

Transmitter Specification Relaxation

Supporting material for comments related to TWDP, Extinction Ratio, and Eye Mask

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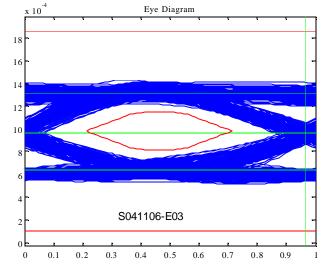


Summary

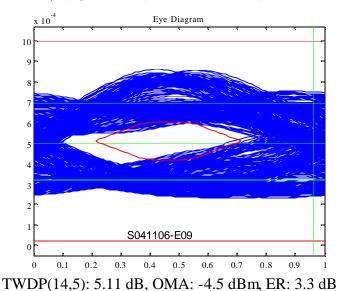
- Description: 10.3125 Gbps waveforms were captured for an off-the-shelf 1310nm TOSA that is nominally rated for 4 Gbps operation
- Results:
 - A passing eye diagram with a "reasonable" TWDP value is obtained for higher OMA and lower extinction ratio (see next slide)
 - The lowest TWDP does not correspond to the best eye diagram
- Observations:
 - There is no apparent reason for the extinction ratio specification;
 maximum peak power, minimum OMA, and maximum average power are already specified
 - By the way, 10GBASE-SR uses 3 dB as minimum ER, and there is no apparent justification for LRM to be higher
 - A relaxation of the TWDP specification and elimination or relaxation of the extinction ratio specification would facilitate low cost transceiver design



4G 1310nm TOSA Results



TWDP(14,5): 5.17 dB, OMA: -1.4 dBm, ER: 3.1 dB

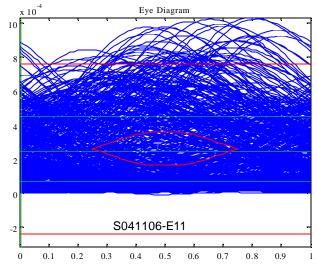


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0 0.1 0.2 0.3 0.4 0.5 0.6 0.7 0.8 0.9 1

TWDP(14,5): 6.04 dB, OMA: -1.4 dBm, ER: 9.0 dB



TWDP(14,5): 9.64 dB, OMA: -4.8 dBm, ER: 8.2 dB