Updated proposal Electrical Parameters of DME (1D4 Comment 219)

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Supporters

- Matt Brown Alphawave Semi
- John Calvin - Keysight
- Mike Dudek – Marvell
- Ali Ghiasi – Ghiasi Quantum LLC

References

- Proposed update Electrical Parameters of DME
  - Shared Jan 9th 802.3dj Optics Joint with Electrical and Logic ad hoc
  - https://www.ieee802.org/3/dj/public/adhoc/optics/0125_OPTX/simms_3dj_optx_02a_250109.pdf
- Updated proposal Electrical Parameters of DME
  - Shared Feb 20th 802.3dj Optics Joint with Electrical and Logic ad hoc
  - https://www.ieee802.org/3/dj/public/adhoc/optics/0225_OPTX/simms_3dj_adhoc_01_250220.pdf

Review of Comment 219 draft 1.4

Cl **73** *SC* **73.5.1** *P* **122** *L* **38** # 219

Dawe, Piers Nvidia

Comment Type **TR** *Comment Status* **X**

The ancient "DME electrical characteristics" table needs updating. Compare the default preset to start training: 800 to 1000 mV (but see another comment) for CR and KR, 800 to 1000 *0.75 +/-0.025 which is 580 to 775 mV for C2C and C2M, 900 mV for the traditional C2M max, and 850 mV XLPPI max. Traditional C2M and XLPPI can't defend themselves because they don't do AN.
Just as for the transition to 50 ppm, we should move carefully towards where we should be, while paying attention to backward compatibility.

SuggestedRemedy

Bring Table 73-1, DME electrical characteristics, into the draft. It contains:
Transmit differential peak-to-peak output voltage 600 to 1200 mV
Receive differential peak-to-peak input voltage 200 to 1200 mV.
Implement at least slide 7 of simms_3dj_adhoc_01_250220.pdf:

Parameter	Min	Max 0	Max 1	Units
Transmit differential peak-to-peak output voltage	600	1200	1000	mV
Receive differential peak-to-peak input voltage	200	1200	1200	mV

0 When not indicating a technology in the Extended Technology Ability Field (i.e. no 200G/lane)
1 When indicating one or more technologies in the Extended Technology Ability Field (i.e. some 200G/lane)
This is only a long overdue first step. Consider making more progress by implementing slide 10 or 11.
See another comment with a proposal to report "too loud" with the RF bit.

Proposed Response *Response Status* **O**

Review of DME discussion

- Suggestion to reduce DME differential peak-to-peak output voltage from 1200mV to 1000mV to align
  - Applying to existing PMD types would be out of scope due to backward compatibility (requires Maintenance to update)
  - Suggestion to reduce only for 200G/Lane devices
  - Make new limit forward looking: for 200G/Lane and higher rates
  - Discussion to reduce for TX only
  - AUIs do not use AN but CR and C2M share the same connector styles so interconnection between them is likely

- Current table shown

Table 73–1—DME electrical characteristics

Parameter	Value	Units
Transmit differential peak-to-peak output voltage	600 to 1200	mV
Receive differential peak-to-peak input voltage	200 to 1200	mV

Updated proposed change to Table 73-1 [Proposal A]

The Extended Technology Ability Field in Table 73A–1a is for 200G/lane CR and KR

Table 73-1 DME electrical characteristics

- Black existing: Blue proposal

Parameter	Min Value	Technology Ability Group		Units
		0	1	
		Max Value	Max Value	
Transmit differential peak-to-peak output voltage	600	1200	1000	mV
Receive differential peak-to-peak input voltage	200	1200	1200	mV

0	When not indicating a technology in the Extended Technology Ability Field
1	When indicating one or more technologies in the Extended Technology Ability Field

Updated proposed change to Table 73-1 [Proposal B]

The Extended Technology Ability Field in Table 73A–1a is for 200G/lane CR and KR

Table 73-1 DME electrical characteristics

- Black existing: Blue proposal

Parameter	Min Value	Technology Ability Group			Units
		0	1	2	
		Max Value	Max Value	Max Value	
Transmit differential peak-to-peak output voltage	600	1200	1000	1000	mV
Receive differential peak-to-peak input voltage	200	1200	1200	1000	mV

0	When indicating one or more technologies in the Technology Ability Field and not indicating a technology in the Extended Technology Ability Field
1	When indicating one or more technologies in the Technology Ability Field and one or more technologies in the Extended Technology Ability Field
2	When indicating one or more technologies in the Extended Technology Ability Field and not indicating a technology in the Technology Ability Field

Thank You