Cl **168** *SC* **168.4.2 b)** *P* **64** *L* **29** # 3

Schreiner, Stephan Rosenberger Hochfrequenztechnik GmbH & Co. KG

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

"Present the minimum impedance described in 168.8.1 at the TCI" does not contain the position (TC1 - TC3) where the minimum impedance should be presented. Because the TCI introduces a more ports than the common MDI, the port needs to be defined. Additionally, a differential impdance can only be defined on one differential port. The TCI will have 4 differential ports (TC1, TC2, TC3-pair one, TC3-pair two). How to handle the remaining ports during the measurement.

SuggestedRemedy

"Present the minimum impedance described in 168.8.1 at all pairs of TCI TC3"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
DEFER - Big Ticket Item

(the impedance is presented across the pairs of the interface, in differential mode)

This is related to writing out TC3. The important thing is that when in receive mode the TCI meets the return loss requirements.
Suggest rewrite as:

Change "Present the minimum impedance described in 168.8.1 at the TCI" to "Meet the return loss specified in 168.8.1.2 at TC1 and TC2."

--- WAS ----

Change "Present the minimum impedance described in 168.8.1 at the TCI" to:
"Present the minimum impedance described in 168.8.1 across TC3"

Cl **168** *SC* **168.5.2** *P* **66** *L* **30** # 4

Schreiner, Stephan Rosenberger Hochfrequenztechnik GmbH & Co. KG

Comment Type **T** *Comment Status* **D** *Test modes*

"These test modes shall change only the data symbols provided to the transmitter circuitry and …" contradicts the sentence page 66, line 48-49: "When test mode 4 is enabled, the transmitter shall present a high impedance termination to the line as specified in 168.4.2 for the 'I' symbol.", because high impedance termination is not only a data symbol provided to the transmitter

SuggestedRemedy

"These test modes shall not alter the electrical and jitter characteristics of the transmitter and receiver from those, which can appear in normal (non-test mode) operation.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **168** *SC* **168.5.2** *P* **66** *L* **48** # 70

Jones, Peter Cisco Systems

Comment Type **T** *Comment Status* **D** *Test modes*

Is this paragraph also affected by question raised in the editor's note in 168.4.2? "This specification either needs to be changed to reflect maintaining the TCI RL specification approach …"

SuggestedRemedy

If yes, then add or update editor's note.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

(related to comment 3, but also removes a duplicate shall)
Change "When test mode 4 is enabled, the transmitter shall present a high impedance termination to the line as specified in 168.4.2 for the 'I' symbol."
to
"When test mode 4 is enabled, the transmitter shall output the 'I' symbol. This permits the the requirements of 168.4.2 to be tested."

TFTD. Whether this needs to be updated depends on whether we add a minimum impedance or we describe the TCI RL.

Cl **168** *SC* **168.5.3** *P* **67** *L* **1** # 5

Schreiner, Stephan Rosenberger Hochfrequenztechnik GmbH & Co. KG

Comment Type **T** *Comment Status* **D** *Test modes*

The test fixtures 168-12 and 168-13 represents the measurement setups for measurements with a MDI. The introduction of the TCI, which has more ports and wire pairs requires a different measurement setup.

SuggestedRemedy

Redraw the figures and provide the required descriptive text.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Commenter is correct, but a replacement figure is needed. This is not something purely for the editor.
TFTD:
Suggest:

Redraw figures to show TCI with measurement taken at either TC 1 or TC2 and TC 2 or TC 1 terminated in 100 ohms.

Cl **168** *SC* **168.5.3** *P* **67** *L* **36** # 26

Jones, Chad Cisco Systems

Comment Type **T** *Comment Status* **D** *Test modes*

"To allow an easy synchronization of the measurement equipment, the PHY shall provide access to
TX_CLK." - this is an untestable shall. We specify at the connector interface, it's impossible to know that you've complied with this shall at the connector.

SuggestedRemedy

change to: "To allow an easy synchronization of the measurement equipment, it is recommended that the PHY provide access to
TX_CLK."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.
(FYI, this same text shows up all over IEEE Std 802.3-2022, maintenance?)

Cl **168** *SC* **168.7** *P* **71** *L* **16** # 32

Jones, Chad Cisco Systems

Comment Type **E** *Comment Status* **D** *TCI*

this paragraph is redundant to 168.8. delete

SuggestedRemedy

delete the paragraph. If not deleted, take out the extra spaces after TCI on line 17.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
The text here has parts that are not in 168.8 (and are not appropriate for that). As such, cleanup is a little more complex, and 168.7 should discuss only what needs to be discussed for specification of the mixing segment, while 168.8 specifies those things that are related to the TCI. As such:

Delete "A TCI may be physically implemented… of a DTE to the trunk." at P71 line 17 (168.7)
Delete extra spaces after TCI on line 17.
Move sentence: "TCIs with compensation… service loop" at page 71 lines 18-19 (168.7) to replace similar sentence at page 74 line 5 ("TCIs with compensation are expected to be matched to a particular PMA.") so that it reads "TCIs with compensation are expected to be matched to a particular PMA/DTE implementation, including any associated stub or service loop." (168.7 to 168.8)

Cl **168** *SC* **168.7.2** *P* **72** *L* **21** # 9

Schreiner, Stephan Rosenberger Hochfrequenztechnik GmbH & Co. KG

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

"The mixing segment at each point TC3, without any DTEs attached, shall meet ..." By having the 4 wire interface on TCI TC3, the measurement on the TC3 interface will cover only the link segment to the right or left side up to the next TCI. At this position - without a DTE attached, the link might be open.

SuggestedRemedy

"The mixing segment return loss, with DTEs or representative dummy loads attached, shall meet…"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **168** *SC* **168.8.1.1** *P* **74** *L* **20** # 10

Schreiner, Stephan Rosenberger Hochfrequenztechnik GmbH & Co. KG

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

This specification can't be met if through connection is provided by DTE, which is suggested by the TCI 4 wire interface on TC3.

SuggestedRemedy

Remove the first paragraph (without PMA…), because a measurment with the PMA (or PMA load…) is sufficient

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.
TFTD
Resolve with comment 8

Cl **168** *SC* **168.8.1.2** *P* **74** *L* **27** # 11

Schreiner, Stephan Rosenberger Hochfrequenztechnik GmbH & Co. KG

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

The NOTE indicates clearly what the purpose of the paragraph is. However, a meaningful physical implementation with a 4 wire TCI TC3 interface might not be able to fulfill the paragraph from line 28 to line 32

SuggestedRemedy

Remove this paragraph

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Remove lines 27 to 35, including equation 168-6.

Cl **169** *SC* **169.2** *P* **86** *L* **27** # 36

Jones, Chad Cisco Systems

Comment Type **T** *Comment Status* **D** *Power - TCI*

we never mention the allowed DC resistance of the stubs. Is this something we need ot specify?

SuggestedRemedy

add a specification for max DC resistance of the stub if needed.

Proposed Response *Response Status* **W**

PROPOSED REJECT.
(May wish to add editor's note)
DEFER
TFTD
The stub is considered part of the DTE. The power entity interfaces at TC1 or TC2, beyond the stub. We MAY need to specify the DC resistance on the through-path of the TCI though…

<Need a proposal>

Cl **169** *SC* **169.3** *P* **86** *L* **39** # 96

Paul, Michael Analog Devices

Comment Type **E** *Comment Status* **D** *Voltage classes*

24V nominal MPSE is an odd label because 24V is below VMPSE(min) for system type 0.

SuggestedRemedy

Change label to "30V Nominal MPSE"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Incorporate commenters remedy & do a global check for 24V nominal MPSE

Cl **169** *SC* **169.3** *P* **86** *L* **44** # 79

Jones, Peter Cisco Systems

Comment Type **T** *Comment Status* **D** *Voltage classes*

Comparing Table 169–1 to Table 104–1,, Table 104-1 has the max voltage for the 24 V regulated PSE (class 6&7) as 36V, why are we only at 30V (class 10/11/12?

SuggestedRemedy

Consider changing 30V to 36V.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Resolved by comment 97. Comment 97 replaced the text from P86 L35 to P87 L8

Cl **169** *SC* **169** *P* **86** *L* **51** # 86

Chauve, Vincent Schneider Electric

Comment Type **TR** *Comment Status* **D** *Power levels*

1W to low for or application See V.CHAUVE Presentation

SuggestedRemedy

change Pmdp(max) from 1W to 16W for type 0

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
OBE by comment 97
DEFER
Need to replace Pmpd(max) spec for both type 0 and 1 with something that reflects the unit load concept.

Cl **169** *SC* **169** *P* **86** *L* **51** # 87

Chauve, Vincent Schneider Electric

Comment Type **TR** *Comment Status* **D** *Power levels*

1W to low for or application See V.CHAUVE Presentation

SuggestedRemedy

change Pmdp(max) from 2W to 32W for type 1

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
OBE - resolved by comment 97.

DEFER
Need to replace Pmpd(max) spec for both type 0 and 1 with something that reflects the unit load concept.

Cl **169** *SC* **169.3** *P* **87** *L* **2** # 97

Paul, Michael Analog Devices

Comment Type **E** *Comment Status* **D** *Power - TCI*

Try to remove references to TC3

SuggestedRemedy

Change "TC3 Interface" to "TCI"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Replace P86 L35 through P87 L9 (Table 169-1 and footnotes) with text and table from paul_02_240313_v1.pdf page 3.

---- (WAS) ---
DEFER - Michael to work good wording…

Change "maximum current flowing at the MPSE and MPD
TC3 interface except during inrush or an overload condition." to
"the maximum absolute value of the difference in current flowing at TC1 from current at TC2 except during inrush or an overload condition."

"the current flowing from the mixing segment to the MPD except during inrush or an overload condition."

Cl **169** *SC* **169.3** *P* **87** *L* **7** # 38

Jones, Chad Cisco Systems

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

footnote d: we say Pmpd(max) is the average allowed power draw, but I don't find that we bound the average. I can average 1W if I draw 100W for 10ms once a second. Surely, that's not compliant.

SuggestedRemedy

define the bounds and add them to the text. Then add (see 169.x to this note to point the reader there).

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Accommodated by comment 97. See paul_02_250313_v1.pdf slide 3.
------ WAS ---
See comment 87:
DEFER
Need to replace Pmpd(max) spec for both type 0 and 1 with something that reflects the unit load concept.

Cl **169** *SC* **169** *P* **101** *L* **16** # 88

Chauve, Vincent Schneider Electric

Comment Type **TR** *Comment Status* **D** *Power levels*

1W to low for or application See V.CHAUVE Presentation

SuggestedRemedy

change Pmdp(max) from 1W to 16W for type 0

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Add new section 169.5.5.2 MPD Power after 169.5.5.1, MPD Inrush, as detailed in paul_02_240313_v1.pdf slide 4.

DEFER
Need to replace Pmpd(max) spec for both type 0 and 1 with something that reflects the unit load concept.

Cl **169** *SC* **169** *P* **101** *L* **17** # 89

Chauve, Vincent Schneider Electric

Comment Type **TR** *Comment Status* **D** *Power levels*

1W to low for or application See V.CHAUVE Presentation

SuggestedRemedy

change Pmdp(max) from 2W to 32W for type 1

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
OBE by comment 88 -
Add new section 169.5.5.2 MPD Power after 169.5.5.1, MPD Inrush, as detailed in paul_02_240313_v1.pdf slide 4.

DEFER
Need to replace Pmpd(max) spec for both type 0 and 1 with something that reflects the unit load concept.