Comments related Removal of Editor's Notes related to SFP224 and SFP-DD224

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Related to Clause 179, Annex(s) 179B, 179C, 179D

Comments #90, 112, 323, 326-332, 335-346

Supporters

- John D’Ambrosia, Futurewei
- Adee Ran, Cisco
- Scott Sommers, Molex
- Matt Brown, Qualcomm
- Nathan Tracy, TE Connectivity
- Terry Little, FIT
- Anil Mehta, Broadcom
- Kent Lusted, Synopsys

Background

- 802.3dj D3P0 has MDI connectors SFP224 and SFP-DD224, along with their normative specifications that do not exist yet as real, citable documents
- The 802.3dj TF submitted liaison letters in July 2025 to the relevant standards organizations to provide a summary of the situation
  - SNIA / SFF (Letter related to SFP224)
  - SFP-DD MSA (Letter related to SFP-DD224)
- As of March 2, 2026 there has been no response to either liaison
  - No contribution of status or copy of the required reference specification for either SFP224 or SFP-DD224

Further Context

- The term “SFP224” appears (32) times in the D3P0 document
  - Clause 179, Annex(s) 179B, 179C, 179D
- The term “SFP-DD224” appears (31) times in the D3P0 document
  - Clause 179, Annex(s) 179B, 179C, 179D
- The specification and reference to either of these MDI connector types is not a requirement for 802.3dj to meet PAR objectives
- We need consider the options to remove the editorial notes and complete the 802.3dj specification absent of these references

Further Context

- The reference to SFP224 offers a convenient example of a host with a 200GBASE-CR1 physical layer and/or breakout configurations
- The reference to SFP-DD224 offers a convenient example of a host with a 200GBASE-CR2 physical layer and/or breakout configurations

For 200GBASE-CR1, the mechanical interface between the PMD and the cable assembly is a mated pair of connectors meeting the requirements of 179C.2.1 (SFP224), 179C.2.2 (SFP-DD224), 179C.2.3 (QSFP224), 179C.2.4 (QSFP-DD1600), or 179C.2.4 (OSFP1600).

For 400GBASE-CR2, the mechanical interface between the PMD and the cable assembly is a mated pair of connectors meeting the requirements of 179C.2.2 (SFP-DD224), 179C.2.3 (QSFP224), 179C.2.4 (QSFP-DD1600), or 179C.2.5 (OSFP1600).

For 800GBASE-CR4, the mechanical interface between the PMD and the cable assembly is a mated pair of connectors meeting the requirements of 179C.2.3 (QSFP224), 179C.2.4 (QSFP-DD1600), or 179C.2.5 (OSFP1600).

For 1.6TBASE-CR8, the mechanical interface between the PMD and the cable assembly is a mated pair of connectors meeting the requirements of 179C.2.4 (QSFP-DD1600) or 179C.2.5 (OSFP1600).

The MDI connector electrical performance is consistent with the signal quality and electrical requirements of 179.9 and 179.11.

Updated from kocsis_01a_2603

Proposed Resolution(s)

In D3P0, 1.3
Comment #323

Current → *Proposed*

SFF-TA-1031, Rev 1.0, June 11, 2023, SFP2 Cage, Connector, & Module Specification.

Editor's note (to be removed prior to publication): When this draft was published the current version of reference SFF-TA-1031 (Rev 1.0) included no specifications for SFP224. If this reference, with specifications for SFP224, is not available for review by the P802.3dj Task Force prior to the January 2026 IEEE 802.3 interim meeting then the reference will be deleted and related MDI specifications will be deleted or appropriately modified (proposal required).

REMOVED

Proposed Resolution(s)

In D3P0, 179.11.6.2.2
Comment #90, 326, 327

Current → *Proposed*

Table 179–22—Number of crosstalk paths used in calculation of COM

Victim (one end)	NEXT	FEXT (other end)			
		SFP224	SFP-DD224	QSFP224	QSFP-DD1600 or OSFP1600
SFP224	1	0	1	3	7
SFP-DD224	2	1	1	3	7
QSFP224	4	3	3	3	7
QSFP-DD1600 or OSFP1600	8	7	7	7	7

Table 179–22—Number of crosstalk paths used in calculation of COM

Victim (one end)	NEXT	FEXT (other end)	
		QSFP224	QSFP-DD1600 or OSFP1600
QSFP224	4	3	7
QSFP-DD1600 or OSFP1600	8	7	7

References would update, as necessary

Updated from kocsis_01a_2603

Proposed Resolution(s)

In D3P0, 179.12
Comment #90, 326, 327

Current → *Proposed*

179.12 MDI specifications

The MDI couples the PMD (specified in 179.8 and 179.9) to the cable assembly (specified in 179.11).

Annex 179C specifies the MDIs for 200GBASE-CR1, 400GBASE-CR2, 800GBASE-CR4, and 1.6TBASE-CR8.

- 200GBASE-CR1 has five specified MDI connectors: SFP224, SFP-DD224, QSFP224, QSFP-DD1600, and OSFP1600.
- 400GBASE-CR2 has four specified MDI connectors: SFP-DD224, QSFP224, QSFP-DD1600, and OSFP1600.
- 800GBASE-CR4 has three specified MDI connectors: QSFP224, QSFP-DD1600, and OSFP1600.
- 1.6TBASE-CR8 has two specified MDI connectors: QSFP-DD1600 and OSFP1600.

179.12 MDI specifications

The MDI couples the PMD (specified in 179.8 and 179.9) to the cable assembly (specified in 179.11).

Annex 179C specifies the MDIs for 200GBASE-CR1, 400GBASE-CR2, 800GBASE-CR4, and 1.6TBASE-CR8.

- 200GBASE-CR1 has three specified MDI connectors: QSFP224, QSFP-DD1600, and OSFP1600.
- 400GBASE-CR2 has three specified MDI connectors: QSFP224, QSFP-DD1600, and OSFP1600.
- 800GBASE-CR4 has three specified MDI connectors: QSFP224, QSFP-DD1600, and OSFP1600.
- 1.6TBASE-CR8 has two specified MDI connectors: QSFP-DD1600 and OSFP1600.

Note -- Implementations that support multiple combinations of PHY types on the same MDI connector, as described in Annex 179C, must be configured appropriately for interoperability with the connected link partners. Selecting the appropriate configuration requires knowledge of the link partners.

Updated from kocsis_01a_2603

Proposed Resolution(s)

In D3P0, 179.15.4
Comment #329, 330

Current → *Proposed*

179.15.4.2 MDI specifications

Item	Feature	Subclause	Value/Comment	Status	Support
MDI1	SFP224	179.12	PMD or cable assembly uses MDI connector type SFP224	O/5	Yes [ ] No [ ] N/A [ ]
MDI2	SFP-DD224	179.12	PMD or cable assembly uses MDI connector type SFP-DD224	O/5	Yes [ ] No [ ] N/A [ ]
MDI3	QSFP-DD1600	179.12	PMD or cable assembly uses MDI connector type QSFP-DD1600	O/5	Yes [ ] No [ ] N/A [ ]

179.15.4.2 MDI specifications

Item	Feature	Subclause	Value/Comment	Status	Support
MDI3	QSFP-DD1600	179.12	PMD or cable assembly uses MDI connector type QSFP-DD1600	O/5	Yes [ ] No [ ] N/A [ ]
MDI4	OSFP-1600	179.12	PMD or cable assembly uses MDI connector type OSFP-1600	O/5	Yes [ ] No [ ] N/A [ ]
MDI5	Mixed MDIs	179.12	Cable assembly uses different MDI connector types on each end	CBL: O/5	Yes [ ] No [ ] N/A [ ]

References would update, as necessary

**Note* - QSFP224 reference is missing*

Proposed Resolution(s)

In D3P0, 179B.4.6
Comment #331, 332

Current → *Proposed*

The SFP224 mated test fixtures integrated near-end crosstalk noise voltage for the disturber near-end crosstalk loss is determined according to the method in 110B.1.3.6, given the disturber near-end crosstalk loss *NEXT_loss*(*f*). The mated test fixtures integrated near-end crosstalk noise voltage shall meet the specification in Table 179B–3.

Table 179B–3—SFP224 mated test fixtures integrated near-end crosstalk noise voltage

Parameter	Value	Units
Integrated near-end crosstalk noise voltage (max)	1.6	mV

REMOVED

Updated from kocsis_01a_2603

Proposed Resolution(s)

In D3P0, 179C.1
Comment #112, 335, 336

Current → *Proposed*

Table 179C–1—Number of PMDs supportable for each connector type

MDI types	200GBASE-CR1	400GBASE-CR2	800GBASE-CR4	1.6TBASE-CR8	Reference
SFP224	1	—	—	—	179C.2.1
SFP-DD224	1,2	1	—	—	179C.2.2
QSFP224	1, 2, 4	1, 2	1	—	179C.2.3
QSFP-DD1600	1, 2, 4, 8	1, 2, 4	1, 2	1	179C.2.4
OSFP1600	1, 2, 4, 8	1, 2, 4	1, 2	1	179C.2.5

Table 179C–1—Number of PMDs supportable for each connector type

MDI connector type	200GBASE-CR1	400GBASE-CR2	800GBASE-CR4	1.6TBASE-CR8	Reference
QSFP224	1, 2, 4	1, 2	1	—	179C.2.3
QSFP-DD1600	1, 2, 4, 8	1, 2, 4	1, 2	1	179C.2.4
OSFP1600	1, 2, 4, 8	1, 2, 4	1, 2	1	179C.2.5

References would update, as necessary

Updated from kocsis_01a_2603

Proposed Resolution(s)

In D3P0, 179C.1
Comment #337, 338

Current → *Proposed*

For 200GBASE-CR1, the mechanical interface between the PMD and the cable assembly is a mated pair of connectors meeting the requirements of 179C.2.1 (SFP224), 179C.2.2 (SFP-DD224), 179C.2.3 (QSFP224), 179C.2.4 (QSFP-DD1600), or 179C.2.4 (OSFP1600).

For 400GBASE-CR2, the mechanical interface between the PMD and the cable assembly is a mated pair of connectors meeting the requirements of 179C.2.2 (SFP-DD224), 179C.2.3 (QSFP224), 179C.2.4 (QSFP-DD1600), or 179C.2.5 (OSFP1600).

For 800GBASE-CR4, the mechanical interface between the PMD and the cable assembly is a mated pair of connectors meeting the requirements of 179C.2.3 (QSFP224), 179C.2.4 (QSFP-DD1600), or 179C.2.5 (OSFP1600).

For 1.6TBASE-CR8, the mechanical interface between the PMD and the cable assembly is a mated pair of connectors meeting the requirements of 179C.2.4 (QSFP-DD1600) or 179C.2.5 (OSFP1600).

The MDI connector electrical performance is consistent with the signal quality and electrical requirements of 179.9 and 179.11.

For 200GBASE-CR1, the mechanical interface between the PMD and the cable assembly is a mated pair of connectors meeting the requirements of 179C.2.3 (QSFP224), 179C.2.4 (QSFP-DD1600), or 179C.2.4 (OSFP1600).

For 400GBASE-CR2, the mechanical interface between the PMD and the cable assembly is a mated pair of connectors meeting the requirements of 179C.2.3 (QSFP224), 179C.2.4 (QSFP-DD1600), or 179C.2.5 (OSFP1600).

For 800GBASE-CR4, the mechanical interface between the PMD and the cable assembly is a mated pair of connectors meeting the requirements of 179C.2.3 (QSFP224), 179C.2.4 (QSFP-DD1600), or 179C.2.5 (OSFP1600).

For 1.6TBASE-CR8, the mechanical interface between the PMD and the cable assembly is a mated pair of connectors meeting the requirements of 179C.2.4 (QSFP-DD1600) or 179C.2.5 (OSFP1600).

The MDI connector electrical performance is consistent with the signal quality and electrical requirements of 179.9 and 179.11.

Proposed Resolution(s)

In D3P0, 179C.1
Comment #339

Current → *Proposed*

Table 179C–3—MDI connector contact mapping for SFP224, SFD-DD224

SFP224	SFP-DD224	Connector signal name	Description
11	11	GND	Ground
12	12	DL0n	Receiver inverted data output
13	13	DL0p	Receiver non-inverted data output
14	14	GND	Ground
17	17	GND	Ground
18	18	SL0p	Transmitter non-inverted data input
19	19	SL0n	Transmitter inverted data input
20	20	GND	Ground
—	31	GND	Ground
—	32	DL1n	Receiver inverted data output
—	33	DL1p	Receiver non-inverted data output
—	34	GND	Ground
—	37	GND	Ground
—	38	SL1p	Transmitter non-inverted data input
—	39	SL1n	Transmitter inverted data input
—	40	GND	Ground

REMOVED

Proposed Resolution(s)

In D3P0, 179C.2.1
Comment #340

Current → *Proposed*

179C.2 MDI connector types

179C.2.1 SFP224

For 200GBASE-CR1, the mechanical interface between the PMD and the cable assembly may be a mated pair of connectors meeting the requirements of SFF-TA-1031, Rev 1.0. SFP224 supports one lane.

Editor's note: When this draft was published the current version of reference SFF-TA-1031 (Rev 1.0) included no specifications for SFP224. If this reference, with specifications for SFP224, is not available for review by the P802.3dj Task Force prior to the January 2026 IEEE 802.3 interim meeting then the reference will be deleted and related MDI specifications will be deleted or appropriately modified (proposal required).

REMOVED

The SFP224 cable assembly connector is the plug illustrated in Figure 179C–1. The SFP224 PMD connector is the receptacle with the mechanical mating interface as illustrated in Figure 179C–2. The connectors have data signal and signal ground contact assignments as specified in Table 179C–3. The pin definition for both the plug and receptacle remains unchanged from Annex 162C.

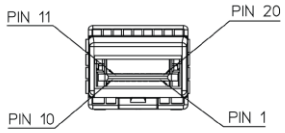

Figure 179C–1—SFP224 cable assembly plug

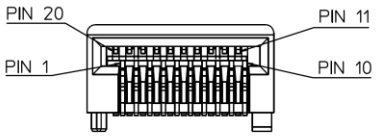

Figure 179C–2—SFP224 PMD receptacle

Proposed Resolution(s)

In D3P0, 179C.2.2
Comment #341

Current → *Proposed*

179C.2.2 SFP-DD224

For 200GBASE-CR1 or 400GBASE-CR2, the mechanical interface between the PMD and the cable assembly may be a mated pair of connectors as defined in the SFP-DD MSA. SFP-DD224 supports up to two lanes.

Editor's note: When this draft was published the SFP-DD MSA had not defined specifications for SFP-DD224. If the SFP-DD MSA specifications for SFP-DD224 are not available for review by the P802.3dj Task Force prior to the January 2026 IEEE 802.3 interim meeting then the reference will be deleted and related MDI specifications will be deleted or appropriately modified (proposal required).

REMOVED

The SFP-DD224 cable assembly connector is the plug illustrated in Figure 179C–3. The SFP-DD224 PMD connector is the receptacle with the mechanical mating interface as illustrated in Figure 179C–4. The connectors have data signal and signal ground contact assignments as specified in Table 179C–3. The pin definition for both the plug and receptacle remains unchanged from Annex 162C.

Figure 179C–3—SFP-DD224 cable assembly plug

Figure 179C–4—SFP-DD224 PMD receptacle

Updated from kocsis_01a_2603

Proposed Resolution(s)

In D3P0, 179C.3.3 Comment #342

Current → *Proposed*

179C.3.3 Major capabilities/options

Item	Feature	Subclause	Value/Comment	Status	Support
*MDI1	SFP224 MDI connector	179C.2.1		O	Yes [ ] No [ ]
*MDI2	SFP-DD224 MDI connector	179C.2.2		O	Yes [ ] No [ ]
*MDI3	QSFP224 MDI connector	179C.2.4		O	Yes [ ] No [ ]
*MDI4	QSFP-DD1600 MDI connector	179C.2.5		O	Yes [ ] No [ ]
*MDI5	OSFP1600 MDI connector	179C.2.6		O	Yes [ ] No [ ]

179C.3.3 Major capabilities/options

Item	Feature	Subclause	Value/Comment	Status	Support
*MDI3	QSFP224 MDI connector	179C.2.4		O	Yes [ ] No [ ]
*MDI4	QSFP-DD1600 MDI connector	179C.2.5		O	Yes [ ] No [ ]
*MDI5	OSFP1600 MDI connector	179C.2.6		O	Yes [ ] No [ ]

References would update, as necessary

Updated from kocsis_01a_2603

Proposed Resolution(s)

In D3P0, 179C.3.4
Comment #343

Current → *Proposed*

179C.3.4 PICS proforma tables for MDIs for 200GBASE-CR1, 400GBASE-CR2, 800GBASE-CR4, and 1.6TBASE-CR8

179C.3.4.1 Contact Mapping

Item	Feature	Subclause	Value/Comment	Status	Support
CM1	SFP224 MDI connector contact mapping according to Table 179C–3	179C.2.1		MDI1:M	Yes [ ] N/A [ ]
CM2	SFP-DD224 MDI connector contact mapping according to Table 179C–3	179C.2.2		MDI2:M	Yes [ ] N/A [ ]
CM4	QSFP224 MDI connector contact mapping according to Table 179C–4	179C.2.4		MDI4:M	Yes [ ] N/A [ ]
CM5	QSFP-DD1600 MDI connector contact mapping according to Table 179C–4	179C.2.5		MDI5:M	Yes [ ] N/A [ ]
CM6	OSFP1600 MDI connector contact mapping according to Table 179C–5	179C.2.6		MDI6:M	Yes [ ] N/A [ ]

179C.3.4 PICS proforma tables for MDIs for 200GBASE-CR1, 400GBASE-CR2, 800GBASE-CR4, and 1.6TBASE-CR8

179C.3.4.1 Contact Mapping

Item	Feature	Subclause	Value/Comment	Status	Support
CM4	QSFP224 MDI connector contact mapping according to Table 179C–4	179C.2.4		MDI4:M	Yes [ ] N/A [ ]
CM5	QSFP-DD1600 MDI connector contact mapping according to Table 179C–4	179C.2.5		MDI5:M	Yes [ ] N/A [ ]
CM6	OSFP1600 MDI connector contact mapping according to Table 179C–5	179C.2.6		MDI6:M	Yes [ ] N/A [ ]

References would update, as necessary

Proposed Resolution(s)

In D3P0, 179D.1
Comment #344

Current → *Proposed*

Table 179D–1—Host receptacles and cable assembly plugs

Receptacle/Plugs	Reference
SFP224	179C.2.1
SFP-DD224	179C.2.2
QSFP224	179C.2.3
QSFP-DD1600	179C.2.4
OSFP1600	179C.2.5

Table 179D–1—Host receptacles and cable assembly plugs

Receptacle/Plugs	Reference
QSFP224	179C.2.3
QSFP-DD1600	179C.2.4
OSFP1600	179C.2.5

References would update, as necessary

Proposed Resolution(s)

In D3P0, 179D.1.1
Comment #345, 346

Current → *Proposed*

Table 179D–2—200GBASE-CR1 cable assembly types and supportable number of PMDs

One end		Other end(s)		Supportable PMDs
Receptacle/Plug	Number	Receptacle/Plug	Number	Number
SFP224	1	SFP224	1	1
SFP-DD224	1	SFP224	2	2
QSFP224	1	SFP224	4	4
QSFP-DD1600	1	SFP224	8	8

Table 179D–2—200GBASE-CR1 cable assembly types and supportable number of PMDs *(continued)*

One end		Other end(s)		Supportable PMDs
Receptacle/Plug	Number	Receptacle/Plug	Number	Number
OSFP1600	1	SFP224	8	8
SFP-DD224	1	SFP-DD224	1	2
QSFP224	1	QSFP224	1	4
QSFP-DD1600	1	QSFP-DD1600	1	8
QSFP-DD1600	1	OSFP1600	1	8
OSFP1600	1	OSFP1600	1	8

Table 179D–2—200GBASE-CR1 cable assembly types and supportable number of PMDs

One end		Other end(s)		Supportable PMDs
Receptacle/Plug	Number	Receptacle/Plug	Number	Number
QSFP224	1	QSFP224	1	4
QSFP-DD1600	1	QSFP-DD1600	1	8
QSFP-DD1600	1	OSFP1600	1	8
OSFP1600	1	OSFP1600	1	8

Summary

- 802.3dj D3P0 has MDI connectors SFP224 and SFP-DD224, along with their normative specifications that do not exist yet as real, citable documents
- As the TF has communicated in the liaison letters to other in the industry, we need consider the options to remove the editorial notes and complete the 802.3dj specification absent of references to SFP224 and SFP-DD224
- The proposed resolution on slides 6-19 illustrates what the specific changes would look like given the information we have today