

Polarization Mode Dispersion Emulator Solution

PE4000 Series

FIBERPRO's PMD(Polarization Mode Dispersion) Emulator Solution PE4100 & PE4200 can simulate the effect of PMD of several hundreds kilometers of optical fiber on the signal.(Pseudo-Maxwellian distribution) Also PE4200 can generate the first-order PMD with no higher-order PMD.

PMD

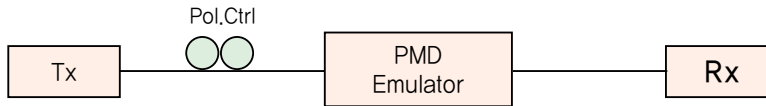


Features

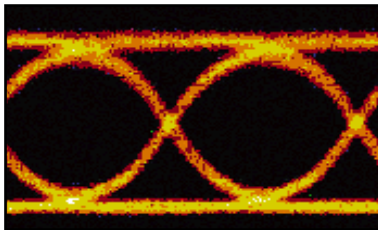
- All fiber configuration
- First-order PMD emulation
- Maxwellian distribution of PMD

Applications

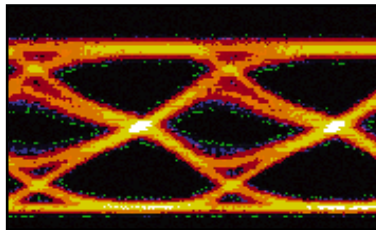
1. Evaluating performance of optical networks and cables in the presence of PMD



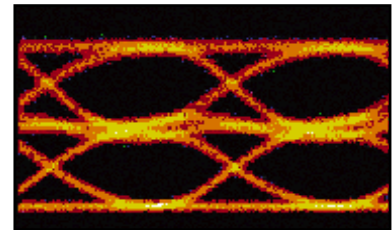
(Typically, the polarization controller is adjusted to launch roughly equal power into two principal states of polarization of PMD Emulator)



(a) DGD = 50 ps



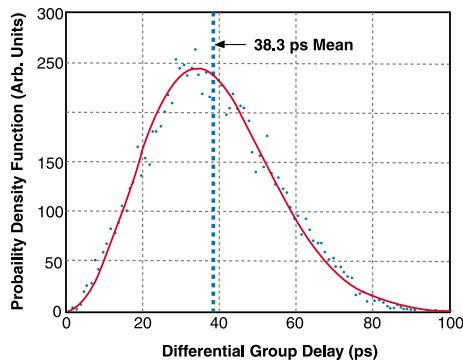
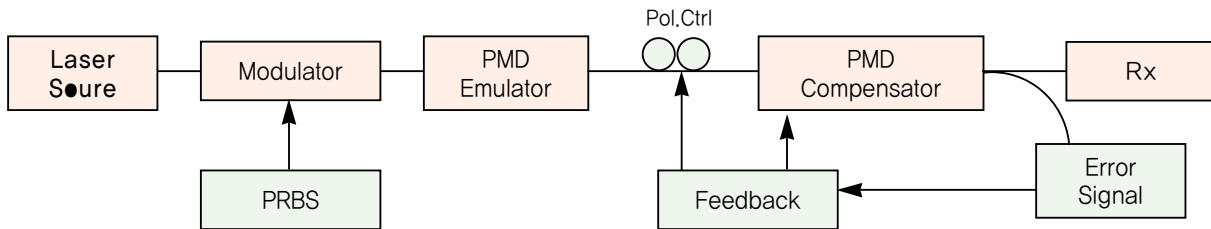
(b) DGD = 70 ps



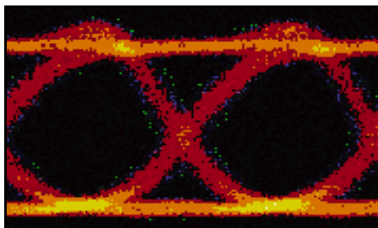
(c) DGD = 90 ps

[Fig.1] 10-Gb/s NRZ Eye diagram after PMD Emulator which emulated 1st – order PMD.

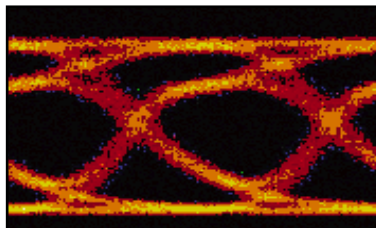
2. PMD Emulation for testing PMD Compensator / PMD Compensation Experiments



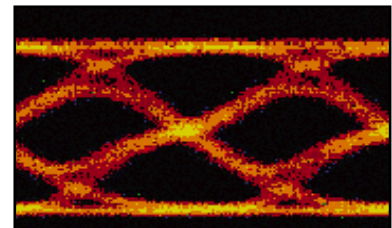
[Fig.2] Maxwellian-like distribution of probability density function of PMD. Mean value of its distribution means the statistical fiber similarity. And it is calculated by the simulation of 10,000 realizations(blue dot), Maxwellian fit(red line).



(a) Random 1



(b) Random 2



(c) Random 3

[Fig.3] 10-Gb/s NRZ Eye diagram after PMD Emulator which emulated Random PMD state with higher-order PMD.

Specification

Model	PE4100	PE4200
Functions	Maxwellian distribution of PMD	First-order PMD & Maxwellian distribution of PMD
Wavelength range	1520 ~ 1620 nm	
Insertion loss	< 3.0 dB	< 2.0 dB
IL variation when varying PMD	< ±0.4 dB	< ±0.2 dB
PDL	< 0.3 dB	< 0.3 dB
PMD range		0 ~ 100 ps ¹
PMD resolution		0.5 ~ 2.6 ps max. ²
Maxwellian distribution of PMD	~ 17.8 ps avg. ^{1,3}	~ 38 ps avg. ^{1,3}
Interface	Operating software by GPIB/RS232	
Switching speed	< 200 ms	
Optical Input / Output	FC/PC or FC/APC	
AC Input power	100 ~ 125V, 210 ~ 250V, 50Hz/60Hz	
Dimensions (W x H x D)	449 x 133 x 470 mm ³	210 x 82 x 470 mm ³

1. Other specify (Customization options)
2. For higher values of PMD, the resolution is large.
3. Its value means the statistical fiber similarity. And it is calculated by the simulation of 10,000 realizations.

The specifications and technical information contained herein are subject to change without notice and are furnished without charge or obligation. They are given and accepted at recipients sole risks.

Ordering Code

PE – (1) – (2)

1. Model → 4100 or 4200
2. Connector Type → F/P (FC/SPC), F/A (FC/APC)