Baseline Proposal for 25GBASE BIDI over 10km Transmission

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IEEE P802.3cp Task Force, Salt City, May 2019

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Introduction

- This presentation provides a baseline proposal for the Study Group adopted objectives:
  - Support bidirectional transmission over a single strand of single mode fiber using a single wavelength in each direction
  - Support MAC data rates of 25 Gb/s
  - Support distances of at least 10 km

Transmitter Specifications

Description	Value	Unit
Signaling speed	25.78125	Gbd
Center wavelength (range)	Up:1260~1280 Down:1320~1340	nm
Side Mode Suppression Ratio (min)	30	dB
Average launch power (max)	2	dBm
Average launch power (min)	-7	dBm
Optical Modulation Amplitude (max)	2.2	dBm
Optical Modulation Amplitude (min)	-4	dBm
Launch power in OMA minus TDP (min)	-5	dBm
Transmitter and dispersion penalty (max)	2.7	dB
Average launch power of OFF transmitter (max)	-20	dBm
Extinction ratio (min)	3	dB
$RIN_{20}OMA$ (max)	-130	dB/Hz
Optical Return Loss Tolerance (max)	20	dB
Transmitter Reflectance(max)	-26	dB
Transmitter eye mask definition A {X1, X2, X3, Y1, Y2, Y3}	{0.31, 0.4, 0.45, 0.34, 0.38, 0.4}	

Receiver Specifications

Description	Value	Unit
Signaling speed	25.78125	Gbd
Center wavelength (range)	1260~1340	nm
Damage threshold (min)	3	dBm
Average receive power (max)	2	dBm
Average receive power (min)	-13.3	dBm
Receive power (OMA), (max)	2.2	dBm
Receiver reflectance (max)	-26	dB
Receiver sensitivity (max) in OMA	-12	dBm
Stressed receiver sensitivity (max) in OMA	-9.5	dBm
Stressed eye closure	2.5	dB
Stressed eye J2 Jitter	0.27	UI
Stressed eye J4 Jitter	0.39	UI
SRS eye mask definition {X1, X2, X3, Y1, Y2, Y3} Hit ratio 5×10-5 hits per sample.	{0.31, 0.4, 0.45, 0.34, 0.38, 0.4}	

Power Budget

Parameter	Value	Unit
Power budget	9.7	dB
Operating distance	10	km
Channel insertion loss	6.3	dB
Maximum Discrete Reflectance (max)	TBD	dB
Allocation for penalties	3.4	dB
Additional insertion loss allowed	0	dB

Recommendation

Adopt the proposed baseline specification for 25GBASE BIDI over 10km Transmission.


thank you
danke
謝謝
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teşekkür ederim
gracias
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