802.3dj D2.2 Comment Resolution Electrical Track

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Introduction

- This slide package was assembled by the 802.3dj editorial team to provide background and detailed resolutions to aid in comment resolution.
- Specifically, these slides are for the various electrical-track comments.

Test fixtures

Comment 141

Text fixtures
Comment #141

(To be completed)

MDI lane mapping

Comment 183

MDI lane mapping
Comment #183

Cl **179C** *SC* **179C.1** *P* **916** *L* **3** # 183

Dudek, Mike — Marvell

Comment Type **TR** *Comment Status* **D** *PMD Mapping (E)*

Annex 180A provides normative requirements for which fibers should be used when connectors are not fully utilized. Whereas for the equivalent situation for CR there is just a "recommendation" with the use of "should"

SuggestedRemedy

Change "When an MDI connector is not fully utilized the lower PMD numbers in Table 179C–2 should be used." to "When an MDI connector is not fully utilized the lower PMD numbers in Table 179C–2 shall be used"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
The commenter points out the misalignment for PMD mapping requirements in the optical modules compared to the copper cables. It seems correct to strongly recommend thar the lower PMD numbers be used when MDI connectors are not fully utilized, however it has never been a normative requirement in past projects.

Consensus will be needed to make the change. For CRG discussion.

Text in question

An MDI connector type may support one or more PMDs. The assignment of PMD signals to connector signals is specified in Table 179C–2, where as an example 0:DL0n refers to the DL0n signal of the first PMD; see 179.8.2 and 179.8.3 for signal naming definitions. When an MDI connector is not fully utilized the lower PMD numbers in Table 179C–2 should be used.

Annex 179C is about the MDI (part of the PMD), not the cable assembly.

The suggested remedy as written would forbid, for example, a host from disabling some lanes in an 8x200G port (e.g. with OSFP connector) because in this case the MDI connector is not fully utilized.

MDI lane mapping Comment #183

Cl **179C** *SC* **179C.1** *P* **916** *L* **3** # 183

Dudek, Mike — Marvell

Comment Type **TR** *Comment Status* **D** *PMD Mapping (E)*

Annex 180A provides normative requirements for which fibers should be used when connectors are not fully utilized. Whereas for the equivalent situation for CR there is just a "recommendation" with the use of "should"

SuggestedRemedy

Change "When an MDI connector is not fully utilized the lower PMD numbers in Table 179C–2 should be used." to "When an MDI connector is not fully utilized the lower PMD numbers in Table 179C–2 shall be used"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
The commenter points out the misalignment for PMD mapping requirements in the optical modules compared to the copper cables. It seems correct to strongly recommend thar the lower PMD numbers be used when MDI connectors are not fully utilized, however it has never been a normative requirement in past projects.

Consensus will be needed to make the change. For CRG discussion.

Text in 180A in comparison

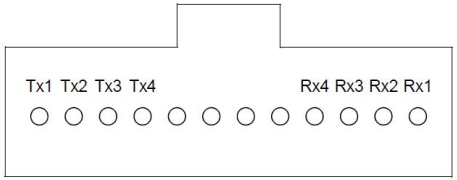

Figure 180A–2—Optical lane assignments for a single-row 12-position connector

When the optical MDI is only supporting a single 1-lane PMD (200GBASE-DR1 or 200GBASE-DR1-2), the optical lanes shall be assigned to the optical connector positions Tx1 and Rx1, as shown in Table 180A–2, regardless of whether fibers are populated in the remaining optical connector positions.

This text is about the case that a host does not **support** all possible PMDs of the MDI (e.g., a module that does not include optical components for some of the lanes of an MPO12 connector).

This is not the same case as in an electrical MDI (it would be equivalent to “not all lanes of an OSFP are associated with PMD Tx/Rx functions”).

As stated in the proposed response, there was never a normative requirement for CR PMDs as suggested. It is arguable whether such hosts exist and need to be addressed at all, especially with a normative statement.

MDI lane mapping
Comment #183

Cl **179C** *SC* **179C.1** *P* **916** *L* **3** # 183

Dudek, Mike — Marvell

Comment Type **TR** *Comment Status* **D** *PMD Mapping (E)*

Annex 180A provides normative requirements for which fibers should be used when connectors are not fully utilized. Whereas for the equivalent situation for CR there is just a "recommendation" with the use of "should"

SuggestedRemedy

Change "When an MDI connector is not fully utilized the lower PMD numbers in Table 179C–2 should be used." to "When an MDI connector is not fully utilized the lower PMD numbers in Table 179C–2 shall be used"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
The commenter points out the misalignment for PMD mapping requirements in the optical modules compared to the copper cables. It seems correct to strongly recommend thar the lower PMD numbers be used when MDI connectors are not fully utilized, however it has never been a normative requirement in past projects.

Consensus will be needed to make the change. For CRG discussion.

Current text in 179C

An MDI connector type may support one or more PMDs. The assignment of PMD signals to connector signals is specified in Table 179C–2, where as an example 0:DL0n refers to the DL0n signal of the first PMD; see 179.8.2 and 179.8.3 for signal naming definitions. When an MDI connector is not fully utilized the lower PMD numbers in Table 179C–2 should be used.

Text in 180A in comparison

When the optical MDI is only supporting a single 1-lane PMD (200GBASE-DR1 or 200GBASE-DR1-2), the optical lanes shall be assigned to the optical connector positions Tx1 and Rx1, as shown in Table 180A–2, regardless of whether fibers are populated in the remaining optical connector positions.

Possible change in 179C to align with 180A language:

When the electrical MDI is does not support the full number of 1-lane PMDs (200GBASE-CR1) shown in Table 179C–2, the lanes [should/shall] be assigned to the lower connector positions.

Editor's recommendation: AIP; Choose between

A. Change the text in 179C as shown on the right, keeping "should".
B. Change the text in 179C as shown on the right, changing to "shall".
C. Delete the sentence.

Amplitude tolerance

Comments 108, 110

Amplitude tolerance
Comments #208, 210

To be completed

RLdc

Comments 177, 142

RLdc
Comment #177, 142

Cl **179**	*SC* **179.9.4.9**	*P* **432**	*L* **8**	# 177

Dudek, Mike — Marvell

Comment Type **T** *Comment Status* **D** *RLdc (E)*

Equation 179-13 didn't get changed correctly per the resolution to C2.1 comment #169. (It was changed to the requirement for the mated test fixture not the TP2 point. Figure 179-5 does not match the equation and appears to be correct.

SuggestedRemedy

Make equation 179-13 match equation 179-20 (but the parameter is correctly RLdc not RLcd)

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
The comment correctly points out an incorrect implementation of the resolution of comment #169 against D2.1, which refers to slide 3 of the contribution <https://www.ieee802.org/3/dj/public/25_09/ghiasi_3dj_03a_2509.pdf>.
The equation was incorrectly changed to the proposed equation for the mated test fixtures (identical to equation 179B–8), instead of the proposed equation for TP2/TP4.

Change Equation 179-13 to the following:
RLdc(f) ≥{ 23-22(f/106.25), 0.05 ≤ f < 53.125 ; 12, 53.125 ≤ f 67 }

Equation 179-13 (transmitter RLdc) as of D2.2

179.9.4.9 Common-mode to differential-mode return loss

The transmitter common-mode to differential-mode return loss shall meet Equation (179–13) as illustrated in Figure 179–5.

$$RLdc(f) \geq \begin{cases} 26 - 22\dfrac{f}{106.25} & 0.05 \leq f < 53.125 \\ 15 & 53.125 \leq f < 67 \end{cases} \quad (179\text{–}13)$$

Is identical to Equation 179B-8 (Test fixture RLdc)

$$RLdc(f) \geq \begin{cases} 26 - 22\dfrac{f}{106.25} & 0.05 \leq f < 53.125 \\ 15 & 53.12 \leq f < 67 \end{cases} \quad (179B\text{–}8)$$

This is an error. To match Figure 179-5 (which is correct), the equation should be the same as Equation 179-20 (which is for RLcd).

Proposed change to Equation 179-13:

$$RLdc(f) \geq \begin{cases} 23 - 22\dfrac{f}{106.25} & 0.05 \leq f < 53.125 \\ 12 & 53.125 \leq f < 67 \end{cases} \quad (179\text{–}13)$$

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