The coupling attenuation equation (149-24) references \( F_{\text{max}} \) (line 36 & 41) as its maximum frequency. \( F_{\text{max}} \) is defined as \( 4000 \times S \), where \( S \) equals 1/4, 1/2, or 1 corresponding to 2.5Gbps, 5.0Gbps, or 10Gbps, respectively. However, Figure 149-45 on page 173 plots the coupling attenuation showing a maximum frequency of 5500MHz.

**Suggested Remedy**

Similar to the crosstalk limits in 149.7.2.1 & 149.7.2.2, I recommend replacing the 2 instances of \( F_{\text{max}} \) with 4000MHz in the coupling attenuation equation.

Frequency limits of equation (149-24) would then be:

\[
30 \leq f \leq 750 \text{ MHz} \\
750 \leq f \leq 4000 \text{ MHz} \\
where \ f \ is \ the \ frequency \ in \ MHz; \ 30 \leq f \leq 4000
\]

Figure 149-45 should also be modified to show a max Frequency of 4000MHz instead of 5500MHz.

**Proposed Response**

This comment does not apply to the substantive changes between IEEE P802.3ch D2.1 and D2.2 or the unsatisfied negative comments from earlier ballots. Hence it is not within the scope of the recirculation ballot.

However, the change suggested has identified an error in the draft, and the proposed response is a substantive change which fixes the cross reference to point to the correct subclause.

**Proposed ACCEPT IN PRINCIPLE.**

P172 L37 & P172 L41, Change "Fmax" to "4000"  

P173 L3, Change Figure 149-45 to have a max frequency of 4000 MHz instead of 5500 MHz.

---

Register bit 1.2309.15 is PMA/PMD reset. But this statement refers to 149.3.2.1, which is PCS reset.

**Suggested Remedy**

On page 35, line 44, change the reference from 149.3.2.1 to 149.4.2.1.

**Proposed Response**

This comment does not apply to the substantive changes between IEEE P802.3ch D2.1 and D2.2 or the unsatisfied negative comments from earlier ballots. Hence it is not within the scope of the recirculation ballot.

However, the change suggested has identified an error in the draft, and the proposed response is a substantive change which fixes the cross reference to point to the correct subclause.

**Proposed ACCEPT.**

Control register bits 1.2309.10:9 do not exist.

**Suggested Remedy**

Delete the last sentence of this paragraph.

**Proposed Response**

**Proposed ACCEPT.**
The transmit jitter tests are specified in both 149.5.2.3.1 and 149.5.2.3.2. Recommend to refer to both, or simply refer to 149.5.2.3.

**Suggested Remedy**

Option 1. Change "149.5.2.3.1" to "149.5.2.3".
Option 2. Change "See 149.5.2.3.1 for more information." to "See 149.5.2.3.1 and 149.5.2.3.2 for more information."

**Proposed Response**

PROPOSED ACCEPT IN PRINCIPLE.

- Change "149.5.2.3.1" to "149.5.2.3".

---

Typos in Table 45-155g. 1.2314 should be 1.2315 on the first column.

**Suggested Remedy**

Change the first column of Table 45-155g from "1.2314.xx:yy" to "1.2315.xx:yy".

**Proposed Response**

PROPOSED ACCEPT.

---

Title of the subclause should match with the name of register bits.

**Suggested Remedy**

Change line 49 to: "45.2.1.199.1 MultiGBASE-T1 user defined data (1.2316.15:0)".

**Proposed Response**

PROPOSED ACCEPT.

---

Title of the subclause should match with the name of register bits.

**Suggested Remedy**

Change line 49 to: "45.2.1.199.1 MultiGBASE-T1 user defined data (1.2316.15:0)".

**Proposed Response**

PROPOSED ACCEPT.

---

The EEE capability advertisement is described in 149.4.2.4.5.

**Suggested Remedy**

Change the reference from 149.3.2.2.22 to 149.4.2.4.5.

**Proposed Response**

PROPOSED ACCEPT.

This comment does not apply to the substantive changes between IEEE P802.3ch D2.1 and D2.2 or the unsatisfied negative comments from earlier ballots. Hence it is not within the scope of the recirculation ballot.

However, the change suggested has identified an error in the draft, and the proposed response is a substantive change which fixes the cross reference to point to the correct subclause.
P202.3ch D2.2 Physical Layer Specifications and Management Parameters for 2.5 Gb/s, 5 Gb/s, and 10 Gb/s Autor

Tu, Mike Broadcom
Comment Type T Comment Status D EZ

PMA functionality is described in 149.4, not 149.2.

SuggestedRemedy
Change the reference from 149.2 to 149.4.

Proposed Response Response Status W
PROPOSED ACCEPT.

This comment does not apply to the substantive changes between IEEE P802.3ch D2.1 and D2.2 or the unsatisfied negative comments from earlier ballots. Hence it is not within the scope of the recirculation ballot.

However, the change suggested has identified an error in the draft, and the proposed response is a substantive change which fixes the cross reference to point to the correct subclause.

Tu, Mike Broadcom
Comment Type T Comment Status D EZ
EEE capability is embedded in Infofield octet 10 bit 6.

SuggestedRemedy
Change "(Octet 9 bit 7)" to "(Octet 10 bit 6)"

Proposed Response Response Status W
PROPOSED ACCEPT.

This comment does not apply to the substantive changes between IEEE P802.3ch D2.1 and D2.2 or the unsatisfied negative comments from earlier ballots. Hence it is not within the scope of the recirculation ballot.

However, the change suggested has identified an error in the draft, and the proposed response is a substantive change which fixes the reference to the EEE capability bit which was changed in D2.1.

McClellan, Brett Marvell Semiconductor
Comment Type E Comment Status D EZ
grammar

SuggestedRemedy
change 'encoder' to 'encoders'

Proposed Response Response Status W
PROPOSED ACCEPT.

This comment does not apply to the substantive changes between IEEE P802.3ch D2.1 and D2.2 or the unsatisfied negative comments from earlier ballots. Hence it is not within the scope of the recirculation ballot.

However, the change suggested has identified an error in the draft, and the proposed response is a non-substantive editorial change which improves clarity.
D2.2 Physical Layer Specifications and Management Parameters for 2.5 Gb/s, 5 Gb/s, and 10 Gb/s Autor

Cl 149 SC 149.3.2.2 P94 L48 # 23
McClellan, Brett Marvell Semiconductor

Comment Type E Comment Status D EZ

Suggested Remedy
change "RS-FE" to "RS-FEC"

Proposed Response Response Status W
PROPOSED ACCEPT.

This comment does not apply to the substantive changes between IEEE P802.3ch D2.1 and D2.2 or the unsatisfied negative comments from earlier ballots. Hence it is not within the scope of the recirculation ballot.

However, the change suggested has identified an error in the draft, and the proposed response is a non-substantive editorial change which improves clarity.

Cl 149 SC 149.3.2.2.3 P96 L17 # 19
McClellan, Brett Marvell Semiconductor

Comment Type E Comment Status D EZ

Suggested Remedy
Tx_coded should be tx_coded Rx_coded should be rx_coded

Proposed Response Response Status W
PROPOSED ACCEPT.

Cl 149 SC 149.3.2.2.18 P104 L45 # 20
McClellan, Brett Marvell Semiconductor

Comment Type E Comment Status D EZ

Suggested Remedy
change "A" to "A_n" change "B" to "B_n" with _n indicating a subscript

Proposed Response Response Status W
PROPOSED ACCEPT.

Cl 149 SC 149.5.1 P161 L46 # 5
Tu, Mike Broadcom

Comment Type T Comment Status D EZ

Register bits 1.2309:10:9 do not exist. It should be 1.2313:10:9.

Suggested Remedy
Change from: "... by the value set in register 1.2309:10:9, ...
To: "... by the value set in register 1.2313:10:9, ..."

Proposed Response Response Status W
PROPOSED ACCEPT.

This comment does not apply to the substantive changes between IEEE P802.3ch D2.1 and D2.2 or the unsatisfied negative comments from earlier ballots. Hence it is not within the scope of the recirculation ballot.

However, the change suggested has identified an error in the draft, and the proposed response is a non-substantive editorial change which improves clarity.

Cl 149 SC 149.5.2.4 P165 L21 # 18
den Besten, Gerrit NXP Semiconductors

Comment Type E Comment Status D EZ
LPDS: The L seems smaller than the other characters

Suggested Remedy
Fix the size of the L

Proposed Response Response Status W
PROPOSED ACCEPT.

This comment does not apply to the substantive changes between IEEE P802.3ch D2.1 and D2.2 or the unsatisfied negative comments from earlier ballots. Hence it is not within the scope of the recirculation ballot.

However, the change suggested has identified an error in the draft, and the proposed response is a non-substantive editorial change which improves clarity.

Cl 149 SC 149.7.1.3.2 P171 L8 # 21
McClellan, Brett Marvell Semiconductor

Comment Type E Comment Status D EZ

Suggested Remedy
In Figure 149–54 N=1 and N=0 are not aligned to the associated RL curves.

Proposed Response Response Status W
PROPOSED ACCEPT.
Use "MultiGBASE-T1", instead of "MultiGBASE-T1 set". According to 149.1.1, "the nomenclature MultiGBASE-T1 is used to describe specifications that apply to the 2.5GBASE-T1, 5GBASE-T1, and 10GBASE-T1 PHYs."

Suggested Remedy
1. Page 42, line 3: Change from: "... at the slicer input for the PMAs in the MultiGBASE-T1 set." To: "... at the slicer input for the MultiGBASE-T1 PMAs."
2. Page 62, Clause 78.5, line 18 to 25: Change all occurrences of "... the PHY in the MultiGBASE-T1 set ..." to "... the MultiGBASE-T1 PHY ...".

Proposed Response PROPOSED REJECT.

This comment does not apply to the substantive changes between IEEE P802.3ch D2.1 and D2.2 or the unsatisfied negative comments from D2.0. Hence it is not within the scope of the recirculation ballot. In addition, this proposal does not fix an error in the draft.

In addition, the nomenclature defined locally in clause 149 doesn't apply to clause 45, while that shorthand is convenient for clause 149 specifications which apply to all three PHYs in that clause, the global definition in clause 1.4 applies generally, and the existing text is consistent with that usage.

The PoDL ripple is somewhat ambiguously defined as the text descriptions only talks about measuring ripple with certain high-pass filters. The table mentions 1kHz-10MHz. If this is the measurement bandwidth, the measurement with 10MHz high-pass becomes actually a fairly narrow bandpass measurement around 10MHz. This also implies there is no constraint on the PoDL ripple beyond 10MHz. I've understood that the assumption is that there will no be significant ripple beyond 10MHz, but unfortunately the specification does not constrain that. A ripple at higher frequencies is very undesirable, so a note that PoDL circuitry shall not produce any significant ripple beyond 10MHz seems useful.

Suggested Remedy
Add a note to this paragraph of the PoDL clause: The induced voltage ripple at the MDI of PoDL circuits beyond 10MHz shall be negligible to avoid degradation of signal reception.

Proposed Response PROPOSED REJECT.

This comment does not apply to the substantive changes between IEEE P802.3ch D2.1 and D2.2 or the unsatisfied negative comments from D2.0. Hence it is not within the scope of the recirculation ballot. In addition, this proposal does not fix an error in the draft.

The Suggested Remedy does not provide a technically complete solution. Notes are informative only and cannot state normative requirements. Additionally "negligible voltage ripple" cannot be a normative requirement as it provides no testable metric for voltage ripple.

Commenter may wish to resubmit this comment at Standards Association ballot.

The commenter may also wish to submit a Maintenance request for Clause 104 to add similar requirements for ripple voltage at other communication rates.
The linearity test of BASE-T1 PHYs have previously been based on transmission of a sequence in combination with a sinewave signal that is injected from the outside to account for the full-duplex communication on the link. In March it was argued that this method was not useful and there are better and simpler methods for specifying linearity that could be borrowed from other specs. This resulted into a method borrowed from a unidirectional SERDES spec, which happens to refer to multiple other clauses too. This method is arguably not simpler than the previously used method. But even more importantly this new method does not account for the full-duplex behavior. The received signal significantly extends the signal range on the MDI. When linearity is only measured when the TX is transmitting, but there is no signal received at the same time, such a test is not adequate IMO to address the problem.

Suggested Remedy
Suggest to use a similar linearity test method as used for 100BASE-T1 and 1000BASE-T1, that is, with an external sinewave superpositioned on top of the transmitted signal. This method ensures that linearity is tested over the appropriate output signal range that can occur for full duplex communication. Alternatively it can be considered if this test can be skipped, because the imposed linearity requirements of the transceiver to ensure reliable data transfer might be tighter than the currently included 'unidirectional SERDES-borrowed' test.

Proposed Response
PROPOSED REJECT.

This comment does not apply to the substantive changes between IEEE P802.3ch D2.1 and D2.2 or the unsatisfied negative comments from D2.0. Hence it is not within the scope of the recirculation ballot. In addition, this proposal does not fix an error in the draft.

The Suggested Remedy does not include a specific change the commenter would like to see made to the draft.

Commenter may wish to resubmit this comment at Standards Association ballot.