

# CHROMATIC DISPERSION ANALYZER

## FTB-5800

NETWORK TESTING—OPTICAL



- Complete CD characterization
- Approved phase-shift method
- No communication between source and receiver
- Test through EDFAs

### Platform Compatibility

FTB-400 Universal Test System

## Characterize Chromatic Dispersion in the Field

The ongoing race to develop high-speed transmission systems and to increase available bandwidth is facing certain limitations. Chromatic dispersion (CD) measurements are becoming more and more critical for carriers and service providers looking to improve their systems by upgrading to 10 or 40 Gb/s (OC-192/STM-64 and OC-768/STM-256). EXFO's FTB-5800 CD Analyzer\* offers high performance in a field-ready unit for all chromatic dispersion testing situations.

### KEY FEATURES

- Suitable for all fiber types
- Rugged and ready for the field
- Intuitive software



FTB-5800 CD Analyzer

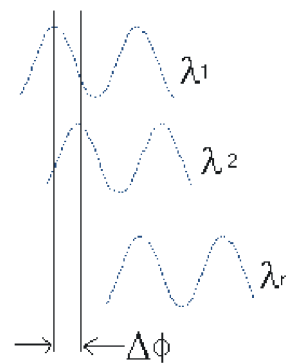
\*Protected by US patent 6,429,929 and foreign equivalents.

### CD AFFECTS SYSTEM PERFORMANCE

CD occurs because different wavelengths travel at slightly different speeds in optical fiber, resulting in elongated, and thus ineffective, light pulses. DWDM systems are particularly sensitive to CD. Too much CD results in cross-modulation and signal loss; however, a small, controlled amount of CD is needed to reduce unwanted non-linear phenomena, such as four-wave mixing.

### THE PHASE-SHIFT METHOD

The FTB-5800 uses the approved phase-shift method, which works as follows: To transmit a signal, modulated light is sent through the fiber. At the end of the fiber, different wavelengths have different phase shifts. The measurement of these different phase delays in the frequency domain relates to a delay in the time domain and, therefore, to CD.



Different wavelengths have different phase shifts.  
The measurement of these different phase delays relates to CD.

# Field-Proof Advanced Technology

## THE FTB-400 UTS ADVANTAGE

To survive knocks, bumps and drops, the FTB-5800 CD Analyzer is housed in the lightweight magnesium shell of the tough, splashproof FTB-400 Universal Test System. Combine up to seven single-slot, field-interchangeable modules in the powerful FTB-400 UTS for simultaneous support of multiple testing applications (PMD, OTDR and OLTS, among others). The FTB-400 provides a unique and advantageous testing environment. The FTB-5800 is a truly field-portable CD test set, so you no longer need to be in-house to perform accurate measurements. The CD analyzer operates in the FTB-400's PC environment, eliminating the need to bring a laptop in the field. The FTB-5800 is a four-slot module for the FTB-400 seven-slot platform. This means that in a single, rugged, battery-operated unit, both a CD and PMD analyzer can be housed and used simultaneously.

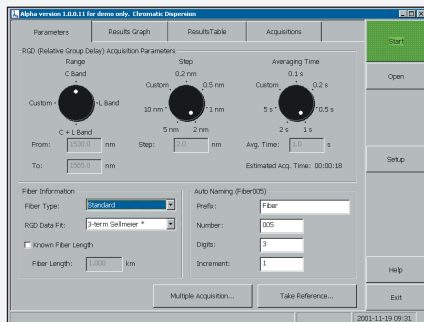
## THE NO-COMMUNICATION ADVANTAGE

Now you can test whole links instead of only sections, reducing manipulation, error and testing time. EXFO's patent-pending technology offers a truly unique advantage—no communication between the source and the receiver. Because filtering is done at the receiver end and not at the source, transmission through one-way devices such as isolators and EDFAs is possible. Tests have been performed through as many as 30 amplifiers.

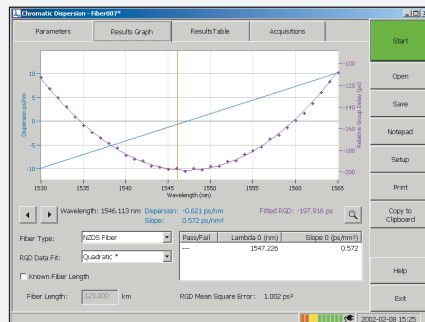
## UNIVERSAL RECEIVER

Equipped with a broadband detector, EXFO uses the same receiver for both C- and L-band testing. Although one band may be adequate for today's testing, EXFO makes it easy to handle possible future expansions. Should your testing needs change, you can simply purchase additional sources without having to purchase another receiver.

## POWERFUL SOFTWARE FEATURES AT THE TOUCH OF A BUTTON



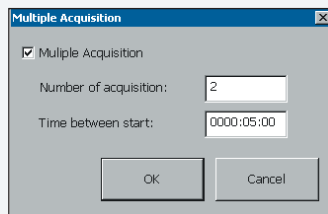
Simple test setup parameters for error-free testing.



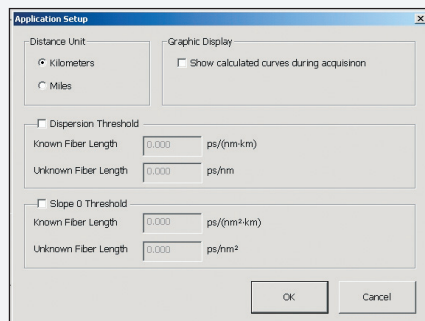
Large graphic display of both the dispersion and the relative group delay.

The screenshot shows the 'ResultsTable' tab. It contains a table with columns: 'Used', 'Pass/Fail', 'Wavelength (nm)', 'RGD (ps)', 'RGD Deviation (ps)', 'RGD Deviation (%)', and 'Dispersion (ps/nm)'. The table lists multiple data points with their corresponding values. A 'Start' button is on the right.

Personalized data management for clear, customized report creation.



Multiple measurement capabilities for testing over long time periods.



Threshold detection for dispersion and slope at  $\lambda_0$ .

## SPECIFICATIONS<sup>a</sup>

Model		FTB-5800		
Wavelength range (nm)		1530 to 1625 1200 to 1700 <sup>b</sup>		
Wavelength step (nm)	Minimum	0.1		
Measurement points	Maximum	950, user-definable		
Dynamic range <sup>c</sup> (dB)		42		
Wavelength uncertainty <sup>d</sup> (accuracy) (nm)		0.1		
Dispersion uncertainty <sup>d</sup> (accuracy) (ps/nm)	20 km of G.652	1.6		
	120 km of G.652	3.1		
	20 km of G.655	1.9 (guaranteed)		
Dispersion repeatability <sup>d</sup> (ps/nm)		20 km	80 km	120 km
Zero-dispersion wavelength $\lambda_0$ repeatability <sup>d</sup> (nm)		0.1	0.14	0.8
Dispersion slope repeatability $\lambda_0$ <sup>d</sup> (%)		0.03	0.05	0.25
Minimum fiber length (km)		< 1		
Maximum fiber length (km) <sup>e</sup>		> 5400		
Measurement time per point <sup>e</sup> (s)	Minimum	< 1		

### NOTES

- a. All specifications are typical with 4 seconds averaging time per point (where applicable), at a temperature of 23 °C ± 1 °C, with FC connectors and after warmup time.  
 b. Displayed range. Values may be extrapolated.  
 c. Dynamic range is defined as the difference between the strongest signal and the

weakest signal the receiver can detect. Extra averaging may be required. Uncertainty (accuracy) is not guaranteed at limits of range.

d. C+L band.

e. Including EDFAs.

f. Additional gain setting time may be required prior to the first point of each band.

## GENERAL SPECIFICATIONS

Size (H x W x D) (module)	9.6 cm x 10 cm x 26 cm	(3 3/4 in x 3 15/16 in x 10 1/4 in)
Weight (module)	2 kg	(4.5 lb)

## ORDERING INFORMATION

### CD ANALYZER

#### FTB-5800-XX

##### Connector

- |                               |                               |
|-------------------------------|-------------------------------|
| EI-EUI-28 = UPC/DIN 47256     | EA-EUI-28 = APC/DIN 47256     |
| EI-EUI-76 = UPC/HMS-10/AG     | EA-EUI-89 = APC/FC narrow key |
| EI-EUI-89 = UPC/FC narrow key | EA-EUI-91 = APC/SC            |
| EI-EUI-90 = UPC/ST            | EA-EUI-95 = APC/E-2000        |
| EI-EUI-91 = UPC/SC            |                               |
| EI-EUI-95 = UPC/E-2000        |                               |

Example: FTB-5800-EI-EUI-89

### CD/PMD ANALYZER SOURCE

#### FLS-58XX-XX


##### Model

- FLS-5803 = Modulated 1550 nm SuperLED  
 FLS-5804 = Modulated 1625 nm SuperLED  
 FLS-5834 = Modulated 1550 nm  
 and 1625 nm SuperLEDs

Example: FLS-5834-EI-EUI-89


### SAFETY

THIS PRODUCT COMPLIES WITH  
 IEC 60825-01: 1993 + A2: 2001  
 CLASS 1M LED PRODUCT



**Rugged Handheld Solutions**

<b>OPTICAL</b>	<b>COPPER ACCESS</b>
- OTDRs	- ADSL/ADSL2+, SHDSL, VDSL test sets
- OLTSs	- VoIP and IPTV test sets
- Power meters	- Ethernet test sets
- Light sources	- POTS test sets
- Talk sets	



**Platform-Based Solutions**

<b>OPTICAL FIBER</b>	<b>DWDM TEST SYSTEMS</b>	<b>TRANSPORT AND DATA COM</b>
- OTDRs	- OSAs	- Next Generation SONET/SDH and OTN testers
- OLTSs	- PMD analyzers	- SONET/DSn (DS0 to OC-192) testers
- ORL meters	- Chromatic dispersion analyzer	- SDH/PDH (64 kb/s to STM-64) testers
- Variable attenuators		- T1/T3, E1 testers
		- 10/100M and Gigabit Ethernet testers
		- Fibre Channel testers
		- 10 Gigabit Ethernet testers