

100G 40km 4x25G NRZ LWDM APD RX Measurement Results

IEEE P802.3ca *100G-EPON* Task Force
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Background

- P802.3ba TF standardized 100GBASE-ER4, 40km 4x25G LWDM (~1295, 1300, 1305, 1310nm) PMD in Clause 88
- 100GBASE-ER4 is based on SOA which was the only high-sensitivity 25G receiver technology available in 2008 when the adopted proposal was made:

http://www.ieee802.org/3/ba/public/may08/cole_02_0508.pdf

- 25G APD RX technology development occurred later and was presented in 2013 to P802.3bm TF:

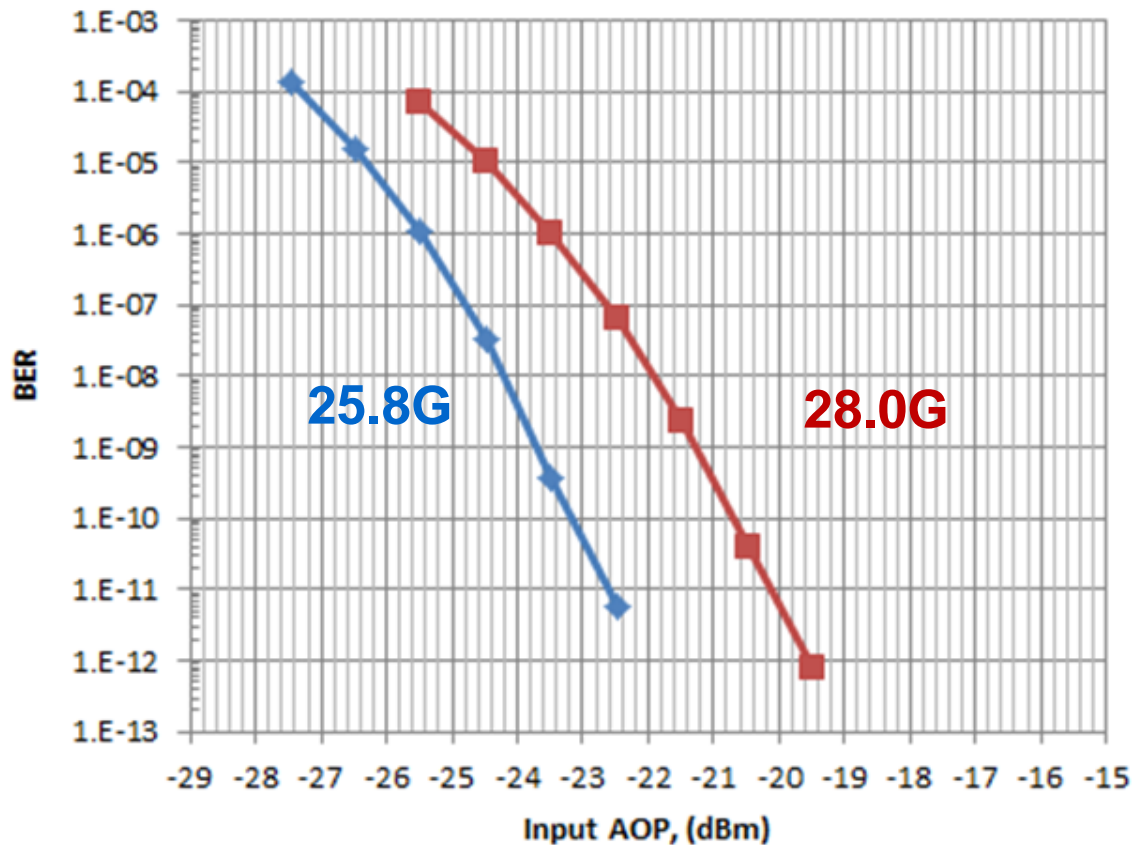
http://www.ieee802.org/3/bm/public/smfadhoc/meetings/apr30_13/cole_04_0413_smf.pdf

- It was decided not to standardize 100G 40km APD RX based PMD in P802.3bm TF because of project timing
- Work to standardize 100G 40km APD RX then moved to ITU-T Study Group 15 (SG15) Question 6 (Q6)

Background, cont.

- Finisar contribution C1504 to Feb. 2016 ITU-T SG15 Q6 meeting shows detailed 28G DML measurement set-up and results. Summary results are shown on following two pages.
- DML results at 28G were deemed insufficient for a new standard, and a EML parameters based 40km 4x25G LWDM application code 4L1-9D1F was consented
- Further DML results at 28G will be provided to consent a DML based specification
- A new MSA, tentatively named “WDM4 MSA” will translate the 4x28G AOP based ITU-T spec. for Telecom applications into 4x26G OMA based spec. for Ethernet applications. OMA can be used for DML or EML TX.

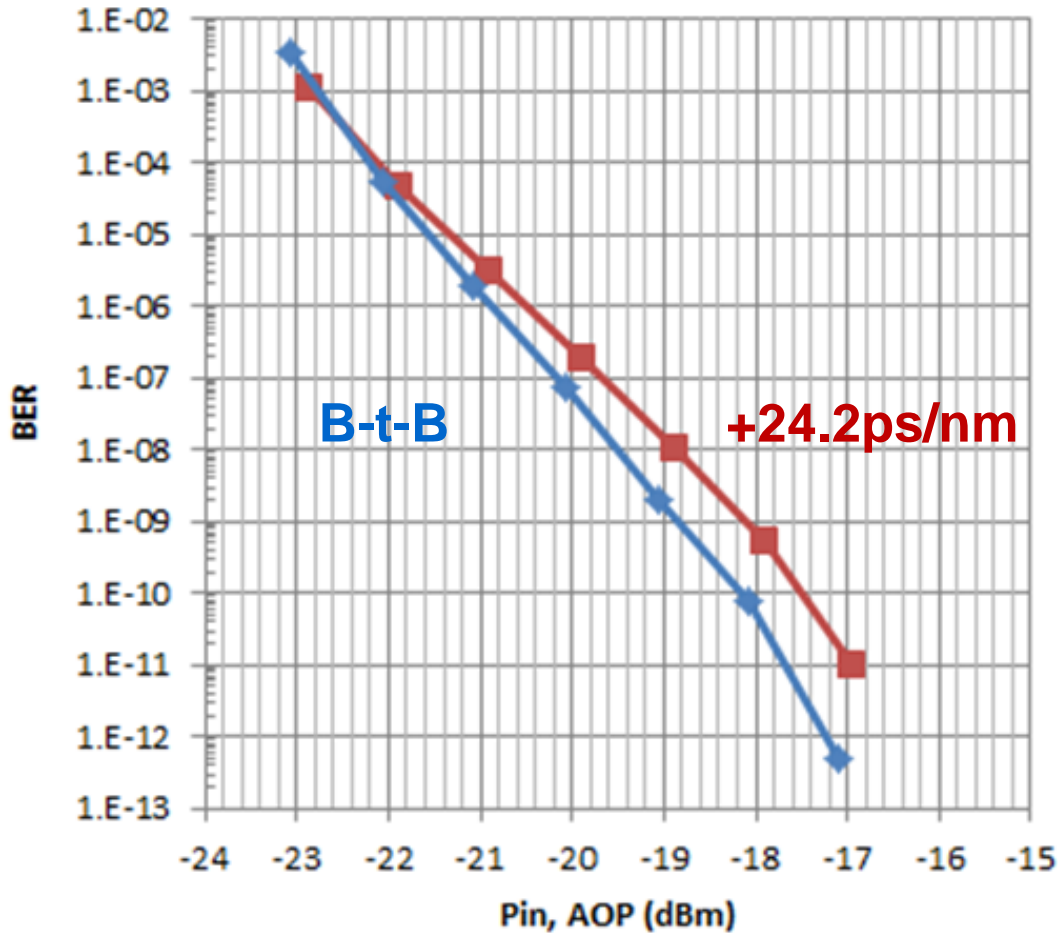
EML TX, APD RX BER



BtB Input AOP @ 5e-5 BER	
25.8G	28.0G
-27.0dBm	-25.4dBm

- $\lambda = 1310\text{nm}$
- TX ER = 10.7
- MM = 38%

DML TX, APD RX BER



**28.0G Input AOP
@ 5e-5 BER**

B-t-B

24.2ps/nm

-22.0dBm

-21.8dBm

- $\lambda = 1308.8\text{nm}$
- TX ER = 5.24
- MM = 24%

100G 40km 4x25G LWDM APD RX Results

Thank you