100GBASE-BR40: Update to Tables

Tomoo Takahara, Fujitsu
Takuya Kanai, NTT Innovative Devices
Hirotaka Nakamura, NTT Innovative Devices

IEEE802.3dk July 2024 meeting

Supporters

Background

- At the June e-meeting we proposed APD OMA Sensitivity for 100GBASE-BR40.
- In this contribution, “Outer Optical Modulation Amplitude” will be proposed clearly.
- Transmitter parameters will be revised according to the receiver sensitivity proposed at the June meeting.

New Proposal for Outer Optical Modulation Amplitude

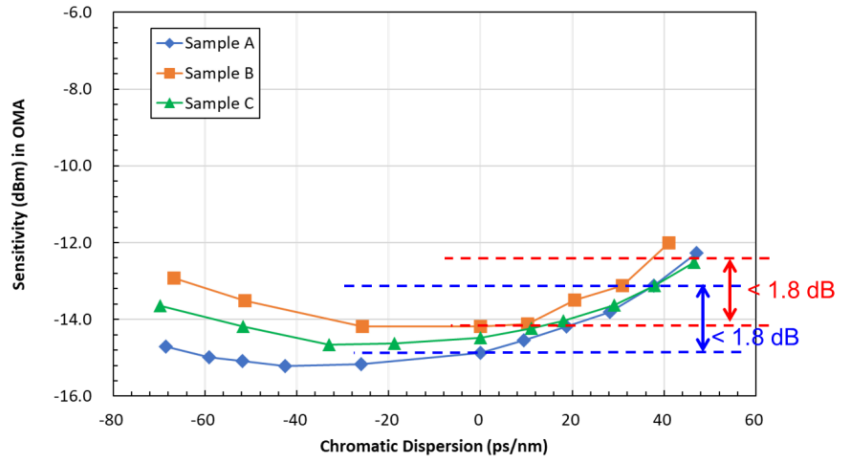
	Outer Optical Modulation Amplitude (OMAouter) (min):		Receiver sensitivity(OMAouter)(max)		Unit
	for TDECQ < 1.4 dB	for 1.4 dB ≦TDECQ ≦ 3.9 dB or TDECQ (max)	for TECQ < 1.4 dB	for 1.4 dB ≦TECQ ≦ 3.9 dB or TDECQ (max	
Baseline	5.7	4.3 + TDECQ	-12.8	-14.2 + TECQ	dBm
Proposal on April Meeting	4.7	3.3 + TDECQ	-13.8	-15.2 + TECQ	dBm
Proposal on June Meeting	5.0	3.6 + TDECQ	-13.5	-14.9 + TECQ	dBm
New Proposal	5.3	3.9 + TDECQ	-13.2	-14.6 + TECQ	dBm

*1 Receiver Sensitivity was proposed on June meeting in 3dk_takahara_2406_1.

Experimental results (recap)

Receiver sensitivity for chromatic dispersion

- Experimental results demonstrated the feasibility of 100G/λ 40-km transmission.



- Receiver sensitivity of -14.2 dBm was achieved for BtoB.
- Chromatic dispersion penalty for -77 to 37 ps/nm was less than 1.8 dB.

3dk_jackson_2307_1r1.pdf

This results of -14.2 dBm is -13.2 dBm, if loss of filter is 1.0 dB.

This results is based on the test setup.

Discussion

- A cost-effective implementation requires relaxation of the characteristics of the receiver as well as the transmitter.
- Considering broad market potential, multiple candidate technologies for implementation are required. For this meaning, balance of transmitter and receiver is indispensable.
- Based on these thought, revised transmitter parameters were proposed according to the receiver sensitivity proposed at the June meeting.

Thank You!