

This is the common title for this subclause throughout 802.3.

*Cl* **201** *SC* **201.12.1.6** *P* **136** *L* **50** # 389

Cheng, Xiaoyue Infineon

*Comment Type* **E** *Comment Status* **D** *ACT Link Segment*

should be link segment delay

*SuggestedRemedy*

change link delay to link segment delay

*Proposed Response* *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Change: The maximum link delay of each MultiG+100M/100M+MultiGBASE-V1 link shall be 160 ns.

To: The propagation delay of a MultiG+100M/100M+MultiGBASE-V1 link segment shall not exceed 160 ns at all frequencies between 2 MHz and Fmax MHz.

*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* **D** *EZ*

Editor's note is not needed as Fmax is already scaled here.

*SuggestedRemedy*

Delete editor's note.

*Proposed Response* *Response Status* **W**

PROPOSED ACCEPT.

*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* **D** *ACT MDI*

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* **W**

PROPOSED ACCEPT IN PRINCIPLE.

TFTD

*Cl* **201** *SC* **201.16** *P* **139** *L* # 275

Lo, William Axonne Inc

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

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* **D** *ACT Delay*

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* **W**

PROPOSED ACCEPT.

*Cl* **201** *SC* **201-20** *P* **115** *L* **37** # 214

Abedinzadeh, Bizhan — Infineon

*Comment Type* **T** *Comment Status* **D** *ACT PHY Control*

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* **W**

PROPOSED ACCEPT IN PRINCIPLE.

TFTD

*Cl* **201** *SC* **201.8.1** *P* **120** *L* **11** # 335

Jonsson, Ragnar — Infineon

*Comment Type* **T** *Comment Status* **D** *ACT tests*

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* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Remove the dashed line and transmit refrence clock in figures 201-21,22,26,27.

Add the following note to figures 201-21,22,26,27: " NOTE- It is recommended that a FOLLOWER PHY in XTAL-less mode include a method to use a reference clock provided by the measurement device."

*Cl* **201** *SC* **Table 201-11** *P* **125** *L* **15** # 339

Jonsson, Ragnar Infineon

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

*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* **D** *ACT transmitter*

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* **W**

PROPOSED ACCEPT IN PRINCIPLE.

TFTD
Consider with comment #241

In table 201-11
Change the row for 10G to read
10G | 1.5 | 0.75

*Cl* **202** *SC* **202.1.5** *P* **148** *L* **49** # 139

Wang, Frank Realtek Semiconductor Corp.

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

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* **W**

PROPOSED ACCEPT IN PRINCIPLE.

(Editor's note: The term "polarity" may be causing confusion.)

Consider with Comment #140 and Comment #100.

TFTD and consider alternative wordings:
Old: "to detect and correct for media polarity inversions"
New: "to detect and correct for signal inversions"

Old: "detect and correct for incorrect polarity in the connection"
New: "detect and correct for signal inversion"

*Cl* **202** *SC* **202.1.6** *P* **149** *L* **17** # 140

Wang, Frank Realtek Semiconductor Corp.

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

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* **W**

PROPOSED ACCEPT IN PRINCIPLE.

(Editor's note: The term "polarity" may be causing confusion.)

Consider with Comment #139 and #100.

TFTD and consider alternative wordings:
Old: "to detect and correct for media polarity inversions"
New: "to detect and correct for signal inversions"

*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* **D** *EZ*

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* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Accommodated by comment #94.

*Cl* **202** *SC* **202.1.7** *P* **149** *L* **26** # 94

Wienckowski, Natalie — IVN Solutions LLC

*Comment Type* **E** *Comment Status* **D** *EZ*

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* **W**

PROPOSED ACCEPT.

*Cl* **202** *SC* **202.1.8** *P* **140** *L* **32** # 95

Wienckowski, Natalie — IVN Solutions LLC

*Comment Type* **E** *Comment Status* **D** *EZ*

duplicated sentence

*SuggestedRemedy*

Delete one instance of "All MultiG+100M/100M+MultiGBASE-T1 PHY implementations are compatible at the MDI.".

*Proposed Response* *Response Status* **W**

PROPOSED REJECT.

(Editor's note: Comment applies to text on P149, L32.)

One sentence applies to -T1 and the other applies to -V1. These are not duplicate sentences and the current wording is intentional since -T1 and -V1 PHYs are not compatible with each other at the MDI.

*Cl* **202** *SC* **202.1.8** *P* **149** *L* **30** # 141

Wang, Frank — Realtek Semiconductor Corp.

*Comment Type* **E** *Comment Status* **D** *EZ*

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* **W**

PROPOSED REJECT.

(Editor's note: Corrected page number in comment record.)

One sentence applies to -T1 and the other applies to -V1. These are not duplicate sentences and the current wording is intentional since -T1 and -V1 PHYs are not compatible with each other at the MDI.

*Cl* **202** *SC* **202.2.1.4.2** *P* **154** *L* **2** # 142

Wang, Frank — Realtek Semiconductor Corp.

*Comment Type* **E** *Comment Status* **D** *EZ*

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* **W**

PROPOSED ACCEPT IN PRINCIPLE.

(Editor's note: Corrected page number in comment record. Even though there is precedent, the use of ";" doesn't improve clarity. The 6 GHz requirements could be merged.)

Replace,
"The nominal rate of the PMA_UNITDATA.indication primitive is 3 GHz for100M+2.5GBASE-T1/V1 and MultiG+100MBASE-T1/V1, 6 GHz for 100M+5GBASE-T1/V1, and 6 GHz for 100M+10GBASE-T1/V1 as governed by the recovered clock."

with,
"The nominal rate of the PMA_UNITDATA.indication primitive, as governed by the recovered clock, is 3 GHz for100M+2.5GBASE-T1/V1 and MultiG+100MBASE-T1/V1 and 6 GHz for 100M+5GBASE-T1/V1 and 100M+10GBASE-T1/V1."

*Cl* **202** *SC* **202.2.1.7.3** *P* **155** *L* **33** # 316

Gorshe, Steve Microchip

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

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* **W**

PROPOSED ACCEPT IN PRINCIPLE.

(Editor's note: Commenter adds "the" between "of" and "receipt", which is not aligned with similar phrases in the document.)

Replace the current text with "The effect of 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.

*Cl* **202** *SC* **202.3.2.1** *P* **161** *L* **13** # 96

Wienckowski, Natalie IVN Solutions LLC

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

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* **W**

PROPOSED ACCEPT IN PRINCIPLE.

(Editor's note: This is about the control and management interface restoration time following PCS Reset, not the time from power_on to data transmission. Clause 149 uses 10 ms for this time. Propose to align.)

Change "(TBD) ms" to "10 (TBD) ms"

*Cl* **202** *SC* **202.3.2.2** *P* **163** *L* **12** # 143

Wang, Frank Realtek Semiconductor Corp.

*Comment Type* **E** *Comment Status* **D** *EZ*

wording

*SuggestedRemedy*

change "On" to "On"

*Proposed Response* *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

(Editor's note: Corrected page number in comment record.)

Apply italics font to "On"

*Cl* **202** *SC* **202.3.2.2.5** *P* **168** *L* **10** # 144

Wang, Frank Realtek Semiconductor Corp.

*Comment Type* **E** *Comment Status* **D** *EZ*

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* **W**

PROPOSED ACCEPT IN PRINCIPLE.

(Editor's note: Corrected page number in comment record. No change to Suggested Remedy.)

change "their mappings to control codes" to "their mappings to MultiG+100M/100M+MultiGBASE-T1/V1 control codes"

*Cl* **202** *SC* **202.3.2.2.5** *P* **168** *L* **14** # 145

Wang, Frank — Realtek Semiconductor Corp.

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

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* **W**

PROPOSED ACCEPT IN PRINCIPLE.

(Editor's note: Corrected page number in comment record. There is no ambiguity here so the table title can just be "Control codes" as per Table 82-1, 55-1, 49-1, etc. It only needs more information in clauses which have multiple tables of control codes.)

change "Control codes MultiG+100M/100M+MultiGBASE-T1/V1"

to "Control codes"

*Cl* **202** *SC* **202.3.2.2.22** *P* **172** *L* **29** # 331

Johnson, Samuel — Infineon

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

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* **Z**

PROPOSED REJECT.

This comment was WITHDRAWN by the commenter.

*Cl* **202** *SC* **202.3.2.2.22** *P* **172** *L* **52** # 332

Johnson, Samuel — Infineon

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

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* **Z**

PROPOSED REJECT.

This comment was WITHDRAWN by the commenter.

*Cl* **202** *SC* **202.3.2.2.22** *P* **176** *L* **1** # 97

Wienckowski, Natalie — IVN Solutions LLC

*Comment Type* **E** *Comment Status* **D** *EZ*

subject verb agrement

*SuggestedRemedy*

Change "transmit process send out" to "transmit process sends out".

*Proposed Response* *Response Status* **W**

PROPOSED ACCEPT.

*Cl* **202** *SC* **202.3.2.3** *P* **176** *L* **38** # 146

Wang, Frank — Realtek Semiconductor Corp.

*Comment Type* **E** *Comment Status* **D** *EZ*

wording: "_" is missed (also for lines 39, 49, and 52)

*SuggestedRemedy*

change "block lock" to "block_lock"

*Proposed Response* *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

(Editor's note: Corrected page number in comment record. Added additional location.)

change "block lock" to "block_lock" in the following locations:

P176, L38 - two locations
P176, L39
P176, L49
P176, L52
P178, L52

*Cl* **202** *SC* **202.3.2.3** *P* **176** *L* **41** # 98

Wienckowski, Natalie IVN Solutions LLC

*Comment Type* **E** *Comment Status* **D** *EZ*

missing bracket

*SuggestedRemedy*

Change "RXD 31:0>" to "RXD <31:0>"

*Proposed Response* *Response Status* **W**

PROPOSED ACCEPT.

*Cl* **202** *SC* **202.3.5.2.1** *P* **183** *L* **43** # 99

Wienckowski, Natalie IVN Solutions LLC

*Comment Type* **T** *Comment Status* **D** *Refresh Header*

Incorrect number of bytes and awkward wording.

*SuggestedRemedy*

Change "four bytes header" to "eight header bytes"

*Proposed Response* *Response Status* **W**

PROPOSED ACCEPT.

*Cl* **202** *SC* **202.4.2.2** *P* **209** *L* **41** # 400

Muma, Scott Microchip

*Comment Type* **E** *Comment Status* **D** *EZ*

The editor's note can be removed as the descriptions of the timers are up to date with their usage in the diagram

*SuggestedRemedy*

Remove editor's note

*Proposed Response* *Response Status* **W**

PROPOSED ACCEPT.

*Cl* **202** *SC* **202.4.2.3** *P* **200** *L* **7** # 147

Wang, Frank Realtek Semiconductor Corp.

*Comment Type* **E** *Comment Status* **D** *EZ*

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* **W**

PROPOSED ACCEPT IN PRINCIPLE.

(Editor's note: Corrected page number in comment record. This sentence is hard to parse. Text proposed to resolve comment and improve clarity.)

Replace,
"The PMA Receive function uses the parameters pcs_status and scr_status, and the state of the equalization, and estimation functions to determine the quality of the receiver performance, and generates the loc_rcvr_status variable accordingly."

with, "The PMA Receive function uses the parameters pcs_status and scr_status, as well as the state of the equalization and estimation functions, to determine the quality of the receiver performance and generates the loc_rcvr_status variable accordingly."

*Cl* **202** *SC* **202.4.2.3** *P* **200** *L* **16** # 100

Wienckowski, Natalie IVN Solutions LLC

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

polarity inversion applies to balanced pair only

*SuggestedRemedy*

at the end of the sentence add, "for balanced pair only."

*Proposed Response* *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

(Editor's note: The term "polarity" may be causing confusion.)

Consider with Comment #139 and #140.

TFTD and consider alternative wordings:
Old: "to detect and correct for media polarity inversions"
New: "to detect and correct for signal inversions"

Old: "detect and correct for incorrect polarity in the connection"
New: "detect and correct for signal inversion"

*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** *TDD speeds*

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* **W**

PROPOSED ACCEPT IN PRINCIPLE.

(Editor's note: Need consensus on whether the intent is a multi-rate PHY that may support any combination of rates including a single rate, 2.5G plus another rate, or if it must support all speeds lower than the maximum rate.)

TFTD

*Cl* **202** *SC* **202.4.2.4.7** *P* **204** *L* **16** # 148

Wang, Frank Realtek Semiconductor Corp.

*Comment Type* **E** *Comment Status* **D** *EZ*

202.4.2.4.7 Phase switch PHY burst count

*SuggestedRemedy*

change "data switch" to "phase switch"

*Proposed Response* *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

(Editor's note: Corrected page number in comment record. No change to Suggested Remedy.)

change "data switch" to "phase switch"

*Cl* **202** *SC* **202.4.2.4.11** *P* **205** *L* **47** # 149

Wang, Frank Realtek Semiconductor Corp.

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

grammar: comma afrer "PrecoderSel"

*SuggestedRemedy*

change "PrecoderSel and" to "PrecoderSel, and"

*Proposed Response* *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

(Editor's note: Corrected page number in comment record. No change to Suggested Remedy.)

change "PrecoderSel and" to "PrecoderSel, and"

*Cl* **202** *SC* **202.4.2.4.11** *P* **205** *L* **52** # 150

Wang, Frank — Realtek Semiconductor Corp.

*Comment Type* **T** *Comment Status* **X** *EZ - pull*

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* **W**

PROPOSED ACCEPT IN PRINCIPLE.

(Editor's note: Corrected page number in comment record. "stage" should be "state" and probably doesn't need to be repeated. "and" should be "or".)

Change "At any COUNTDOWN state"

to "At any COUNTDOWN or PCS_TEST state"

Additional input from Commenter:
After checking the statement in 149.4.2.4.10, I prefer to replace "At any COUNTDOWN state" with "At any time during the COUNTDOWN0 state or following the TRAINING1 state".

149.4.2.4.10 now: At any time following the TRAINING state, .
202.4.2.4.11 now: At any COUNTDOWN state, .
202.4.2.4.11 new: At any time during the COUNTDOWN0 state or following the TRAINING1 state, .

*Cl* **202** *SC* **202.4.2.5** *P* **206** *L* **16** # 151

Wang, Frank — Realtek Semiconductor Corp.

*Comment Type* **E** *Comment Status* **D** *EZ*

wording: "_" is missed

*SuggestedRemedy*

change "link status" to "link_status"

*Proposed Response* *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

(Editor's note: Corrected page number in comment record. Clarified that change occurs in 2 locations.)

change "link status" to "link_status" in two locations on P206, L16

*Cl* **202** *SC* **202.4.5** *P* **213** *L* **219** # 408

Lee, Ching-Yen — Realtek Semiconductor Corp.

*Comment Type* **T** *Comment Status* **D** *Link Monitor*

Figure 202-28 needs to be updated.

*SuggestedRemedy*

A presentation will be provided.

*Proposed Response* *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

TFTD

*Cl* **202** *SC* **202.5.1** *P* **216** *L* **18** # 220

Chini, Ahmad — Broadcom

*Comment Type* **T** *Comment Status* **D** *TDD tests*

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* **W**

PROPOSED ACCEPT IN PRINCIPLE.

(Editor's note: ppm isn't capitalized and there should be a space between the Unit and ppm - give Editors license to check and correct. No other change to Suggested Remedy.)

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 100 ppm accuracy for this test."

Grant Editors license to search and insert a space between a Unit and "ppm".

*Cl* **202** *SC* **202.5.1** *P* **216** *L* **21** # 307

Gorshe, Steve — Microchip

*Comment Type* **E** *Comment Status* **D** *TDD tests*

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* **W**

PROPOSED ACCEPT IN PRINCIPLE.

(Editor's note: There is an em-dash before 1 (not a hyphen/minus sign). No other change to Suggested Remedy.)

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."

*Cl* **202** *SC* **202.5.1.1** *P* **216** *L* **35** # 305

Gorshe, Steve — Microchip

*Comment Type* **T** *Comment Status* **D** *TDD tests*

As explained in the next comment, test fixture 6 should be removed

*SuggestedRemedy*

Remove the reference to Figure 202-35

*Proposed Response* *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

(Editor's note: Consider Comment #306 first. Propose tp merge this Suggested Remedy into the Response to Comment #306 to accommodate this comment.)

Accommodated by Comment #306.

*Cl* **202** *SC* **202.5.1.1** *P* **218** *L* **20** # 306

Gorshe, Steve Microchip

*Comment Type* **T** *Comment Status* **D** *TDD tests*

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* **W**

PROPOSED ACCEPT IN PRINCIPLE.

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"

Remove the reference to Figure 202-35 on P216, L35.

*Cl* **202** *SC* **202.5.2** *P* **218** *L* **36** # 101

Wienckowski, Natalie IVN Solutions LLC

*Comment Type* **T** *Comment Status* **D** *TDD tests*

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 O for MultiG+100M/100M+MultiGBASE-T1 or a 50 O 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 O resistive differential load connected to each transmitter output when connected to a -T1 link, and a 50 O
resistive load connected to each single-ended transmitter output when connected to a -V1 link.

*Proposed Response* *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

(Editor's note: No change to Suggested Remedy. Added direction that "O" is a stand-in for the ohms symbol.)

Change: "Where a load is not specified, the transmitter shall meet the requirements of this clause with a 100 O for MultiG+100M/100M+MultiGBASE-T1 or a 50 O 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 O resistive differential load connected to each transmitter output when connected to a -T1 link, and a 50 O
resistive load connected to each single-ended transmitter output when connected to a -V1 link."

where "O" is a stand-in for the ohms symbol.

*Cl* **202** *SC* **202.5.2.3** *P* **220** *L* **22** # 309

Gorshe, Steve Microchip

*Comment Type* **T** *Comment Status* **D** *TDD tests*

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* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Change clause header from,
"202.5.2.3 Transmitter timing jitter"

to,
"202.5.2.3 Transmitter timing jitter and jitter at the MDI"

*Cl* **202** *SC* **202.5.2.3** *P* **220** *L* **23** # 308

Gorshe, Steve Microchip

*Comment Type* **T** *Comment Status* **D** *TDD tests*

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* **W**

PROPOSED ACCEPT IN PRINCIPLE.

(Editor's note: Missing close parens after Figure 202-31. No other change to Suggested Remedy.)

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"

*Cl* **202** *SC* **202.5.2.3.1** *P* **220** *L* **40** # 310

Gorshe, Steve Microchip

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

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* **W**

PROPOSED ACCEPT.

*Cl* **202** *SC* **202.5.2.3.2** *P* **220** *L* **40** # 311

Gorshe, Steve Microchip

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

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* **W**

PROPOSED ACCEPT.

*Cl* **202** *SC* **202.5.2.4** *P* **224** *L* **1** # 218

Chini, Ahmad Broadcom

*Comment Type* **T** *Comment Status* **D** *TDD tests*

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* **W**

PROPOSED ACCEPT IN PRINCIPLE.

TFTD

*Cl* **202** *SC* **202.5.2.5** *P* **225** *L* **7** # 219

Chini, Ahmad — Broadcom

*Comment Type* **T** *Comment Status* **X** *TDD tests*

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* **W**

PROPOSED ACCEPT IN PRINCIPLE.

(Editor's note: Consider if the editor's note on the page before table 202-17 can be removed.)

TFTD

*Cl* **202** *SC* **202.5.3.2** *P* **225** *L* **46** # 409

Zerna, Conrad — NXP

*Comment Type* **TR** *Comment Status* **D** *TDD noise*

Missing limit / model

*SuggestedRemedy*

Alien noise model was presented in https://ieee802.org/3/dm/public/1124/Zerna_802.3dm_02_241110_TDD_proposal.pdf, page 4&5, will submit presentation with alien noise model proposal

*Proposed Response* *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

TFTD

*Cl* **202** *SC* **202.5.3.2** *P* **225** *L* **48** # 321

Gorshe, Steve — Microchip

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

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* **W**

PROPOSED ACCEPT.

*Cl* **202** *SC* **202.6** *P* **226** *L* **3** # 304

Gorshe, Steve — Microchip

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

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* **W**

PROPOSED ACCEPT IN PRINCIPLE.

(Editor's note: Move text that Auto-Negotiation is TBD/pending decision into the Editor's note. Use style for "see Clause xx" references.)

Insert the following content into clause 202.6,
"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 (see Clause 45), and the communication and self-configuration functions provided by the optional (TBD) Auto-Negotiation (see Clause 98)."

Replace the Editor's Note with,
"Need for Auto-Negotiation is TBD."

*Cl* **202** *SC* **202.7.1.1** *P* **226** *L* **21** # 410

Zerna, Conrad NXP

*Comment Type* **TR** *Comment Status* **D** *TDD T1 LS*

Missing IL limit

*SuggestedRemedy*

Take limit line from https://ieee802.org/3/dm/public/0125/Zerna_802.3dm_01_250122_IL_RL.pdf, page 5

*Proposed Response* *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Grant Editor license to insert limit line from https://ieee802.org/3/dm/public/0125/Zerna_802.3dm_01_250122_IL_RL.pdf, page 5 - making adjustments as necessary to align with style and add wording on the range of "f", Fmax, etc., as needed to bound limit line and plot.

Delete Editor's Note in the clause.

Grant Editor license to create and insert a plot of this limit line - making adjustments as necessary to align with style.

Grant Editor license to convert plots for existing Equations - making adjustments as necessary to align with style and add wording on the range of "f", Fmax, etc., as needed to bound limit lines and plots.

*Cl* **202** *SC* **202.7.1.3** *P* **226** *L* **31** # 411

Zerna, Conrad NXP

*Comment Type* **TR** *Comment Status* **D** *TDD T1 LS*

Missing RL limit

*SuggestedRemedy*

Take limit line from https://ieee802.org/3/dm/public/0125/Zerna_802.3dm_01_250122_IL_RL.pdf, page 8

*Proposed Response* *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Grant Editor license to insert limit line from https://ieee802.org/3/dm/public/0125/Zerna_802.3dm_01_250122_IL_RL.pdf, page 8 - making adjustments as necessary to align with style and add wording on the range of "f", Fmax, etc., as needed to bound limit line and plot.

Delete Editor's Note in the clause.

*Cl* **202** *SC* **202.7.2** *P* **227** *L* **11** # 412

Zerna, Conrad NXP

*Comment Type* **TR** *Comment Status* **D** *TDD T1 LS*

Missing limit

*SuggestedRemedy*

Take limit line from https://ieee802.org/3/dm/public/0524/Coax_Cables_Silvano_de_Sousa_ISAAC_Interim_may_2024(002).pdf, page 6

*Proposed Response* *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Grant Editor license to insert limit line from https://ieee802.org/3/dm/public/0524/Coax_Cables_Silvano_de_Sousa_ISAAC_Interim_may_2024(002).pdf, page 6 - making adjustments as necessary to align with style and add wording on the range of "f", Fmax, etc., as needed to bound limit line and plot.

Delete Editor's Note in the clause.

*Cl* **202** *SC* **202.8.1.4** *P* **230** *L* **1** # 312

Gorshe, Steve Microchip

*Comment Type* **T** *Comment Status* **D** *TDD V1 LS*

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* **W**

PROPOSED ACCEPT IN PRINCIPLE.

(Editor's note: "not" appears twice in proposed remedy. The proposed language is not aligned with other transmission clauses that reference link segment/cabling.)

Replace the Editor's Note with "Coupling attenuation is not defined for -V1 link segments."

Grant Editors license to search for "100M+MultiGBASE-V1 and MultiG+100MBASE-V1" and "MultiG+100M/100M+MultiGBASE-V1" and replace with -V1 as appropriate.

Grant Editors license to search for "100M+MultiGBASE-T1 and MultiG+100MBASE-T1" and "MultiG+100M/100M+MultiGBASE-T1" and replace with -T1 as appropriate.

*Cl* **202** *SC* **202.8.1.5** *P* **230** *L* **9** # 322

Gorshe, Steve Microchip

*Comment Type* **T** *Comment Status* **D** *TDD V1 LS*

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* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Remove the Editor's note and insert,
"The screening attenuation for MultiG+100M/100M+MultiGBASE-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;"

Grant Editor license to apply to equation, numbering, and other style conformance. Grant Editors license to add ISO 19642-11 details to subclause 1.3 Normative references, if needed.

*Cl* **202** *SC* **202.8.2** *P* **230** *L* **19** # 323

Gorshe, Steve Microchip

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

Since this is a heading for the subsequent subclauses, no text is needed.

*SuggestedRemedy*

Remove the Editor's Note.

*Proposed Response* *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Delete Editor's Note and insert this text (copied from 149.7.2),
"Noise coupled between the disturbed link segment and the disturbing link segment is referred to as alien crosstalk noise. Power sum alien near-end crosstalk (PSANEXT) loss and power sum alien attenuation to crosstalk ratio far-end (PSAACRF) are specified to limit the total alien NEXT and alien FEXT coupled between link segments. The test methodologies are specified in Annex 97B."

with "alien crosstalk noise" in italics to align with 149.7.2.

*Cl* **202** *SC* **202.8.2.1** *P* **230** *L* **24** # 413

Zerna, Conrad NXP

*Comment Type* **TR** *Comment Status* **D** *TDD V1 LS*

Missing limit

*SuggestedRemedy*

Measurment data has been presented
https://ieee802.org/3/dm/public/0524/felso_3dm_01_2405.pdf, will submit a presentation with limit line formula

*Proposed Response* *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Consider with comment #326.

TFTD

*Cl* **202** *SC* **202.8.2.1** *P* **230** *L* **24** # 326

Gorshe, Steve
Microchip

*Comment Type* **T** *Comment Status* **D** *TDD V1 LS*

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* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Consider with comment #413.

*Cl* **202** *SC* **202.8.2.2** *P* **230** *L* **30** # 414

Zerna, Conrad
NXP

*Comment Type* **TR** *Comment Status* **D** *TDD V1 LS*

Missing limit

*SuggestedRemedy*

Measurment data has been presented https://ieee802.org/3/dm/public/0524/felso_3dm_01_2405.pdf, will submit a presentation with limit line formula

*Proposed Response* *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Consider with comment #327.

TFTD

*Cl* **202** *SC* **202.8.2.2** *P* **230** *L* **30** # 327

Gorshe, Steve
Microchip

*Comment Type* **T** *Comment Status* **X** *TDD V1 LS*

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* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Consider with comment #414.

*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* **D** *TDD MDI*

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* **W**

PROPOSED ACCEPT IN PRINCIPLE.

(Editor's note: A single MDI return specification is sufficient for -T1.)

Replace "Fmax" in the equation with "4000"

Delete the sentence on P231, L14-15 and delete the Editor's Note on P231, L17-20

*Cl* **202** *SC* **202.9.3** *P* **232** *L* **29** # 315

Gorshe, Steve Microchip

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

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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* **W**

PROPOSED ACCEPT IN PRINCIPLE.

(Editor's note: Add "The" to align with 201.13.3.)

Remove the Editor's Note and insert the sentence "The MDI fault tolerance shall comply with 96.8.3."

*Cl* **202** *SC* **202.10.1** *P* **232** *L* **11** # 313

Gorshe, Steve Microchip

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

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* **W**

PROPOSED ACCEPT IN PRINCIPLE.

(Editor's note: Added instruction to delete Editor's Note. This section is for V1 media, coaxial cabling is always used.)

Delete Editor's Note and insert the following text into 202.10.1,

"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."

*Cl* **202** *SC* **202.10.2.1** *P* **232** *L* **23** # 314

Gorshe, Steve Microchip

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

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* **W**

PROPOSED ACCEPT.

*Cl* **202** *SC* **202.10.3** *P* **232** *L* **29** # 325

Gorshe, Steve Microchip

*Comment Type* **T** *Comment Status* **D** *TDD MDI*

Replace the Editor's Note box and TBD with the proposed text and table.

*SuggestedRemedy*

See attached file.

*Proposed Response* *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

(Editor's note: Consider aligning over clauses 200, 201, and 202.)

TFTD