

MTS/T-BERD Platforms

Chromatic Dispersion Module



Key Features

- Fixed installable single slot plug-in module
- Pulse delay method complies with TIA/EIA FOTP-168
- Fast, single-end measurement with sectional analysis capability
- CD analyzer and four-wavelength OTDR (1310/1480/1550/1625 nm)
- Full fiber tests performed in only 45 seconds
- Test requires operator only at one end of link

Advanced optical module for the chromatic dispersion analysis

The combination of an MTS/T-BERD platform and a CD analyzer offers a lightweight, handheld and rugged field instrument suitable for any CD measurement situations.

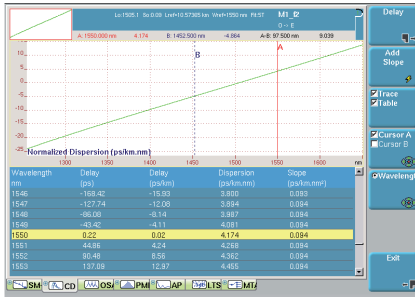
Rugged reliable field solution

Housed in a rugged, weatherproof MTS/T-BERD platform, the CD analyzer is completely shock-proof (drop tested as standard) with no moving parts as well as having a long battery life allowing 6 hours continuous use in the field.

Fast testing times and accurate results

With the CD analyzer, the MTS/T-BERD platforms can perform full chromatic dispersion tests in only 45 seconds. Testing time is further expedited because test functions are sequenced automatically through test scripts and results stored without operator action. This eliminates mistakes from improper manipulation of functions or missed operations.

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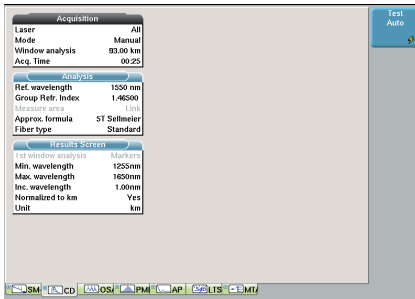
Single menu for Chromatic Dispersion trace and table display

Full-band metro network coverage

In one operation, the CD analyzer quickly and easily collects comprehensive data, performing a full 1255 to 1650 nm band fiber characterization at an optimized dynamic range of 35 dB. This eliminates the need to make further CD measurements if network wavelengths are expanded at a later date.

Multiple measurement capability

With an option of four continuous wave (CW) lasers that can measure 1310, 1480, 1550 and 1625 nm fibers, the CD unit serves as a CD test instrument, an optical time domain reflectometer (OTDR), and CW source for insertion loss when combined with the MTS/T-BERD platform's power meter.



Easy to configure with "Test Auto" function

One-button testing

At the press of the start key, link length, delay, CD coefficient, and slope are automatically measured. This one-button testing capability means that novice as well as expert technicians can conduct CD testing without training.

Large-band coverage

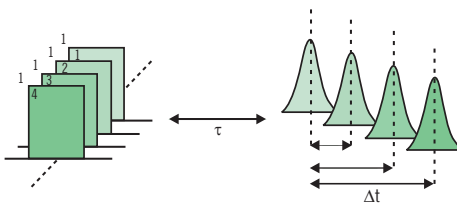
Due to its large band coverage, the CD analyzer plug-in performs CD characterization of new fibers without peak around 1400 nm, making it the ideal tool for G.625, G.655 and G.653.

Sectional analysis

The CD analyzer allows link dispersion analysis measuring intermediate connection. This capability can be used for further investigation to locate problems without moving the tester.

The pulse delay method

Measurement of time difference (time delay) between the various wavelengths at the end of the link. Chromatic dispersion is calculated using Sellmeier Approximation Equation that are based on the type of fiber under test.



ID Cable	ID Fiber	Wavelength	Average	1: D ₁	2: E ₁	3: D ₂	4: E ₂	5: D ₃	6: E ₃		
HC-1	1	1310	0.023	0.256	-0.041	0.107	0.013	0.018	0.015	0.056	-0.003
HC-2	2	1310	0.021	0.285	0.028	0.157	0.019	0.012	0.015	0.030	0.029
HC-3	3	1310	0.027	0.331	-0.012	0.109	0.010	0.010	0.010	-0.010	0.020
HC-4	4	1310	0.031	0.305	-0.059	0.153	0.018	0.012	0.025	-0.026	0.188
HC-5	5	1310	0.023	0.184	0.110	0.143	0.046	0.050	0.049	0.171	-0.125
HC-6	6	1310	0.040	0.376	-0.137	0.110	0.007	0.020	0.041	-0.041	0.071
HC-7	7	1310	0.021	0.137	-0.010	0.063	0.007	0.018	0.012	0.073	-0.038
HC-8	8	1310	0.026	0.473	-0.004	0.234	-0.010	-0.003	-0.007	-0.001	0.106
HC-9	9	1310	0.015	0.238	-0.010	0.112	0.013	0.013	0.013	0.048	0.020
HC-10	10	1310	0.023	0.468	0.038	0.346	0.016	0.011	0.010	0.004	0.025
HC-11	11	1310	0.031	0.384	0.121	0.252	0.043	0.040	0.041	0.071	-0.031
HC-12	12	1310	0.028	0.372	-0.050	0.141	0.005	0.059	0.062	-0.001	0.082
HC-13	13	1310	0.020	0.317	0.012	0.170	0.005	0.079	0.002	-0.004	0.071
HC-14	14	1310	0.023	0.372	0.101	0.227	0.009	0.016	0.012	0.035	0.004
HC-15	15	1310	0.023	0.350	0.149	0.359	-0.009	0.006	-0.001	-0.003	0.047
HC-16	16	1310	0.026	0.400	-0.025	0.147	0.018	0.016	0.017	-0.015	0.078

Example of cable report

Error-free professional report generation

A complete PC-based software application within a Microsoft Windows environment offers detailed generation of professional chromatic dispersion reports.

- Proof-of-performance reports with a high degree of customization capabilities
- Out-of-range value summaries
- Complete fiber characterization reports, including OTDR, CD, PMD, and spectral attenuation



8000 platform

Enhanced testing solution

With the scalable design of the MTS/T-BERD platforms, field technicians can quickly and easily plug-in the appropriate test module to perform precise measurement from the outside plant to the central office. The optical test platforms offer a full range of fiber characterization test modules with OTDR, CD, and spectral attenuation measurement, as well as DWDM testing capabilities.

The CD test module can be combined with additional measurement capabilities in JDSU's optical test platforms so that technicians can fully characterize the fiber network with an all-in-one solution:

- Optical insertion loss
- Optical return loss
- OTDR
- Chromatic dispersion
- Polarization mode dispersion
- Spectral attenuation profile



6000 platform

Technical specifications
8183 Chromatic Dispersion plug-in
OTDR mode

Central wavelength	1310/1480/1550/1625 nm
Wavelength accuracy ⁽¹⁾	± 5 nm
RMS dynamic range ⁽²⁾	39/38/37/37 dB
Event dead zone ⁽³⁾	6 m max.
Attenuation dead zone ⁽⁴⁾	30 m

Chromatic dispersion mode

Wavelength range	1255 to 1650 nm
Dynamic range	Up to 120 km
Wavelength absolute accuracy	± 0.1 nm
Dispersion range	0.1 ps/nm*km to 100 ps/nm*km
Zero dispersion wavelength repeatability	± 0.5 nm*
Dispersion coefficient repeatability**	± 0.2 ps/nm*km
Dispersion slope repeatability**	± 1%
Measurement time	From 40 s

Optical source mode

Wavelength range	typical 1310/1480/1550/ 1625 nm ± 5 nm
Spectral width	<10 pm
Power stability in 24 hours	± 0.1 dB
Calibrated output power	1.5/3/3/3 dBm
Variable output power	-10 dB to calibrated power

(1) DFB lasers

(2) RMS dynamic range: The one way difference between the extrapolated backscattering level at the start of the fiber and the RMS noise level, after 3 minutes averaging

(3) Event dead zone: Measured at ± 1.5 dB down from the peak of an unsaturated reflective event

(4) Attenuation dead zone: Measured at ± 0.5 dB from the linear regression using a FC/PC type reflectance

* For 25 km G.655 link

** For a 75 km G.625 link, at 1550 nm

Ordering information
Chromatic Dispersion module

E5083CD	Medium range 1310/1480/1550/1625 nm OTDR/CD module
E508XLS	1310/1480/1550/1625 nm DFB sources option

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