

IEEE P802.3da D1.3 10 Mbps Multidrop Enhancements

Cl 30 SC 30.16.1.1.8 P25 L1 # 1 [REDACTED]  
 Maguire, Valerie Copperopolis; aff'l w/ CME Consulting  
 Comment Type E Comment Status D EZ  
 Tidy Editing Instruction text so that insertion instructions are consistent throughout the document.  
*SuggestedRemedy*  
 P25 L1: Replace "Insert new subclauses (30.16.1.1.8 through 30.16.1.1.14)" with "Insert new subclauses 30.16.1.1.8 through 30.16.1.1.14..."; P26 L50: Replace "Insert 30.17..." with "Insert new subclause 30.17..."; P37 L19: "Insert 79.3.9..." with "Insert new subclause 79.3.9..."; P48 L1: "Insert 148.4.7 ..." with "Insert new subclause 148.4.7..."; P54 L3: Replace "Insert new section 148.5.3.a..." with "Insert new subclause 148.5.3.a..."; P54 L13: Replace "Insert new section 148.5.3.7..." with "Insert new subclause 148.5.3.7..."  
*Proposed Response* Response Status W  
 PROPOSED ACCEPT.

Cl 168 SC 168.9.1.1 P86 L3 # 2 [REDACTED]  
 Maguire, Valerie Copperopolis; aff'l w/ CME Consulting  
 Comment Type T Comment Status D TCI  
 Remove TC3 terminology and align text with 168.9.2.  
*SuggestedRemedy*  
 Replace, "With the PMA (or simulated DTE load specified for the TCI) present at TC3," with "With a PMA or simulated DTE load present at the TCI attachment,"  
*Proposed Response* Response Status W  
 PROPOSED ACCEPT IN PRINCIPLE.

Replace, "With the PMA (or simulated DTE load specified for the TCI) present at TC3," with "With a PMA or simulated DTE load present at the TCI,"

Cl 148 SC 148.4.4.6 P43 L4 # 3 [REDACTED]  
 Baggett, Tim Microchip  
 Comment Type E Comment Status D Editorial  
 Cl 1.2: Qualifiers described by short phrases are enclosed in parentheses. The Term "ldpica\_en" should be enclosed in parenthesis. More examples are identified in the PDF related to this comment. Changes are proposed to improve readability and to maintain consistency with the style used when originally creating the Clause 147 and 148 state diagrams.  
*SuggestedRemedy*  
 See Baggett\_3da\_D1p3\_CL148\_StateDiagrams.pdf and enclose highlighted terms with parenthesis.  
 This change applies to:  
 Fig 148-3 P43  
 Fig 148-4 P44  
 Fig 148-8 P51

Proposed changes highlighted in orange. In general, if the transition contained only a single boolean term such as "lvariable" or "variable = CONST" I then left it alone or highlighted in yellow as this seemed to be consistent and more readable. Liberal editorial license granted to maintain readability and consistency.

*Proposed Response* Response Status W  
 PROPOSED ACCEPT IN PRINCIPLE.  
 Add parentheses to Figures 148-3, P148-4, and 148-8 to conditions shown in yellow highlight in Baggett\_3da\_D1p3\_CL148\_StateDiagrams-b.pdf

Cl 169 SC 169.2 P98 L22 # 4 [REDACTED]  
 Baggett, Tim Microchip  
 Comment Type E Comment Status D Mixing Segment  
 The sentence refers to a dc loop resistance measured from edge termination to edge termination.  
 Is this really a \*loop\* resistance? The word "loop" would indicate to me the resistance from one edge terminator down one segment conductor through the opposite edge terminator, back up the opposite segment conductor. Clearly this isn't what is intended.  
*SuggestedRemedy*  
 Please consider if "loop resistance" is the correct term here.  
*Proposed Response* Response Status W  
 PROPOSED ACCEPT IN PRINCIPLE.  
 Delete "loop" at P98 L 22  
 TFTD whether 12 ohms is the right number or it should be 1/2 that...

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Cl 148 SC 148.4.5.7 P46 L14 # 5

Baggett, Tim Microchip

Comment Type T Comment Status D PLCA

Condition for transition from WAIT\_IDLE to IDLE does not match fix #2 proposed on Page 11 of [https://www.ieee802.org/3/da/public/032322/beruto\\_3da\\_01\\_230222\\_plca\\_fixes.pdf](https://www.ieee802.org/3/da/public/032322/beruto_3da_01_230222_plca_fixes.pdf)

SuggestedRemedy

Change the condition for transition from WAIT\_IDLE to IDLE from:  
MCD \* (!CRS) \* (!committed)  
To:  
(!CRS) \* (!committed)

Proposed Response Response Status W

PROPOSED ACCEPT.

Cl 168 SC 168.4.2.7 P66 L11 # 6

Law, David HPE

Comment Type T Comment Status D PCS

The TXCMD\_ENCODE function definition says that '... this function takes as its arguments the values of tx\_cmd and hb\_cmd variables ...' and the TXCMD\_ENCODE function call in the SILENT state of Figure 168-4 'PCS Transmit state diagram, part a' reads TXCMD\_ENCODE(tx\_cmd, hb\_cmd). The hb\_cmd variable, however, is not defined anywhere, and the output of the function is not dependent on the variable.

I believe that the hb\_cmd variable was used in Clause 147 10BASE-T1S PHY to control sending the heartbeat signal across and suspect that this has been copied across. Since, however, it was only used for the 10BASE-T1S PHY in full-duplex mode, and since the 10BASE-T1M only supports half-duplex mode, it should be deleted from the function definition and call.

SuggestedRemedy

[1] Change the text '... takes as its arguments the values of tx\_cmd and hb\_cmd variables and returns ...' in the definition of the TXCMD\_ENCODE function in subclause 168.4.2.4 to read '... takes as its arguments the value of the tx\_cmd variable and returns ..'.  
[2] Change the third action in the SILENT state of Figure 168-4 'PCS Transmit state diagram, part a' to read 'tx\_sym <= TXCMD\_ENCODE(tx\_cmd)'.

Proposed Response Response Status W

PROPOSED ACCEPT.

Cl 148 SC 148.4.4.6 P43 L26 # 7

Law, David HPE

Comment Type T Comment Status D PLCA

The transition from the RECOVER state to the WAIT\_TO state in Figure 148-3 'PLCA Control state diagram, part a' is missing a transition qualifier. Assuming this is an unconditional transition, the transition qualifier should be UCT (see IEEE Std 802.3-2022 subclause 21.5.3, item d).

SuggestedRemedy

Add the transition qualifier 'UCT' to the transition from the RECOVER state to the WAIT\_TO state in Figure 148-3.

Proposed Response Response Status W

PROPOSED ACCEPT.

Cl 148 SC 148.4.4.6 P44 L21 # 8

Law, David HPE

Comment Type T Comment Status D PLCA

I don't believe that the COL variable has been used in the Clause 148 PLCA Control state diagram before. As a result, it needs to be added to the additions to subclause 148.4.4.2 'PLCA Control variables' in the IEEE P802.3da draft.

SuggestedRemedy

[1] Change the text 'Insert new variables dplca\_en, dplca\_txop\_end, ...' in subclause 148.4.4.2 to read 'Insert new variables COL, dplca\_en, dplca\_txop\_end, ...'

[2] Add the following definition to subclause 148.4.4.2:

COL  
The MII signal COL.  
Values: TRUE or FALSE

Proposed Response Response Status W

PROPOSED ACCEPT.

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Cl 148 SC 148.4.4.6 P43 L15 # 9

Law, David HPE  
 Comment Type T Comment Status D PLCA

The new variable dplca\_txop\_node\_count is used in Figure 148–3 'PLCA Control state diagram' but it is not defined.

*SuggestedRemedy*

Add a definition of the dplca\_txop\_node\_count variable to subclause 148.4.4.2 'PLCA Control variables'.

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.  
 Add "dplca\_txop\_node\_count  
 Copy of PLCA node count synchronized with PLCA SYNCING cycle.  
 Values: integer from 0 to 255

Cl 148 SC 148.4.4.6 P44 L37 # 10

Law, David HPE  
 Comment Type E Comment Status D EZ

The action 'start\_append\_commit timer' in the BURST state of Figure 148–4 'PLCA Control state diagram' should read 'start\_append\_commit\_timer' (remove the '\_' after 'start' and add an '\_' between 'commit' and 'timer').

*SuggestedRemedy*

See comment.

Proposed Response Response Status W

PROPOSED ACCEPT.

Cl 148 SC 148.4.4.6 P43 L44 # 11

Law, David HPE  
 Comment Type T Comment Status D PLCA

The new variable dplca\_txop\_node\_id is used in the SYNCING state of figure 148–3 'PLCA Control state diagram', but it is not defined.

*SuggestedRemedy*

Add a definition of the dplca\_txop\_node\_id variable to subclause 148.4.4.2 'PLCA Control variables'.

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.  
 Variable name in state diagram was incorrectly edited.  
 Change "dplca\_txop\_node\_id" in SYNCING state at P43 L45 to "dplca\_txop\_id"

Cl 148 SC 148.4.7.2 P49 L6 # 12

Law, David HPE  
 Comment Type E Comment Status D EZ

The definition of the txop\_claim\_table variable (that's actually an array) says:

This variable contains the claim state of the 256 transmit opportunities IDs. The claim state of each ID can be:

- a. NONE, meaning ...
- b. SOFT, meaning ...
- c. HARD, meaning ...

We don't normally use a letter list to define the variable values, see the dplca\_txop\_claim variable defined in subclause 148.4.4.2 'PLCA Control variables' for an example.

*SuggestedRemedy*

Suggest that the text:

This variable contains the claim state of the 256 transmit opportunities IDs. The claim state of each ID can be:

- a. NONE, meaning ...
- b. SOFT, meaning ...
- c. HARD, meaning ...

is changed to read:

This variable contains the claim state of the 256 transmit opportunities IDs. The claim state of each ID can be:

- NONE, meaning ...
- SOFT, meaning ...
- HARD, meaning ...

Proposed Response Response Status W

PROPOSED ACCEPT.

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Cl 148 SC 148.4.7.3 P50 L9 # 13

Law, David

HPE

Comment Type E Comment Status D EZ

Although there is no rule, function names are generally all upper case, and that is the case for the existing functions in Clause 148 'PLCA Reconciliation Sublayer (RS)', see 148.4.5.3 'Functions'.

SuggestedRemedy

Suggest that the following changes be made to the function names.

max\_hard\_claim -> MAX\_HARD\_CLAIM  
 pick\_free\_txop -> PICK\_FREE\_TXOP  
 hard\_claiming -> HARD\_CLAIMING  
 soft\_claiming -> SOFT\_CLAIMING  
 clear\_txop\_table -> CLEAR\_TXOP\_TABLE  
 clear\_soft\_claims -> CLEAR\_SOFT\_CLAIMS

Proposed Response Response Status W

PROPOSED ACCEPT.

Cl 148 SC 148.4.7.5 P51 L10 # 14

Law, David

HPE

Comment Type T Comment Status D EZ

The transition from the DISABLED state to the WAIT\_BEACON state in Figure 148-8 'D-PLCA Control State Diagram' is missing a transition qualifier. Assuming this is an unconditional transition, the transition qualifier should be UCT (see IEEE Std 802.3-2022 subclause 21.5.3, item d).

SuggestedRemedy

Add the transition qualifier 'UCT' to the transition from the DISABLED state to the WAIT\_BEACON state in Figure 148-8.

Proposed Response Response Status W

PROPOSED ACCEPT.

Cl 148 SC 148.4.7.5 P51 L49 # 15

Law, David

HPE

Comment Type T Comment Status D PLCA

The variable dplca\_txop\_node\_count is used in Figure 148-8 'D-PLCA Control State Diagram' but is not defined in subclause 148.4.7.2 'Variables'.

SuggestedRemedy

As noted in another comment, the variable dplca\_txop\_node\_count is also used in Figure 148-3 'PLCA Control state diagram' but is not defined. Assuming that comment is accepted, and a definition of dplca\_txop\_node\_count is added to subclause 148.4.4.2, suggest that the following definition is added to subclause 148.4.7.2 'Variables':

dplca\_txop\_node\_count  
 See 148.4.4.2.

Proposed Response Response Status W

PROPOSED ACCEPT.

Cl 148 SC 148.4.7.6 P52 L41 # 16

Law, David

HPE

Comment Type T Comment Status D EZ

The transitions from the UPDATE\_SOFT and the UPDATE\_HARD states to the NOTIFY state and from the DISABLED state to the WAIT\_TXOP\_END state in Figure 148-9 'D-PLCA Aging State Diagram' are missing transition qualifiers. Assuming that these are unconditional transitions, the transition qualifier should be UCT (see IEEE Std 802.3-2022 subclause 21.5.3, item d).

SuggestedRemedy

Add the transition qualifier 'UCT' to the transitions from the UPDATE\_SOFT and the UPDATE\_HARD states to the NOTIFY and from the DISABLED state to the WAIT\_TXOP\_END state in Figure 148-9.

Proposed Response Response Status W

PROPOSED ACCEPT.

Cl 148 SC 148.4.4.2 P41 L42 # 17

Law, David

HPE

Comment Type E Comment Status D EZ

Typo.

SuggestedRemedy

... type of claim. See 148.4.7.2 '..' should read '!... type of claim. See 148.4.7.2 ...' (mising space).

Proposed Response Response Status W

PROPOSED ACCEPT.

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Cl 148 SC 148.4.7.2 P48 L31 # 18  
 Law, David HPE  
 Comment Type T Comment Status D PLCA  
 The variable curlID is defined in subclause 148.4.7.2 'Variables', however, it doesn't seem to be used in the D-PLCA state diagrams in Figures 148-8 and 148-9.  
 SuggestedRemedy  
 Remove the variable curlID if it isn't used.  
 Proposed Response Response Status W  
 PROPOSED ACCEPT IN PRINCIPLE.  
 curlID is no longer used for D-PLCA. Remove it from 148.4.7.2.

Cl 168 SC 168.8.2 P83 L52 # 19  
 DiMinico, Christopher PHY-SI/SenTekse/MC Communications  
 Comment Type TR Comment Status D Mixing Segment  
 168.8.2 Return loss TBD  
 SuggestedRemedy  
 See diminico\_SPMD\_01\_0724.pdf for TBD  
 Proposed Response Response Status W  
 PROPOSED ACCEPT IN PRINCIPLE.  
 TFTD, Awaiting presentation.

Cl 00 SC 0 P8 L14 # 20  
 Jones, Chad Cisco Systems, Inc.  
 Comment Type E Comment Status D EZ  
 George is the Technical Editor and Val is the Managing Editor.  
 SuggestedRemedy  
 Change George's title to Technical Editor  
 Proposed Response Response Status W  
 PROPOSED ACCEPT IN PRINCIPLE.  
 Accomodated by 56 which also flips the order.  
 Proposed response to comment 56 is:  
 Change "Editor-in-Chief" on line 14 to "Technical Editor"  
 Move "Valerie Maguire, ... Managing Editor" before "George Zimmerman,... Technical Editor"

Cl 148 SC 148.4.5.7 P45 L2 # 21  
 Jones, Chad Cisco Systems, Inc.  
 Comment Type E Comment Status D EZ  
 empty page. Is that because of the "change figure" note and the space will go away once integrated in 802.3? Or is there a hidden page break?  
 SuggestedRemedy  
 fix blank page.  
 Proposed Response Response Status W  
 PROPOSED ACCEPT IN PRINCIPLE.  
 No hidden page break. This is because of the structure of the amendment, which puts a full-page figure prior to a header & another full page figure.  
 Move editing instruction ("Change Figure 148-5 and Figure 148-6 as shown:") at top of page 46 to page 45.

Cl 148 SC 148.4.7.1 P48 L18 # 22  
 Jones, Chad Cisco Systems, Inc.  
 Comment Type E Comment Status D EZ  
 unneeded comma  
 "HARD claims (with COMMIT requests), "  
 SuggestedRemedy  
 delete the comma after "requests)"  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.

Cl 148 SC 148.4.7.1 P48 L23 # 23  
 Jones, Chad Cisco Systems, Inc.  
 Comment Type E Comment Status D EZ  
 "DPLCA" versus "D-PLCA". Every instance on this page includes the hyphen.  
 SuggestedRemedy  
 Change DPLCA to D-PLCA. Editors given license to search and replace through the document.  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.

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Cl 168 SC 168.1 P55 L13 # 24  
 Jones, Chad Cisco Systems, Inc.  
 Comment Type E Comment Status D TCI  
 misplaced comma, needs to be after the parenthesis in this sentence.  
 "...Trunk Connection Interface, or TCI (see 168.9) are..."  
 SuggestedRemedy  
 change to: "...Trunk Connection Interface or TCI (see 168.9), are..."  
 Proposed Response Response Status W  
 PROPOSED ACCEPT IN PRINCIPLE.  
 TCI isn't an alternative name as the text would suggest, but rather an abbreviation. (the  
 cross reference to 168.9 is not really needed and interferes with readability as well).  
 Change "Trunk Connection Interface, or TCI (see 168.9) are" to  
 "Trunk Connection Interface (TCI) are".

Cl 168 SC 168.1.2.1 P56 L43 # 25  
 Jones, Chad Cisco Systems, Inc.  
 Comment Type E Comment Status D EZ  
 missing comma after "...between THEN and END..."  
 SuggestedRemedy  
 change to "...between THEN and END, ..."  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.

Cl 168 SC 168.8 P82 L32 # 26  
 Jones, Chad Cisco Systems, Inc.  
 Comment Type E Comment Status D Editorial  
 we spell out trunk connection interface after using it at least 6 times in this section. Move  
 the text to the first instance on line 18.  
 SuggestedRemedy  
 page 82, line 18, change TCI to trunk connection interface (TCI)  
 line 32, change trunk connection interface (TCI) to TCI  
 Proposed Response Response Status W  
 PROPOSED ACCEPT IN PRINCIPLE.  
 First reference in the section is on line 15, and ref to definition is incorrectly marked  
 external... it's in the draft...  
 P82 L15 change "The TCI (1.4.558a) is an MDI"  
 to "The trunk connection interface (TCI) (1.4.558a) is an MDI" (and make 1.4.558a a real x-  
 ref, not external)  
 P82 L32, change "any trunk connection interface (TCI)" to "TCI"

Cl 168 SC 168.9.1.1 P86 L3 # 27  
 Jones, Chad Cisco Systems, Inc.  
 Comment Type T Comment Status D TCI  
 TC3 still in the text, was removed last cycle.  
 SuggestedRemedy  
 replace TC3 with TCI attachment  
 Proposed Response Response Status W  
 PROPOSED ACCEPT IN PRINCIPLE.  
 Accomodated by comment 2:  
 PROPOSED ACCEPT IN PRINCIPLE.  
 Replace, "With the PMA (or simulated DTE load specified for the TCI) present at TC3," with  
 "With a PMA or simulated DTE load present at the TCI,"

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Cl 169 SC 169.3 P99 L23 # 28  
 Jones, Chad Cisco Systems, Inc.  
 Comment Type E Comment Status D MPSE  
 inconsistent variable names. This comment needs processed with one against page 108, item 1 in table 169-5 to simplify the variable name to delete "(PON)". on this page, the (min) and (max) need promoted back to normal text from subscript and remove the parenthesis.  
 SuggestedRemedy  
 remove parenthesis around min and max and promote this text from subscript to normal text.  
 Proposed Response Response Status W  
 PROPOSED ACCEPT IN PRINCIPLE  
 Process with (after) comment 36

Cl 169 SC 169.4.3 P100 L18 # 29  
 Jones, Chad Cisco Systems, Inc.  
 Comment Type E Comment Status D MPSE  
 We never mention more than one MPSE on a mixing segment. While the TF has agreed that they do not want to go to the effort of defining how two MPSEs behave on a mixing segment, they also agreed that they didn't want to prohibit one from devising a proprietary scheme. We should make this statement.  
 SuggestedRemedy  
 add this text at the end of line 18: "This standard assumes one MPSE per mixing segment. More than one MPSE per mixing segment is beyond the scope of this standard."  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.

Cl 169 SC 169.4.3 P100 L32 # 30  
 Jones, Chad Cisco Systems, Inc.  
 Comment Type E Comment Status D Editorial  
 missing a word?  
 "depending on whether the specification in question is for exceeding dropping below a threshold"  
 SuggestedRemedy  
 add or: "depending on whether the specification in question is for exceeding or dropping below a threshold"  
 Proposed Response Response Status W  
 PROPOSED ACCEPT IN PRINCIPLE.  
 Suggest rewording for readability:  
 Change "When the MPI is not accessible, compliance to voltage specifications shall be met for a minimum or maximum of the voltage at TC1 and TC2, depending on whether the specification in question is for exceeding dropping below a threshold, respectively."  
 To:  
 "When the MPI is not accessible, compliance to voltage specifications is met at TC1 and TC2, and both TC's shall meet the specification. That is, if the specification calls for the voltage to exceed a value, then the minimum of the voltages at TC1 and TC2 exceeds the threshold, whereas if the specification calls for the voltage to be below a value, then the maximum of the two TC voltages is the value."

Cl 169 SC 169.4.4.5 P104 L31 # 31  
 Jones, Chad Cisco Systems, Inc.  
 Comment Type E Comment Status D EZ  
 transitions into left hand line missing arrowheads  
 SuggestedRemedy  
 add arrowheads to exit from DISCOVERY\_HIGH\_MARK1 at line 31, 40, and 52  
 Proposed Response Response Status W  
 PROPOSED ACCEPT IN PRINCIPLE.  
 (may be overwritten by other, more complex state diagram comments)

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Cl 169 SC 169.4.4.5 P105 L23 # 32  
 Jones, Chad Cisco Systems, Inc.  
 Comment Type E Comment Status X EZ  
 transitions into left hand line missing arrowheads  
 SuggestedRemedy  
 add arrowheads to exit from DISCOVERY\_HIGH\_MARK4 at line 23 and 39  
 Proposed Response Response Status W  
 PROPOSED ACCEPT IN PRINCIPLE.  
 (may be overwritten by other, more complex state diagram comments)

Cl 169 SC 169.4.5 P106 L10 # 33  
 Jones, Chad Cisco Systems, Inc.  
 Comment Type E Comment Status D EZ  
 missing word: "the link to determine at least one MPD remains"  
 SuggestedRemedy  
 add if: "the link to determine if at least one MPD remains"  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.

Cl 169 SC 169.4.6 P106 L51 # 34  
 Jones, Chad Cisco Systems, Inc.  
 Comment Type E Comment Status D MPSE State diagram  
 "If discovery is not completed before the TDiscovery timer expires, the current discovery cycle shall be aborted and the MPSE returns to BACKOFF."  
 this sentence belongs in the preceding paragraph as the second sentence.  
 SuggestedRemedy  
 move sentence, making paragraph at line 47 read:  
 "The MPSE shall complete discovery within TDiscovery as defined in Table 169-3. If discovery is not completed before the TDiscovery timer expires, the current discovery cycle shall be aborted and the MPSE returns to BACKOFF. If no valid and compatible..."  
 Proposed Response Response Status W  
 PROPOSED ACCEPT IN PRINCIPLE.  
 Consider with comments 76 and 77, which substantially modify the text, along with comments in the duplicate shall topic.

Cl 169 SC 169.4.6 P107 L1 # 35  
 Jones, Chad Cisco Systems, Inc.  
 Comment Type T Comment Status D MPSE  
 "Under all conditions, an MPSE shall present an invalid MPD discovery signature with one of the attributes as defined in Table 169-4."  
 This sentence is copied from CI 33 or 145. As those are point to point PoE, two PSEs should never be on the same link. It has been agreed that we want to allow more than one PSE per mixing segment. This sentence disallows that. Additionally, there is no need for this restriction for MPoE.

SuggestedRemedy  
 Delete the sentence.  
 Proposed Response Response Status W  
 PROPOSED ACCEPT IN PRINCIPLE.  
 TFTD. Consider whether there are unintended consequences.

Cl 169 SC 169.4.7 P108 L6 # 36  
 Jones, Chad Cisco Systems, Inc.  
 Comment Type E Comment Status D MPSE  
 V(MPSE(PON)) is lengthy. We don't have an VMPSE that we need it differentiate from, so why have the (PON)? Delete (PON). This harmonizes with a comment made against page 99.

SuggestedRemedy  
 Delete (PON) from the symbol name of item 1 of Table 169-5 on line 6 and from the text in 169.4.10 on line 54.  
 Proposed Response Response Status W  
 PROPOSED ACCEPT IN PRINCIPLE.  
 (process with comment 28).  
 Commenter's suggested remedy plus one other reference:  
 Delete (PON) from:  
 P108 L6: symbol name of item 1 of Table 169-5  
 P108 L32: definition of Min Overload current on item 11 of Table 169-5  
 P108 L54: text in 169.4.10

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Cl 169 SC 169.4.7 P108 L9 # 37

Jones, Chad Cisco Systems, Inc.

Comment Type T Comment Status D MPSE

Item 2 of Table 169-5: we should not define the max as 100W as this will confuse some readers, mostly from the enforcement community. I suggest we delete the 100 and replace with an emdash. All that is important is we define the minimum power the MPSE shall deliver.  
to convey the upper limit, we should add V{MPSE}max on line 40 in 168.4.8, after "External safety requirements limit the power an MPSE can supply." with some further descriptive text at the end of the paragraph.

*SuggestedRemedy*

delete 100 in Table 169-5 item 2, two places. Replace with emdash.  
Change line 40 to: "External safety requirements limit the power an MPSE can supply, V{MPSE}max."  
add "For these reasons, V{MPSE}max is left undefined in Table 169-5, Item 2."

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.  
TFTD. Consider unintended consequences of leaving the maximum power output capability of a compliant MPSE unrestricted. Also note that 169.7.1 section requires the MPSE to be classified as a Limited Power Source under Annex Q of IEC 62368-1:2023, which implies a 100VA limit.

Cl 169 SC 169.4.11.1 P109 L12 # 38

Jones, Chad Cisco Systems, Inc.

Comment Type E Comment Status D MPSE

We define TPS requirements but never explain why it exists. There is a sentence at the end that alludes to the purpose, but we can do better. Add some descriptive text to start the section.

*SuggestedRemedy*

Add before the text on line 12: "TPS allows MPDs to have sleep states to minimize power consumption. Presence of TPS reports to the MPSE that there are active MPDs on a mixing segment that may be consuming very low power."

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.  
Suggest rewording for readability along lines of commenter's suggested change:  
Also consider the title of 169.4.11.1.  
The TPS is a "signature" presented by an MPD, detected by an MPSE. 4 lines up (in 169.4.11) we call it the "MPD TPS". In 169.4.11.1 we call it the MPSE TPS.

Change title of 169.4.11.1 to "MPSE detection of MPD transmit power signature (TPS)".

Add text before the text on line 12: "TPS allows MPDs to minimize power consumption, for example, in sleep states. By sensing the presence of TPS, an MPSE can tell that there are active MPDs on the mixing segment, even if they are consuming minimal power."

Cl 169 SC 169.5.2 P110 L31 # 39

Jones, Chad Cisco Systems, Inc.

Comment Type E Comment Status D EZ

floating "|" character. Delete.

*SuggestedRemedy*

delete "|" just after figure 169-5

Proposed Response Response Status W

PROPOSED ACCEPT.

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Cl 169 SC 169.5.3.6 P114 L40 # 40  
 Jones, Chad Cisco Systems, Inc.  
 Comment Type E Comment Status D EZ  
 more state transitions missing arrowheads.  
 SuggestedRemedy  
 two transitions to the left edge at line 40 and 51, one transition to the right edge at line 41.  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.

Cl 169 SC 169.5.5.3 P119 L33 # 43  
 Jones, Chad Cisco Systems, Inc.  
 Comment Type E Comment Status D EZ  
 sentence ends with two periods.  
 SuggestedRemedy  
 delete one period.  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.

Cl 169 SC 169.5.3.6 P115 L24 # 41  
 Jones, Chad Cisco Systems, Inc.  
 Comment Type E Comment Status D EZ  
 more state transitions missing arrowheads.  
 SuggestedRemedy  
 two transitions to the left edge at line 33 and 43, three transition to the right edge at line 24, 36, and 50.  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.

Cl 169 SC 169.6.1.1.1 P120 L33 # 44  
 Jones, Chad Cisco Systems, Inc.  
 Comment Type E Comment Status D EZ  
 quotation marks are never closed.  
 "An impulse test consisting of a 1500 V, 10/700 waveform, applied 10 times, with a 60 s interval between pulses. The shape of the impulses is 10/700 (10 μs virtual front time, 700 μs virtual time to half value), as defined in ITU-T Recommendation K.44.  
 SuggestedRemedy  
 close the quote:  
 "An impulse test consisting of a 1500 V, 10/700 waveform, applied 10 times, with a 60 s interval between pulses. The shape of the impulses is 10/700 (10 μs virtual front time, 700 μs virtual time to half value)", as defined in ITU-T Recommendation K.44.

Proposed Response Response Status W  
 PROPOSED ACCEPT.

Cl 169 SC 169.5.5 P118 L39 # 42  
 Jones, Chad Cisco Systems, Inc.  
 Comment Type T Comment Status D MPD  
 500uA for disable current - this is 22.5mW BEST CASE (45V Vmpse). We require the MPD to actively indicate that it is underpowered. For sure this isn't enough to display a console port message, and not sure it's enough to flash an LED (the two examples given in the text for indication).  
 SuggestedRemedy  
 Raise this number. Perhaps we allow 1U for disabled (once we lower the U value to something less than 1 and 2W)? Or make this 5mA to get an order of magnitude more power.  
 Proposed Response Response Status W  
 PROPOSED ACCEPT IN PRINCIPLE.  
 TFTD - Task Force members requested to consider the proper level for this parameter.

Cl 169 SC 169.6.1.1.2 P120 L51 # 45  
 Jones, Chad Cisco Systems, Inc.  
 Comment Type E Comment Status D EZ  
 quotation marks are never closed.  
 "An impulse test consisting of a 1500 V, 10/700 waveform, applied 10 times, with a 60 s interval between pulses. The shape of the impulses is 10/700 (10 μs virtual front time, 700 μs virtual time to half value), as defined in ITU-T Recommendation K.44.  
 SuggestedRemedy  
 close the quote:  
 "An impulse test consisting of a 1500 V, 10/700 waveform, applied 10 times, with a 60 s interval between pulses. The shape of the impulses is 10/700 (10 μs virtual front time, 700 μs virtual time to half value)", as defined in ITU-T Recommendation K.44.  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.

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Cl 169 SC 169.6.1.1.2 P121 L5 # 46  
 Jones, Chad Cisco Systems, Inc.  
 Comment Type E Comment Status D EZ  
 spacing for this paragraph is wrong.  
 SuggestedRemedy  
 change spacing of the paragraph to single line.  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.

Cl 169 SC 169.7.1 P121 L46 # 47  
 Jones, Chad Cisco Systems, Inc.  
 Comment Type E Comment Status D EZ  
 appearance of PSE. Should be MPSE. I searched the doc and found this lone occurrence.  
 SuggestedRemedy  
 Change PSE to MPSE.  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.

Cl 169 SC 169.7.6 P123 L9 # 48  
 Jones, Chad Cisco Systems, Inc.  
 Comment Type E Comment Status D EMC  
 "In addition, the system may need to comply with more stringent requirements as agreed upon between customer and supplier, for the limitation of electromagnetic interference."  
 Not sure why this interoperability standard is talking about agreements between the customer and supplier. This sentence is beyond the scope of an interop standard and should be deleted.  
 SuggestedRemedy  
 Delete this sentence.  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.

Cl 169 SC 169.7.6 P123 L20 # 49  
 Jones, Chad Cisco Systems, Inc.  
 Comment Type E Comment Status D EMC  
 "Exact test setup and test limit values may be adapted to each specific application, subject to agreement between the customer and the supplier."  
 Not sure why this interoperability standard is talking about agreements between the customer and supplier. This sentence is beyond the scope of an interop standard and should be deleted.

SuggestedRemedy  
 delete ", subject to agreement between the customer and the supplier"  
 leaving just: "Exact test setup and test limit values may be adapted to each specific application."  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.

Cl 168 SC 168.8 P82 L18 # 50  
 Zimmerman, George CME Consulting/ADI,APLGP,CSCO,MRVL,ONSMI,SO  
 Comment Type E Comment Status D Editorial  
 Sentence is long, complex, and hard to understand, and does not adequately capture that the TCI's two-conductor connection may be integrated within the DTE. Would be better as multiple simpler sentences:  
 "The mixing segment shall be a linear topology, with DTE attached at a TCI, where each TCI has two connections on the mixing segment, one facing in the direction of the left edge termination of the mixing segment (TC1) and one facing in the direction of the right edge termination of the mixing segment (TC2), and a two-conductor connection facing the DTE (see Figure 168-18)."

SuggestedRemedy  
 Replace first sentence in 2nd paragraph of 168.8 with:  
 "The mixing segment shall be a linear topology, with DTE attached to a trunk at a TCI. Each TCI has two connections, TC1 and TC2, on the mixing segment, one facing in each direction toward an edge termination.  
 Additionally, each TCI has a two-conductor connection facing the DTE (see Figure 168-18). See 168.9 for more information on the TCI, which may be integrated within the DTE."  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.

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Cl 169 SC 169.5 P119 L36 # 51

Zimmerman, George CME Consulting/ADI,APLGP,CSCO,MRVL,ONSmi,So

Comment Type E Comment Status D EZ

Table 169-9 has the wrong title. It is about the MPD TPS parameters, not the MPSE discovery parameters (which is the title of Table 169-3).

SuggestedRemedy

Change title of Table 169-9 to "MPD Transmit Power Signature (TPS) parameters"

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

Think this should be, "Change title of Table 169-9 to "MPD transmit power signature (TPS) parameters" to align with capitalization in title of clause 169.5.5.3.

Cl 168 SC 168.2 P57 L3 # 52

Zimmerman, George CME Consulting/ADI,APLGP,CSCO,MRVL,ONSmi,So

Comment Type T Comment Status D 10BASE-T1S

"The 10BASE-T1M PHY builds on the operation of the 10BASE-T1S PHY defined in Clause 147 when running half duplex in multidrop mode." suggests that the 10BASE-T1M PHY has modes other than multidrop - which isn't what is meant. A little wordsmithing of this introduction to 10BASE-T1M is needed to make it clear that the primary difference between the 10BASE-T1M and 10BASE-T1S PHY types is that T1M only supports multidrop.

SuggestedRemedy

Change first 2 sentences of first paragraph of 168.2 (making edits and reversing the order of the sentences):

The 10BASE-T1M PHY supports only shared media, i.e., multidrop, half duplex communications over a single balanced pair of conductors forming a mixing segment. The 10BASE-T1M PHY builds on the operation of the 10BASE-T1S PHY defined in Clause 147 when running half duplex in multidrop mode."

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

Might be easier to read if "i.e., multidrop" were in parens instead.

The 10BASE-T1M PHY supports only shared media (i.e., multidrop) half duplex communications over a single balanced pair of conductors forming a mixing segment. The 10BASE-T1M PHY builds on the operation of the 10BASE-T1S PHY defined in Clause 147 when running half duplex in multidrop mode.

Cl 168 SC 168.9 P84 L23 # 53

Zimmerman, George CME Consulting/ADI,APLGP,CSCO,MRVL,ONSmi,So

Comment Type T Comment Status D TCI

Language about TCI connection in 168.9 to PMA needs to be aligned to the figures and description elsewhere (e.g., 168.8) which refers to the DTE rather than the PMA, and includes service loops & stubs within the DTE.

SuggestedRemedy

At P84 L22: Change "PMA (and any associated stub or service loop)" to "DTE (including any associated stub or service loop)"

At P84 L44; P85 L11; P86 L3; P86 L 19; Change "PMA" to "DTE"

Proposed Response Response Status W

PROPOSED ACCEPT.

Cl 168 SC 168.9.1.1 P86 L3 # 54

Zimmerman, George CME Consulting/ADI,APLGP,CSCO,MRVL,ONSmi,So

Comment Type T Comment Status D TCI

We missed one TC3. Since there is only one place the DTE or DTE load can be, it is not needed to be said. This language should be aligned with that in other sections.

SuggestedRemedy

P86 L3 change "at TC3" to "at the TCI"

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

(see comments 2 and 27)

Replace, "With the PMA (or simulated DTE load specified for the TCI) present at TC3," with "With a PMA or simulated DTE load present at the TCI,"

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Cl 168 SC 168.9.2 P86 L19 # 55

Zimmerman, George CME Consulting/ADI,APLGP,CSCO,MRVL,ONSMI,SO

Comment Type E Comment Status D TCI

The reference to "TCI attachment " suggests that the TCI is always detachable from the DTE - it isn't. The word attachment adds no clarity, so suggest we just say the DTE is present at the TCI.

SuggestedRemedy

P86 L19 delete "attachment"

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.  
Accomodated by comment 2  
PROPOSED ACCEPT IN PRINCIPLE.

Replace, "With the PMA (or simulated DTE load specified for the TCI) present at TC3," with "With a PMA or simulated DTE load present at the TCI,"

Cl FM SC FM P8 L13 # 56

Zimmerman, George CME Consulting/ADI,APLGP,CSCO,MRVL,ONSMI,SO

Comment Type E Comment Status D EZ

Editor titles have shifted with Val coming back on board, put editors in alphabetical order

SuggestedRemedy

Change "Editor-in-Chief" on line 14 to "Technical Editor"  
Move "Valerie Maguire, ... Managing Editor" before "George Zimmerman,... Technical Editor"

Proposed Response Response Status W

PROPOSED ACCEPT.

Cl 1 SC 1.5 P21 L36 # 57

Zimmerman, George CME Consulting/ADI,APLGP,CSCO,MRVL,ONSMI,SO

Comment Type E Comment Status D EZ

Add TPS "Transmit Power Signature" to abbreviations

SuggestedRemedy

Add TPS "Transmit Power Signature" to abbreviations

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

Change to AIP

"transmit power signature" is not capitalized throughout document.

Add TPS "transmit power signature" to abbreviations

Cl 45 SC 45.2.3.1.2 P33 L6 # 58

Zimmerman, George CME Consulting/ADI,APLGP,CSCO,MRVL,ONSMI,SO

Comment Type T Comment Status D Management

The inclusion of 10BASE-T1M and 10BASE-T1S can't work as written in 45.2.3.1.2 because the PCS type selection does not include these phy types (or any of the BASE-T1 PHY types). Loopback needs to be controlled through the dedicated PHY register 3.2291, at bit 3.2291.14. The 3.2291.14 bit can't be a copy of 3.0.14, but since 10BASE-T1S isn't in 4.2.3.1.2, this is just cleanup, I believe, within the scope of 802.3da. A maintenance request is in preparation to deal with the other BASE-T1 PHYs, references to 45.2.3.1.2, and copy instructions.

SuggestedRemedy

Remove 45.2.3.1.2 from the draft.

At P34 L11, change editing instruction to "Change 45.2.3.72.2 as follows:" (removing "first paragraph"), and add the other 2 paragraphs of 45.2.3.72.2 to the draft, with the third paragraph shown deleted (indicated below by </SO> strikeout):

"The default value of bit 3.2291.14 is zero.

</SO> Bit 3.2291.14 is a copy of 3.0.14, and setting or clearing either bit shall set or clear the other bit. Setting either bit shall enable loopback. </SO>"

At P73 L35 (168.4.4), change "register 3.0.14, defined at 45.2.3.1.2" to "register 3.2291.14, defined at 45.2.3.72.2"

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.  
TFTD.

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Cl 148 SC 148.4.7.6 P52 L17 # 59  
 Zimmerman, George CME Consulting/ADI,APLGP,CSCO,MRVL,ONSMI,SO  
 Comment Type E Comment Status D EZ  
 Clean up box on TXOP\_END -  
 SuggestedRemedy  
 delete overlaid boxes on TXOP\_END state in state diagram  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.

Cl 79 SC 79.5 P38 L21 # 60  
 Zimmerman, George CME Consulting/ADI,APLGP,CSCO,MRVL,ONSMI,SO  
 Comment Type T Comment Status D PICS  
 Need to add PICS for PLCA TLVs  
 SuggestedRemedy  
 Add 79.5 and 79.5.3 to the draft, adding new row for:  
 item \*PL | feature PLCA TLV | Subclause 79.3.9 | Value <blank> | Status O | Support Yes[ ]  
 No[ ]  
 and, insert 79.5.13 after 79.5.12 PICS table with entries:  
 Item | Feature | Subclause | Value/Comment | Status |  
 Support  
 PLC1 | PLCA support/status field | 79.3.9.1 | Contains a bitmap identifying PLCA and  
 DPLCA support defined in Table 79-21 | PL:M | Yes [ ] N/A [ ]  
 PLC2 | node ID field | 79.3.9.2 | Contains an integer value indicating the  
 PLCA nodeId | PL:M | Yes [ ] N/A [ ]  
 PLC3 | PLCA TLV usage rules | 79.3.9.3 | PLCA support/status TLV should  
 contain no more than one PLCA TLV | PL:O | Yes [ ] No [ ] N/A [ ]  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.

Cl 148 SC 148.4.4.3 P41 L42 # 61  
 Zimmerman, George CME Consulting/ADI,APLGP,CSCO,MRVL,ONSMI,SO  
 Comment Type E Comment Status D EZ  
 Missing space after period "claim.See"  
 SuggestedRemedy  
 insert space between period and "See"  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.

Cl 168 SC 168.1 P55 L18 # 62  
 Zimmerman, George CME Consulting/ADI,APLGP,CSCO,MRVL,ONSMI,SO  
 Comment Type E Comment Status D Editorial  
 "connected to a mixing segment as defined in 168.8" - we are fond of saying 'as defined',  
 but 168.8 doesn't DEFINE a mixing segment, it provides specifications for one. The mixing  
 segment is defined in 1.4... the follow on sentence is a bit redundant to this as well ...  
 SuggestedRemedy  
 delete "as defined in 168.8."  
 Change "The mixing segment for the operation of the 10BASE-T1M PHY is defined in  
 terms of performance requirements." to  
 "The performance requirements for the mixing segment are specified in 168.8."  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.

Cl 168 SC 168.1 P55 L23 # 63  
 Zimmerman, George CME Consulting/ADI,APLGP,CSCO,MRVL,ONSMI,SO  
 Comment Type E Comment Status D EZ  
 Clause 147 is in the draft - should not be an external xref  
 SuggestedRemedy  
 Change Clause 147 to an active xref  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.

Cl 168 SC 168.4.1 P60 L32 # 64  
 Zimmerman, George CME Consulting/ADI,APLGP,CSCO,MRVL,ONSMI,SO  
 Comment Type E Comment Status D EZ  
 The 10BASE-T1M PCS Reset bit is in 45.2.3.72.1 , not 45.2.3.72  
 SuggestedRemedy  
 Change 45.2.3.72 to 45.2.3.72.1  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.

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Cl 169 SC 169.4.4.5 P104 L1 # 65  
 Zimmerman, George CME Consulting/ADI,APLGp,CSCO,MRVL,ONSMi,So  
 Comment Type **E** Comment Status **D** MPSE State diagram  
 In Figures 169-3 and 169-4 there are connector tags A, C, and D, but no "B". Did we miss something?  
 SuggestedRemedy  
 Change tags C and D to B and C (P104 L2, P104 L53, P105 L2, P105 L43, P105 L52)  
 Proposed Response Response Status **W**  
 PROPOSED ACCEPT IN PRINCIPLE.  
 Consider only if comment 82 is not accepted. (otherwise OBE by proposed remedy to comment 82)

Cl 169 SC 169.4.4.5 P104 L23 # 66  
 Zimmerman, George CME Consulting/ADI,APLGp,CSCO,MRVL,ONSMi,So  
 Comment Type **E** Comment Status **D** EZ  
 Below line 22 on Figure 169-3, and on all of Figure 169-4, the font size on transition conditions seems to have shrunk to 7 pt from the nominal 8pt.  
 SuggestedRemedy  
 Fix font size on transition conditions - all should be 8 pt (same as internal state processes)  
 Proposed Response Response Status **W**  
 PROPOSED ACCEPT.

Cl 169 SC 169.5.3.6 P116 L17 # 67  
 Zimmerman, George CME Consulting/ADI,APLGp,CSCO,MRVL,ONSMi,So  
 Comment Type **T** Comment Status **D** MPSE State diagram  
 Conditions out of PON\_EVAL are not correct. Left branch and right branches need to always be greater than or equal to V\_type0\_th, mpd\_type = mixed CANNOT be mismatched..., logic gets simpler and non-overlapping.  
 SuggestedRemedy  
 Change branches from PON\_EVAL as follows (apply subscripts as per state diagram variables):  
 left branch (correct type, to power on):  
 (VMPD ≥ Vtype0\_th) & ( ((mpd\_type = 1) & (VMPD ≥ Vtype1\_th)) | ((mpd\_type = 0) & (VMPD < Vtype1\_th)) | (mpd\_type = mixed) )  
 Right branch (mismatched):  
 (VMPD ≥ Vtype0\_th) & ( ((mpd\_type = 1) & (VMPD < Vtype1\_th)) | ((mpd\_type = 0) & (VMPD ≥ Vtype1\_th)) )  
 Proposed Response Response Status **W**  
 PROPOSED ACCEPT.

Cl 168 SC 168.6.4.4.1 P80 L1 # 68  
 Zimmerman, George CME Consulting/ADI,APLGp,CSCO,MRVL,ONSMi,So  
 Comment Type **E** Comment Status **D** Editorial  
 This section is more than the Upper PSD, it doesn't make sense to have the upper PSD delineated by a section, the lower PSD, and the graph. So I suggest we drop the section headers and lump it all in to 168.6.4.4  
 SuggestedRemedy  
 Delete section header 168.6.4.4.1, Delete section header 168.6.4.4.2, add paragraph spacing between lines 9 & 10 (frequency range for equation 168-1 and "Lower PSD")  
 Proposed Response Response Status **W**  
 PROPOSED ACCEPT.

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CI 168 SC 168.4.4.1 P80 L10 # 69  
 Zimmerman, George CME Consulting/ADI,APLGp,CSCO,MRVL,ONSmi,So  
 Comment Type T Comment Status D PMA  
 Lower PSD mask has been shown to be too loose, and consensus model uses a more typical PSD. Tightening of the PSD can be found in beruto\_3da\_20221114\_emc\_noise\_margin.pdf slide 10.

SuggestedRemedy

Adopt lower PSD mask from beruto\_3da\_2022\_1114\_emc\_noise\_margin.pdf slide 10 up to 20 MHz (first lobe)  
 Replace equation 168-2 with  
 Lower PSD(f) = {  
 -77 + 4\*(f-2.5) 2.5 <= f < 5  
 -67 -67 5 <= f < 12.5  
 -67 - 2.5\*(f - 12.5) 12.5 <= f <= 16.5  
 } dBm/Hz

where f is the frequency in MHz; 2.5 <= f <= 16.5.

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.  
 TFTD  
 Initial analysis shows proposed mask may be tight around 12.5 MHz

CI 168 SC 168.10 P87 L28 # 70  
 Zimmerman, George CME Consulting/ADI,APLGp,CSCO,MRVL,ONSmi,So  
 Comment Type T Comment Status D Isolation  
 Unpowered PHYs need isolation requirements to prevent ground loops when powered and unpowered PHYs are mixed

SuggestedRemedy

Replace text of Editor's note with - Comments needed to fill in isolation requirements for unpowered PHYs, particularly when locally-powered DTEs are mixed on the same mixing segment with DTEs powered through the mixing segment...

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.  
 TFTD. Commenter doesn't provide a remedy, only flags an issue to be closed before technical completeness...

CI 168 SC 168.4.4.5 P104 L11 # 71  
 Zimmerman, George CME Consulting/ADI,APLGp,CSCO,MRVL,ONSmi,So  
 Comment Type T Comment Status D MPSE State diagram  
 unconditional entry to IDLE on 'discover\_fault' must be conditioned on mpse\_enable, or else it conflicts with the entry to DISABLE when the mpse is not enabled...

SuggestedRemedy

change leftmost entry to IDLE from "discover\_fault" to 'mpse\_enable \* discover\_fault'

Proposed Response Response Status W

PROPOSED ACCEPT.

CI 168 SC 168.4.4.2 P101 L15 # 72  
 Zimmerman, George CME Consulting/ADI,APLGp,CSCO,MRVL,ONSmi,So  
 Comment Type T Comment Status D MPSE State diagram  
 mpse\_enable, mpse\_ready, mpd\_type0\_discovered, and mpd\_type1\_discovered are all boolean variables in the state diagram (used as TRUE/FALSE conditions). Their values must be TRUE or FALSE, not "enabled/disabled" or not defined.

SuggestedRemedy

see changes in zimmerman\_3da\_01\_0724.pdf  
 text in 8023-169\_proposed\_SDfixes\_simple.pdf

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

TFTD

CI 169 SC 169.4.6 P106 L31 # 73  
 Zimmerman, George CME Consulting/ADI,APLGp,CSCO,MRVL,ONSmi,So  
 Comment Type E Comment Status D Duplicate shalls  
 duplicate shall. The behavior when detecting a short circuit is shown in the state diagram. However, the criterion measured is in the function description as well.

SuggestedRemedy

change "the MPSE shall return to the BACKOFF state." to "the MPSE returns to the BACKOFF state"

Proposed Response Response Status W

PROPOSED ACCEPT.

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Cl 169 SC 169.4.4.4 P102 L38 # 74  
 Zimmerman, George CME Consulting/ADI,APLGp,CSCO,MRVL,ONSMi,So  
 Comment Type E Comment Status D EZ  
 duplicate colon. (discover\_short::)  
 SuggestedRemedy  
 delete one of the colons  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.

Cl 169 SC 169.4.4.3 P102 L15 # 75  
 Zimmerman, George CME Consulting/ADI,APLGp,CSCO,MRVL,ONSMi,So  
 Comment Type T Comment Status D MPSE State diagram  
 discover\_backoff\_timer isn't defined.  
 SuggestedRemedy  
 Insert: discovery\_backoff\_timer  
 A timer used to enforce the time between discovery cycles. See 169.4.6, and Table 169-3.  
 Proposed Response Response Status W  
 PROPOSED ACCEPT IN PRINCIPLE.

Remove extra period (See 169.4.6) and extraneous comma in remedy. The other defined timers in this clause only refer to Table 169-3.

Insert: discovery\_backoff\_timer  
 A timer used to enforce the time between discovery cycles. See Table 169-3.

Cl 169 SC 169.4.6 P106 L44 # 76  
 Zimmerman, George CME Consulting/ADI,APLGp,CSCO,MRVL,ONSMi,So  
 Comment Type T Comment Status D MPSE State diagram  
 The BACKOFF state should reflect that the voltage is held at V\_MPSE\_reset, rather than have a separate "shall" here that is really describing state diagram behavior.  
 SuggestedRemedy  
 Add new function to 169.4.4.4 (in alphabetical order)  
 do\_MPSE\_reset  
 This function presents the reset event voltage (V\_MPSE\_reset) at the TCI.  
 Add "do\_MPSE\_reset" to the "BACKOFF" state in Figure 169-3.  
 Change "BACKOFF, it shall maintain..." to "BACKOFF, it maintains..." at P106 L44  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.

Cl 169 SC 169.4.6 P106 L47 # 77  
 Zimmerman, George CME Consulting/ADI,APLGp,CSCO,MRVL,ONSMi,So  
 Comment Type T Comment Status D MPSE State diagram  
 the T\_Discovery check and condition is not in the state diagram. Given that the time through the state diagram is driven by the cascade through 5 high\_mark state timers and 5 low mark state timers, the time for discovery is deterministic and less than 5\*(high\_time max + low\_time max), so this condition is unnecessary.  
 SuggestedRemedy  
 At P106 L47-48 (169.4.6) delete "The MPSE shall complete discovery within TDiscovery as defined in Table 169-3."  
 (leave in place " If no valid and compatible discovery response is detected, the MPSE shall wait at least TBackoff before reattempting discovery. An MPSE may successfully complete discovery, but then opt not to power the link.")  
 At P106 L 51-52, delete "If discovery is not completed before the TDiscovery timer expires, the current discovery cycle shall be aborted and the MPSE returns to BACKOFF."  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.

Cl 169 SC 169.4.4.3 P102 L16 # 78  
 Zimmerman, George CME Consulting/ADI,APLGp,CSCO,MRVL,ONSMi,So  
 Comment Type E Comment Status D EZ  
 The inrush timer is in Table 169-5. Since the other timers have pointers, it should too.  
 SuggestedRemedy  
 Add "See Table 169-5" to the end of the description of mpse\_inrush\_timer.  
 Proposed Response Response Status W  
 PROPOSED ACCEPT IN PRINCIPLE.  
 Need a '.' at end.  
 Add "See Table 169-5." to the end of the description of mpse\_inrush\_timer.

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Cl 169 SC 169.4.4.3 P102 L19 # 79  
 Zimmerman, George CME Consulting/ADI,APLGp,CSCO,MRVL,ONSMi,So  
 Comment Type E Comment Status D EZ  
 missing period at the end of the decription of tdiscover\_high\_timer  
 SuggestedRemedy  
 add period to match other timers...  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.

Cl 169 SC 169.4.6 P108 L43 # 80  
 Zimmerman, George CME Consulting/ADI,APLGp,CSCO,MRVL,ONSMi,So  
 Comment Type E Comment Status D Editorial  
 The discovery rejection criteria parameters seem to need description. They just say "Reject discovery" which is what the title of the table is...  
 SuggestedRemedy  
 Change Item 1 description to "Reject discovery - short circuit", and item 2 to "Reject discovery - open circuit"  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.

Cl 169 SC 169.4.4.3 P102 L16 # 81  
 Zimmerman, George CME Consulting/ADI,APLGp,CSCO,MRVL,ONSMi,So  
 Comment Type E Comment Status D Editorial  
 The TPS timer is in Table 169-5. Since the other timers have pointers, it should too.  
 SuggestedRemedy  
 Add "See Table 169-5" to the end of the description of tpsdo\_timer.  
 Proposed Response Response Status W  
 PROPOSED ACCEPT IN PRINCIPLE.  
 Need a '.' at end. Also align with other definitions, which only refer to the table.  
 Replace "See 169.4.11.1." with "See Table 169-5."  
 Also, P102 L26, Replace " See T<ED> in Table 169-5." with "See Table 169-5."

Cl 169 SC 169.4.6 P106 L28 # 82  
 Zimmerman, George CME Consulting/ADI,APLGp,CSCO,MRVL,ONSMi,So  
 Comment Type T Comment Status D MPSE State diagram  
 This behavior is contrary to the state diagram, the do\_discovery\_high (and low) functions are executed when a state is entered. The state diagram won't wait to do the measurement... it only waits for the exit. "The MPSE shall wait T\_Mark\_measure between the entrance of a DISCOVERY\_HIGH\_MARKx state and measurement of mark event current..." - there is no way to see when the measurement happens. Similarly for the T\_Discover\_measure waiting on line 37.  
 SuggestedRemedy  
 change "shall wait" to "waits" (2 instances, line 28 and line 37)  
 See state diagram and text changes in zimmerman\_3da\_01\_0724.pdf  
 (text and diagrams also provided as a separate document 8023-169\_proposed\_Sdfixes\_disc\_diag.pdf)  
 Proposed Response Response Status W  
 PROPOSED ACCEPT IN PRINCIPLE.  
 TFTD (big ticket item)  
 Commenters encouraged to review proposed reworking of state diagram to align with text.

Cl 169 SC 169.4.8 P108 L39 # 83  
 Zimmerman, George CME Consulting/ADI,APLGp,CSCO,MRVL,ONSMi,So  
 Comment Type T Comment Status D Editorial  
 duplicate shall - Table 169-5 is already required...  
 SuggestedRemedy  
 change "shall be capable of" to "is capable of"  
 Proposed Response Response Status W  
 PROPOSED ACCEPT IN PRINCIPLE.  
 Location to implement suggested remedy is P108 L39.

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Cl 169 SC 169.4.11.1 P109 L13 # 84  
 Zimmerman, George CME Consulting/ADI,APLGp,CSCO,MRVL,ONSmi,So  
 Comment Type T Comment Status D Duplicate shalls  
 duplicate shalls of what is already in the state diagram (TPS and behavior of removing power)  
 SuggestedRemedy  
 Change "TPS shall be defined" to "TPS is defined" (in first sentence of 169.4.11.1), and "Power shall be removed" to "Power is removed" in last sentence of first paragraph of 169.4.11.1  
 Proposed Response Response Status W  
 PROPOSED ACCEPT IN PRINCIPLE.  
 Location to implement suggested remedy is P109 L13 and P109 L15.

Cl 169 SC 169.4.4.5 P105 L30 # 85  
 Zimmerman, George CME Consulting/ADI,APLGp,CSCO,MRVL,ONSmi,So  
 Comment Type E Comment Status D EZ  
 arrowheads missing where paths join in Figure 169-3 and 169-4  
 SuggestedRemedy  
 add arrowheads at line joinings at P105 L30, L40, L50 on the left side of the page, and P106 L22 and L39 (left hand side of page)  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.

Cl 148 SC 148.4.7.5 P51 L32 # 86  
 Zimmerman, George CME Consulting/ADI,APLGp,CSCO,MRVL,ONSmi,So  
 Comment Type E Comment Status D EZ  
 Two arrowheads where path join in Figure 148-8 (there should be only the one from the side...  
 SuggestedRemedy  
 Delete rising arrowhead at P51 L32 (right side of page)  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.

Cl 148 SC 148.4.5.7 P47 L50 # 87  
 Zimmerman, George CME Consulting/ADI,APLGp,CSCO,MRVL,ONSmi,So  
 Comment Type E Comment Status D EZ  
 Two arrowheads where path join in Figure 148-6 - 2 instances - (there should be only the one in the joining arc...  
 SuggestedRemedy  
 delete arrowhead coming from the left at P47 L50 (join from WAIT\_MAC and TRANSMIT), and  
 delete downward arrowhead from FLUSH state at P47 L50 where arc to "C" joins with arc form WAIT\_MAC & TRANSMIT.  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.

Cl 169 SC 169.5.3.6 P114 L29 # 88  
 Zimmerman, George CME Consulting/ADI,APLGp,CSCO,MRVL,ONSmi,So  
 Comment Type E Comment Status D EZ  
 Missing arrowheads at arcs joining in Figure 169-6 and 169-7  
 SuggestedRemedy  
 Add arrowheads on arcs joining from the right at P114 L40, P114 L51, P115 L31, P115 L44 and add arrowheads on arcs joining from the left at P114 L41, P115 L24, P115 L36, and P115 L50  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.

Cl 169 SC 169.4.4.4 P102 L44 # 89  
 Zimmerman, George CME Consulting/ADI,APLGp,CSCO,MRVL,ONSmi,So  
 Comment Type T Comment Status D MPSE State Diagram  
 is discover\_high\_var used for anything? Was it supposed to be? I can't find it in the state diagram.  
 SuggestedRemedy  
 delete "discover\_high\_var" from outputs of do\_discovery\_high function (P102 L44)  
 Proposed Response Response Status W  
 PROPOSED ACCEPT IN PRINCIPLE.  
 TFTD - Consider whether there is something missing from the state diagram that this variable was supposed to be used for...

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Cl 169 SC 169.4.6 P106 L27 # 90  
 Zimmerman, George CME Consulting/ADI,APLGp,CSCO,MRVL,ONSmi,So  
 Comment Type T Comment Status D Duplicate shalls  
 duplicate shall describing state diagram function (applying high or low mark voltage) in  
 do\_discovery\_high and do\_discovery\_lowx states.  
 SuggestedRemedy  
 P106 L27 and P106 L36 change "shall supply" to "supplies"  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.

Cl 169 SC 169.5 P109 L27 # 91  
 Zimmerman, George CME Consulting/ADI,APLGp,CSCO,MRVL,ONSmi,So  
 Comment Type E Comment Status D Alternate power pairs  
 "requiring power from the TCI" I believe power is drawn from the MPI...  
 SuggestedRemedy  
 change TCI to MPI at P109 L28  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.

Cl 169 SC 169.1.2 P97 L40 # 92  
 Zimmerman, George CME Consulting/ADI,APLGp,CSCO,MRVL,ONSmi,So  
 Comment Type T Comment Status D Alternate power pairs  
 When power is NOT on the same conductors as data, the interface isn't the TCI. This  
 needs to be explained here...

SuggestedRemedy  
 Add the following to the first paragraph of 169.1.2 at the end (line 40):  
 " The interface of the power entity to the medium is the MPI, with connection points MP1  
 and MP2 to the power trunk. When the power is provided over the same pairs as data, the  
 MPI and the TCI are the same connection to the medium and the MPI must also meet the  
 requirements for the TCI needed for the phy (see, e.g., 168.9). However, when data and  
 power are carried on separate conductors, the MPI may be a separate device from the TCI  
 and the related TCI requirements do not apply."

Editor to replace references (including figures) to TC1, TC2, TCI references from the rest of  
 the clause with references to MP1, MP2, and MPI, respectively.

Proposed Response Response Status W  
 PROPOSED ACCEPT IN PRINCIPLE.

I think you mean (e.g., see 168.9) not (see, e.g., 168.9). No other changes.

Add the following to the first paragraph of 169.1.2 at the end (line 40):  
 " The interface of the power entity to the medium is the MPI, with connection points MP1  
 and MP2 to the power trunk. When the power is provided over the same pairs as data, the  
 MPI and the TCI are the same connection to the medium and the MPI must also meet the  
 requirements for the TCI needed for the phy (e.g., see 168.9). However, when data and  
 power are carried on separate conductors, the MPI may be a separate device from the TCI  
 and the related TCI requirements do not apply."

Editor to replace references (including figures) to TC1, TC2, TCI references from the rest of  
 the clause with references to MP1, MP2, and MPI, respectively.

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Cl 169 SC 169.5.2 P109 L48 # 93

Zimmerman, George CME Consulting/ADI,APLGp,CSCO,MRVL,ONSmi,So

Comment Type T Comment Status D Alternate power pairs

"MPDs draw power from the mixing segment" - this statement isn't necessary, and, if the MPD draws power from separate conductors, is not correct.

SuggestedRemedy

Delete sentence. Or, alternatively, change to "MPDs draw power from an attached bus, which, if power and data are on the same conductors, is the mixing segment."

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

Replace,  
"MPDs draw power from the mixing segment."

with,  
"MPDs draw power from an attached bus, which, if power and data are on the same conductors, is the mixing segment."

Cl 169 SC 169.5.3.2 P110 L48 # 94

Zimmerman, George CME Consulting/ADI,APLGp,CSCO,MRVL,ONSmi,So

Comment Type T Comment Status D MPD State diagram

There appears to be no V\_Mark\_th in Table 169-7 or in the state diagram. It is possible that this was meant to be the entry check into the MARK states, which are currently the same as the entry check into the DISCOVERY states (V\_Discovery\_th)

SuggestedRemedy

Delete V\_Mark\_th from P110 L45-47

Proposed Response Response Status W

PROPOSED ACCEPT.

Cl 169 SC 169.5.3.2 P110 L51 # 95

Zimmerman, George CME Consulting/ADI,APLGp,CSCO,MRVL,ONSmi,So

Comment Type T Comment Status D MPD State diagram

There appears to be no V\_Off\_MPD in Table 169-8 or the state diagram. It is possible that this was meant to be the condition to exit PON\_LOAD\_ON... but unlikely since that threshold seems to need to be type-dependent.

SuggestedRemedy

Delete V\_Off\_MPD from 169.5.3.2 (P110 L51)

Proposed Response Response Status W

PROPOSED ACCEPT.

Cl 169 SC 169.5.3.3 P111 L52 # 96

Zimmerman, George CME Consulting/ADI,APLGp,CSCO,MRVL,ONSmi,So

Comment Type E Comment Status D EZ

V\_On\_MPD is not a variable, it is a constant, and is already defined and properly used in 169.5.3...

SuggestedRemedy

Delete V\_On\_MPD from 169.5.3.3 Variables, at P111 L52

Proposed Response Response Status W

PROPOSED ACCEPT.

Cl 169 SC 169.5.3.3 P111 L54 # 97

Zimmerman, George CME Consulting/ADI,APLGp,CSCO,MRVL,ONSmi,So

Comment Type T Comment Status D MPD State diagram

There is no definition for pd\_max\_power as a variable in 169.5.3.3. It is set to value "inrush" in the state diagram at states OFFLINE and IDLE. However, it is never mentioned anywhere else, and it appears that this variable simply should be deleted...

SuggestedRemedy

delete "pd\_max\_power <= inrush" from states OFFLINE and IDLE in Figure 169-6.

Proposed Response Response Status W

PROPOSED ACCEPT.

Cl 169 SC 169.5.3.6 P114 L9 # 98

Zimmerman, George CME Consulting/ADI,APLGp,CSCO,MRVL,ONSmi,So

Comment Type T Comment Status D MPD State diagram

Variable initialization - the state OFFLINE can be entered at any time from mpd\_reset or !dte\_power\_required, so it is important not to rely on variable resets that happen in PON\_NO\_POWER. it seems that present\_tci\_power and present\_mismatch\_indication need to be reset to FALSE here.

SuggestedRemedy

Add the following to state actions in OFFLINE:

present\_tci\_power <= FALSE  
present\_mismatch\_indication <= FALSE

Proposed Response Response Status W

PROPOSED ACCEPT.

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Cl 169 SC 169.5.4 P117 L11 # 99  
 Zimmerman, George CME Consulting/ADI,APLGp,CSCO,MRVL,ONSmI,So  
 Comment Type T Comment Status D MPD State diagram  
 There is a requirement that "the MPD shall draw I\_MPD\_mark within T\_MPD\_discover of entering the state" (for DO\_DISCOVERYx states). However, all DO\_DISCOVERYx states are entered from DO\_MARKn states, which are already required to draw I\_MPD\_mark by the first paragraph of 169.5.4 (P116 L52). Do we need this requirement? If so, then at least it should be "continue to draw" so that the reader understands there is no transition required.  
 SuggestedRemedy  
 Change "'shall draw I\_MPD\_mark" to "shall continue to draw I\_MPD\_mark" at P117 L11  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.

Cl 169 SC 169.5.5 P118 L5 # 100  
 Zimmerman, George CME Consulting/ADI,APLGp,CSCO,MRVL,ONSmI,So  
 Comment Type T Comment Status D Alternate power pairs  
 power is drawn from the MPI, not the mixing segment.  
 SuggestedRemedy  
 change "mixing segment" to "MPI" in two places - P118 L5, and in 169.5.5.1 at P118 L47  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.

Cl 169 SC 169.5.2 P109 L41 # 101  
 Zimmerman, George CME Consulting/ADI,APLGp,CSCO,MRVL,ONSmI,So  
 Comment Type T Comment Status D Alternate power pairs  
 MPD TCI... If the clause 169 protocol runs on separate wires from the data,the interface is just an MPI. The MPI may also be the TCI, but it is always an MPI.  
 SuggestedRemedy  
 Change title of 169.5.2 from MPD TCI to MPD MPI.  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.

Cl 169 SC 169.4.7 P108 L13 # 102  
 Paul, Michael Analog Devices  
 Comment Type T Comment Status D MPSE - LATE  
 Item 4 Ilim has TBD in the min and max columns.  
 SuggestedRemedy  
 Ilim and Cport are linked and dependent on the outcome of presentation paul\_01 . See presentation paul\_da\_02\_2024\_07\_16.pdf  
 Proposed Response Response Status W  
 PROPOSED ACCEPT IN PRINCIPLE.  
 TFTD - awaiting presentation

Cl 169 SC 169.5.5 P118 L36 # 103  
 Paul, Michael Analog Devices  
 Comment Type T Comment Status D MPD - LATE  
 Table 169-8 item 10 "Cport,Max" is TBD  
 SuggestedRemedy  
 Ilim and Cport are linked and dependent on the outcome of presentation paul\_01 . See presentation paul\_da\_02\_2024\_07\_16.pdf  
 Proposed Response Response Status W  
 PROPOSED ACCEPT IN PRINCIPLE.  
 TFTD - awaiting presentation

Cl 169 SC 169.4.7 P108 L12 # 104  
 Paul, Michael Analog Devices  
 Comment Type T Comment Status D MPSE - LATE  
 Item 3, "Output Slew Rate" has TBD for both the Min and Max values  
 SuggestedRemedy  
 See presentation paul\_da\_03\_2024\_07\_16.pdf  
 Proposed Response Response Status W  
 PROPOSED ACCEPT IN PRINCIPLE.  
 TFTD - awaiting presentation

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Cl 169 SC 169.5.5 P118 L31 # 105  
 Paul, Michael Analog Devices  
 Comment Type T Comment Status D MPD - LATE  
 T\_{Inrush backoff} timer needs to be longer because Discovery High Event Time was (proposed) set to 44ms and the voltage regions for discovery high and Type 0 VPort\_MPD are overlapping.  
 SuggestedRemedy  
 Set min and max values to 60ms and 75ms respectively  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.

Cl 169 SC 169.2 P98 L22 # 106  
 Paul, Michael Analog Devices  
 Comment Type T Comment Status D Mixing segment - LATE  
 12 Ohm channel number and text describing the mixing segment needs to be updated  
 SuggestedRemedy  
 See presentation paul\_da\_01\_2024\_07\_16.pdf  
 Proposed Response Response Status W  
 PROPOSED ACCEPT IN PRINCIPLE.  
 TFTD - awaiting presentation  
 Process with comment #4

Cl 169 SC 169.3 P99 L17 # 107  
 Paul, Michael Analog Devices  
 Comment Type T Comment Status D MPSE - LATE  
 Recalculate Table 169-1 using 24V nominal supply using and 4Ohms cable resistance. Also recalculate Type 1 power using 4Ohm cable  
 SuggestedRemedy  
 See presentation paul\_da\_01\_2024\_07\_16.pdf  
 Proposed Response Response Status W  
 PROPOSED ACCEPT IN PRINCIPLE.  
 TFTD - awaiting presentation

Cl 169 SC 169.3 P99 L9 # 108  
 Paul, Michael Analog Devices  
 Comment Type T Comment Status D MPD - LATE  
 Update unit load numbers to power mapping for type 0 and type 1 MPDs in this line: "For Type 0 MPDs, one unit load represents 1W. For Type 1 MPDs, one unit load represents 2W."  
 SuggestedRemedy  
 Change 1W to 1.2W. Change 2W to 4.5W as follows: "For Type 0 MPDs, one unit load represents 1.2W. For Type 1 MPDs, one unit load represents 4.5W." See presentation paul\_da\_01\_2024\_07\_16.pdf  
 Proposed Response Response Status W  
 PROPOSED ACCEPT IN PRINCIPLE.  
 TFTD - awaiting presentation

Cl 169 SC 169.4.6 P107 L19 # 109  
 Paul, Michael Analog Devices  
 Comment Type T Comment Status D MPSE - LATE  
 Item 4, "Discovery high event time" max is an emdash, but needs to be a number.  
 SuggestedRemedy  
 Set max to 44ms. 6.5ms is allocated to settling into the mark voltage, another 20ms should be allocated for a 50Hz power line cycle length of measurement, a further 12ms may be needed for compliance measurement ambiguity as the mixing segment settles back into discovery. The extra 6.5ms is margin. See Paul\_da\_01\_20240124\_v2.pdf slides 17-20 for a description of Mark-Discover timing.  
 Proposed Response Response Status W  
 PROPOSED ACCEPT IN PRINCIPLE.  
 TFTD - awaiting presentation

Cl 169 SC 169.4.6 P107 L19 # 110  
 Paul, Michael Analog Devices  
 Comment Type T Comment Status D MPSE - LATE  
 Item 5, "Discovery low event time" max is TBD  
 SuggestedRemedy  
 Set to 44ms. 20ms is allocated to settling, another 20ms should be allocated for a 50Hz power line cycle length of measurement, the extra 4ms is for margin. See Paul\_da\_01\_20240124\_v2.pdf slides 17-20 for a description of Mark-Discover timing.  
 Proposed Response Response Status W  
 PROPOSED ACCEPT IN PRINCIPLE.  
 TFTD - awaiting presentation

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Cl 169 SC 169.4.6 P107 L21 # 111

Paul, Michael Analog Devices

Comment Type T Comment Status D MPSE - LATE

Total discovery time is a function of 5 discovery pulses that all have min / max timing specifications, this timer is not needed.

*Suggested Remedy*

Remove Item 6 "Discovery Time" in table 169-3.

Proposed Response Response Status W

PROPOSED ACCEPT.