New Ridge Technologies

PMD Source

NRT-12033X

- Stable, Deterministic & Repeatable PMD Generation
- For testing 10G and 40G DP-QPSK systems
- Compatible with Pol-Muxed and Coherent Receivers
- Set PMD States for DGD, Depolarization and PDCD
- Continuously Accessible 1st and 2nd-order PMD states
- Optional PMD Randomization Mode Operation
- Optional PMD Outage Calculator
- New smaller size and lighter weight design

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Like Fiber, Only Programmable and Repeatable

Using patented Coherent-PMD technology, the NRT-12033X programmable PMD source generates deterministic, stable and repeatable 1st, 2nd and higher-order PMD. The NRT-12033X employs a totally new optical architecture to increase the DGD range while maintaining a wide PMD spectrum. 10Gb/s transponders and 40 Gb/s DP-QPSK DSP equalizers, transponders and systems can be comprehensively characterized in a matter of hours with rapid, repeatable, quantitative and reliable PMD tolerance testing.

The NRT-12033X PMD source takes the guesswork out of specification and certification of mission-critical network systems.

Total PMD Characterization:

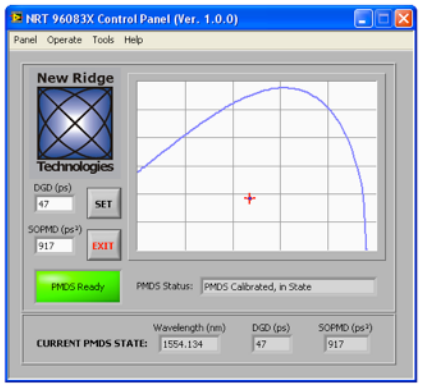
You know the route that your system is to be deployed on, and you know its PMD profile. But do you know if your system will work on the route?

Can you quantifyably prove it to your customer?

The NRT-12033X allows you to quantify your system performance with realistic PMD stress before the system is deployed. And unlike other statistical PMD emulation methods which are not repeatable and non-deterministic, or emulators that can only generate unrealistic wavelength-flat states of DGD and depolarization, only NRT's PMD source generate realistic and deterministic PMD for complete, efficient, reliable, repeatable and quantifiable PMD characterization.

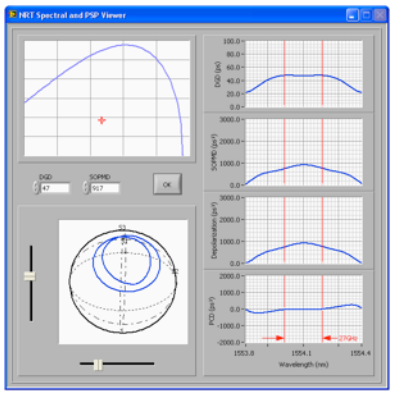
Applications:

1. Comparison between various signal modulation formats at different line speeds.
2. System Qualification and Certification.
3. Digital signal processor based equalizers and digital-CDR development.
4. Reliable PMD Source to Calibrate PMD-Measurement Equipment.
5. Network Deployment tool based on outage probability.



Main GUI for NRT-12033X: the cursor can be placed at any PMD state below the blue curve.

The NRT-12033X PMD Source is programable. The GUI allows you to set DGD and the Depolarization and Polarization Dependent Chromatic Dispersion components of SOPMD. With our improved interface you can select the 'coordinates' for any PMD state. The PMD spectrum is displayed in frequency and in Stoke space. Capture the spectrum you want, and load it into the instrument for testing.



Blue shows the DGD, SOPMD, Depolarization, PDCD & PSP spectra. A red 27 GHz wide band is shown for reference.

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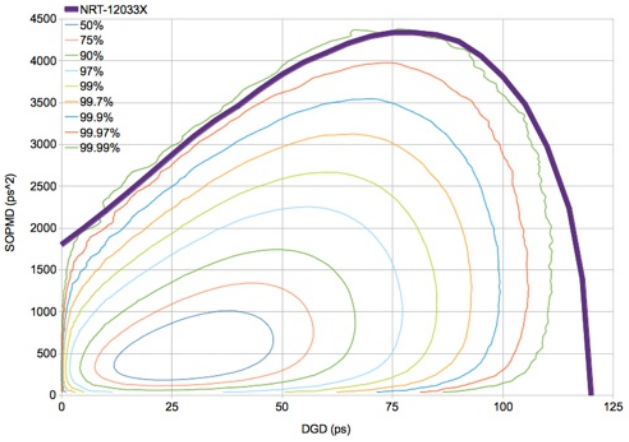
Cover more states for more transponder types



The NRT-12033X covers 99.99% of the states occurring in a 36 ps mean PMD fiber span. To the left, the joint probability density function of a 36 ps fiber is shown by the rainbow colored contours. The NRT-12033X can access all states below the dark blue curve, beyond the outmost contour. This wide DGD/SOPMD range, combined with the broad 33 GHz free spectral range enables the NRT-12033X to test, compare, design and deploy 10G/s and new generation 40G DP-QPSK transponders.

Other PMD Tolerance Testing Products from New Ridge:

1. **NRT-PMDR**, PMD Randomizer, turns any NRT PMD Source into a dynamic fiber emulator. Due to our patented coherent PMD generation technology the NRT-PMDR is also the only deterministic fiber emulator, enabling you to always know the state of the source to correlate with system bit errors. Furthermore, you can set the NRT-PMDR to emulate any mean fiber PMD level.
2. **NRT-OPC**, Outage Probability Calculator is an upgrade to our NRT-TOPC. This (post measurement) data analysis tool calculates the total outage probability for the measured transponder/system for any level of fiber PMD. Moreover, the NRT-OPC calculates the statistics for outage durations and time between outages.
3. **NRT-LVD**, LabView Drivers (and dlls) to automate the NRT Source into your PMD tolerance testbed
4. **NRT-JPDFC**, Joint Probability Density Function Calculator generates a topographical contour map of the PMD probability in 2-D PMD space, namely DGD vs. SOPMD (as shown in the figure above).
5. **NRT-2500** is a polarization control platform designed scrambling, randomizing, setting and especially for implementing very fast and very reliable polarization tracking applications. This product can be used to set or scramble the SOP input to the NRT PMD Source to dynamically change the PMD stress or after to verify your polarization demux.

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Specifications

NRT-12033X	Min	Typical	Max	Units
DGD range	0		120	ps
SOPMD range	0		4340	ps^2
Free Spectral Range		33.3		GHz
Wavelength range		C-band or L-band		
Insertion Loss		4.0 [2]		dB
PDL		0.4 [2]		dB
Return Loss		~35 [2]		dB
Optical Handling Power			13	dBm
Connector		FC/UPC [3]		
Operating Temperature	20		50	ºC
Dimensions (WxHxD)		18.54 x 4.04 x 14.29 (471 x 102.6 x 363)		inch (mm)
Weight		19.5 (8.9)		lb (kg)
Voltage input	100		250	Volts
PC connection		Ethernet, Serial		

1 Specifications are subject to change at the discretion of New Ridge Technologies, LLC
2 Determined by average across C-band
3 Other connector types are available.

Contact New Ridge Technologies, LLC for prices and availability: sales@newridgetech.com or +1-410-753-3055