A single wavelength, single fibre PMD for P2P applications: A Baseline Proposal

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Supporters

Bartur, Meir – Zonu

Brand, Richard – Nortel Networks

Cannata, Mark – Marconi

Effenberger, Frank – Quantum Bridge

Ivry, Raanan – Broadlight

Mc Cammon, Kent – SBC

Myers, Brock - Harmonic

Peng, Lisa – Corning

Radcliffe, Jerry – Hatteras Networks

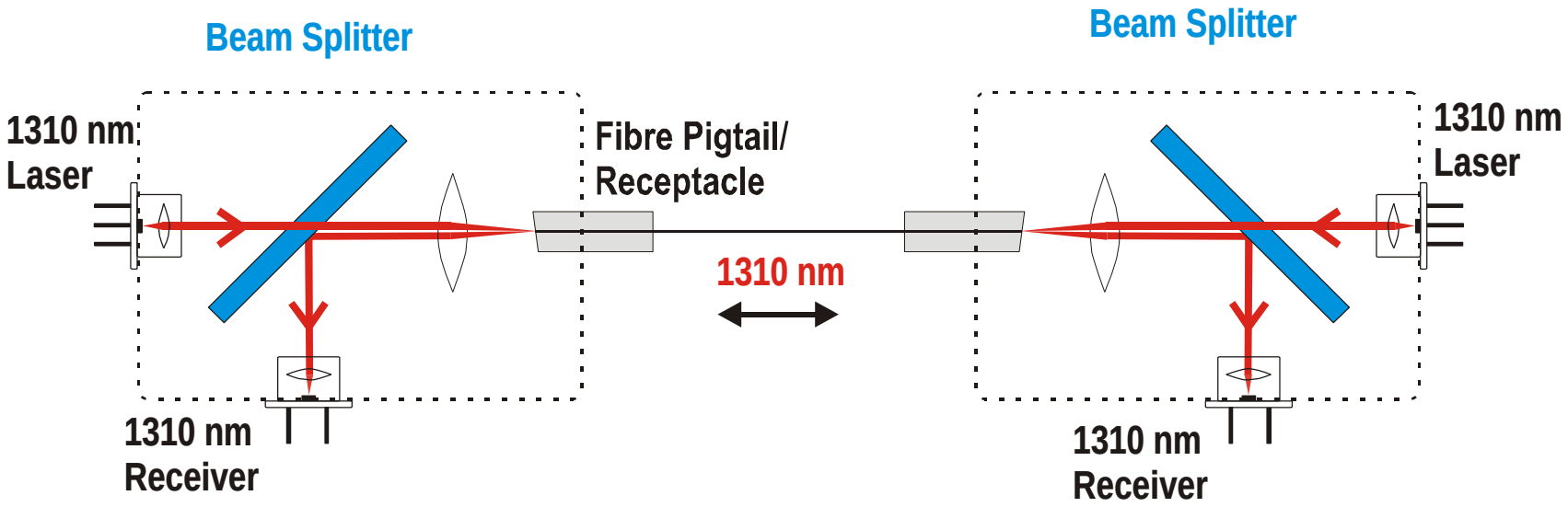
Rotenstein, Sergiu – nBase

Stiscia, Jim – Virata

van Veen, Dora – Lucent

Recap

A single wavelength1310/1310 nm PMD for both ONU and OLT



Power Budget

Various power penalties for a 10 km, 1.25 Gbps P2P link:

Fibre attenuation / dB	5
Connector / dB	2
Dispersion / dB	2
Other / dB	1
Total / dB	**10**

Reflection Issues

Two requirements of the PMD are that an open connector reflection (14 dB) any distance from the PMD does not cause a spurious SD_{Assert} and with a functioning link, that opening a connector anywhere in the fibre (14 dB ORL) will trigger a $SD_{Dessert}$.

These points are addressed in other technical presentations[1]

[1] Presentation from Meir Bartur

PMD Specification

Description	ONU/OLT Module	Unit
Transmitter Type	Bi-directional, 1 fibre	
Signaling speed	1.25	GBd
Link length (range)	0.5 to 10,000	m
Power Budget	10	dB
Wavelength (range)	1270 to 1360	nm
T_{rise}/T_{fall} (Max, 20%-80% response time)	0.26	ns
RMS spectral width (max)	2.4	nm
Average launch power (min)	-9	dBm
Average launch power (max)	-4	dBm
Extinction ratio (min)	9	dB
RIN (max)	-120	dB/Hz
Receiver sensitivity (min)	-19	dBm
Return loss of ODN (min)	20	dB
Return Loss of module (min)	18	dB