

# Chromatic Dispersion Analyzer

FTB-5800



Complete CD characterization

Approved Phase-Shift Method

No communication between source and receiver

Test through EDFAs



Fiber-optic T&M,  
monitoring, manufacturing  
and assembly solutions

**EXFO**

# 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.



FTB-5800 CD Analyzer

## Key Features

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

## CD Affects System Performance

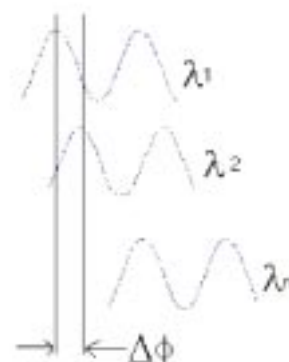
CD occurs because different wavelengths travel at slightly different speeds in optical fiber, resulting in elongated, and thus ineffective, light pulses.

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

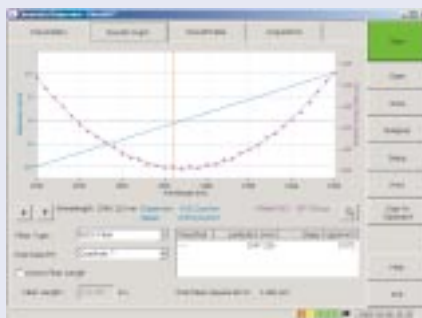
Equipped with a broadband detector, EXFO uses the same receiver for both C- and L-band testing. Although one band may be adequate for today's testing, EXFO makes it easy to handle possible future expansions. Should your testing needs change, you can simply purchase additional sources without having to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

## Powerful Software Features...

## at the Touch of a Button



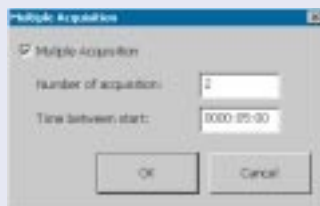
Simple test setup parameters for error-free testing.



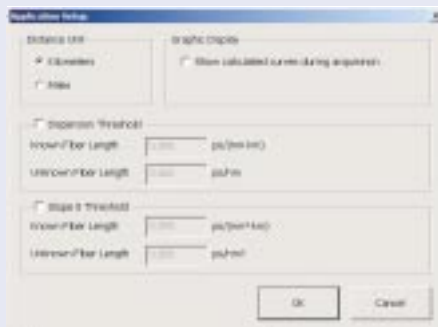
Large graphic display of both the dispersion and the relative group delay.

 A screenshot of the software's data management window. It displays a table with multiple columns of test data, including wavelength, dispersion, and group delay. The table is scrollable and includes options for filtering and saving data for report generation.

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>1</sup>

Model	<b>FTB-5800</b>		
Wavelength range (nm)	1530 to 1625 1200 to 1700 <sup>2</sup>		
Wavelength step (nm)	Minimum	0.1	
Measurement points	Maximum	950, user-definable	
Dynamic range <sup>3</sup> (dB)	42		
Wavelength uncertainty <sup>4</sup> (accuracy) (nm)	0.1		
Dispersion uncertainty <sup>4</sup> (accuracy) (ps/nm)	20 km of G.652	1.6	
	120 km of G.652	3.1	
	20 km of NZDSF	1.9 (guaranteed)	
	<b>20 km of G.652</b>	<b>80 km of G.652</b>	<b>120 km of G.652</b>
Dispersion repeatability <sup>4</sup> (ps/nm)	0.04	0.2	1.1
Zero-dispersion wavelength $\lambda_0$ repeatability <sup>4</sup> (nm)	0.1	0.14	0.8
Dispersion slope repeatability $\lambda_0$ (%)	0.03	0.05	0.25
Minimum fiber length (km)	<1		
Measurement time per point <sup>5</sup> (s)	Minimum	<1	

## Notes

1. All specifications are typical with 4 seconds averaging time per point (where applicable), at a temperature of 23 °C ± 1 °C, with APC connectors and after warmup time

2. Displayed range. Values may be extrapolated.

3. C-band source peak. 40 dB at L-band.

4. C+L-band.

5. 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

### Universal CD Analyzer

**FTB-5800-XX**

EI = UPC Universal interface  
EA = APC Universal interface

The fixed baseplate, must be ordered with a removable universal connector adapter (EUI-XX). Please specify one EUI from the following list:

EUI-28 = DIN 47256      EUI-90 = ST (EI only)  
EUI-76 = HMS-10/AG (EI only)      EUI-91 = SC  
EUI-89 = FC      EUI-95 = E-2000

### CD/PMD Analyzer Source

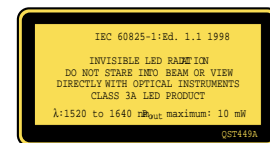
**FLS-58XX-XX**

03 = Modulated 1550 nm SuperLED  
04 = Modulated 1625 nm SuperLED  
34 = Modulated 1550 nm and 1625 nm SuperLEDs



EI = UPC Universal interface  
EA = APC Universal interface

## Safety

This product complies with IEC 60825-01: Ed. 1.1 1998 Class 3A LED Product



Find out more about EXFO's extensive line of high-performance portable instruments by visiting our Web site at [www.exfo.com](http://www.exfo.com)

 <p><b>Rugged Handheld Solutions</b></p> <ul style="list-style-type: none"> <li>• OLTS</li> <li>• Power Meter</li> <li>• Light Source</li> <li>• Talk Set</li> </ul>	 <p><b>UNIVERSAL TEST SYSTEM</b></p> <ul style="list-style-type: none"> <li>• OTDR</li> <li>• OLTS</li> <li>• ORL</li> <li>• Switch</li> </ul>	<p><b>Optical Fiber</b></p> <ul style="list-style-type: none"> <li>• OSA</li> <li>• PMD</li> <li>• Chromatic Dispersion Analyzer</li> <li>• Multiwavelength Meter</li> </ul>	<p><b>DWDM Test Systems</b></p> <ul style="list-style-type: none"> <li>• 10/100 and Gigabit Ethernet</li> <li>• SONET/SDH (DSO to OC-192c)</li> <li>• SDH/PDH (64 Kb/s to STM-64c)</li> </ul>	<p><b>Protocol</b></p>
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