FX180X
Optical Channel Checker

Compact Channel Checker Verifying CWDM or DWDM Channels and Power

Simultaneously test all 18 CWDM channels or 96 DWDM channels C14 to 62 in a single test. This compact, robust tester measures individual channel peak wavelength/ frequency and power. An optional fiberscope is also available to inspect connectors.

Platform Highlights

- Robust, handheld design for field environments
- High resolution, 5” TFT color touch-screen for easy viewing
- Fast boot-up time
- Basic function keys and touch-screen for easy operation and fast testing
- Internal data storage with 8G memory
- Micro-USB OTG interface for flash drives, fiber inspection probe connection and test data transfer
- Rechargeable Lithium Polymer battery with capacity indicator, low voltage alarm and Auto-off function
- > 9 hours continuous operation without recharging batteries
- Optional Built-in WiFi option to perform software upgrades
- Optional Built-in Bluetooth option for pairing mobile devices
- Optional OTG to Ethernet for network connection

Key Features

- Easy operation
- Fast bootup time, 30 seconds
- Fast <3 seconds measurement time
- DWDM ITU-T G.694.1 Channels 14-62 or CWDM ITU-T G.694.2 from 1271 to 1611 nm
- Bar Graph or Table View modes
- Supports DWDM channel grid down to 50 GHz
- Ideal for Remote PHY Deployments
- Active Channel Pass/Fail detection
- Pass/Fail Level threshold
- A/B channel markers
- Built-in wavelength reference
- Continuous Testing
- Generate and save test results in HTML file format
- High wavelength accuracy
- Dynamic Measurement range: ≥65 dB
- Low Polarization Dependent Loss (PDL)

Applications

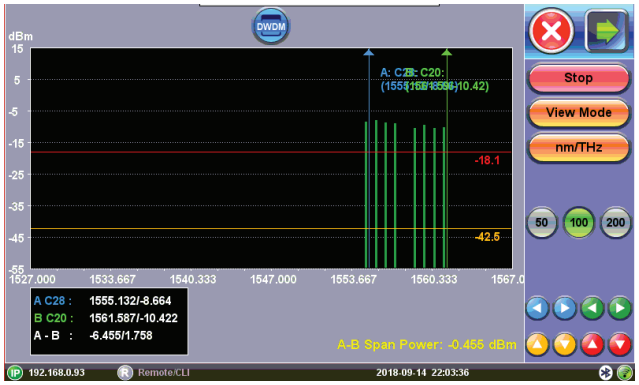
The FX180X channel checker is a rugged, handheld, easy-touse measurement tool for CWDM or DWDM fiber networks. The test set will simultaneously display all channels results using vertical bars or in a table format within 3 seconds.

CWDM and DWDM Technology

DWDM technology is is used by cable operators deploying Remote PHY networks or for long-haul transmission systems. The FX180X designed to measure either ITU-T G.694.1 wavelengths ranging from 1527 to 1567 nm with channel plans using 50 GHz, 100 GHz or 200 GHz grid or ITU-T G.694.2 CWDM to verify signal levels are acceptable and no routing issues exist.

Bar Graph

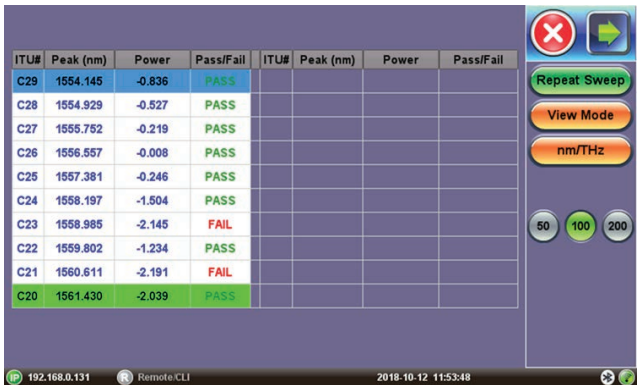
The bars are color coded to indicate pass or fail. The two markers allow you to quickly and easily obtain channel details as well as compare one channel against another.



Toggle Channel units between wavelength or frequency. An active channel threshold is available to allow users to control which channels to display in the table.

Table View

Test results are summarized in terms of ITU-T channel, channel peak wavelength or frequency, signal level and color coded to indicate failures in red.



HTML Test Report

Save test results using auto or custom filename in HTML file format.

Fiberscope Option

An optional Fiber microscope can be used to assess the cleanliness of the optical connector's surface and is perfectly suited for bulkhead adapter or male connector inspection. The probe connects directly to the unit's micro-USB OTG port to obtain its power and to transfer images. Single finger focusing with an automatic image focus and capture feature simplifies operation.

The probe features inter-changeable heads and is supplied with bulkhead adapter tips for FC/PC, SC/PC, and LC/PC connector style, including male connector adapters.

Software for viewing connector end-face images which have been transferred and saved on a Windows® PC is available as an option.

Optional software automatically captures the focused image and analyzes the connector condition and provides a report with Pass/Fail criteria according to the IEC 61300-3-35 Sect 5.4 standard.

Simple Software Upgrades

Firmware upgrades are performed easily via the micro USB port connected via an OTG to a USB memory stick. Updates are available at no charge for registered users.

Extended Battery Operation

The micro OSA provides over 9 hours of operation on a single charge. A low voltage indicator warns the user when the device power reaches critical levels.

Optical Specifications[1,4]

Parameters	Unit	CWDM	DWDM C Band
Operational Wavelength Range	nm	1260-1650	1527.994 - 1566.314
Number of Channels	#	up to 18	up to 96
Channel Spacing	GHz/nm	20 nm	50 GHz
Input Power Range[3]	dBm	-50 to +15	
Maximum Input Power	dBm	30	
Absolute Wavelength Accuracy[3]	pm	±500	±75
Wavelength Repeatability[3]	pm	±100	±15
Absolute Channel Power Accuracy[3,4]	dB	±1.0	±0.5
Relative Power Accuracy[3,4]	dB	±0.8	±0.4
Power Measurement Repeatability[3]	dB	±0.1	
Polarization Dependent Loss (PDL)	dB	<0.5	<0.3
Noise Floor[6]	dBm	-55	
Wavelength Readout	pm	1	
Optical Return Loss	dB	>30	
Sweep Time	sec	<3	
Optical Interface		Fixed or Universal base with interchangeable adapters	

Notes:

1. Unless noted, all specifications are valid at 23°C ± 2°C (73.4°F ± 3.6°F) using FC/UPC connectors.
2. Detect 18 CWDM channels 1271 - 1611nm
3. Specifications guaranteed for input power range from -40 to -0 dBm.
4. Does not include PDL.
5. Signal Conditions:
   a. Channel spacing: DWDM ≥ 42 GHz; CWDM ≥ 15nm
   b. Power difference between adjacent channels ≤ 6dB
   c. Power difference between non-adjacent channels ≤ 12dB
6. Electronic noise (no injected light)

General Specifications

Dimensions	150 x 150 x 70 mm
Weight	0.7 kg nominal
Battery	Lithium Polymer battery, 10 Ah with low voltage indication
Battery Autonomy	>9 hours continuous operation
Power Usage	<2 Watts
Operating Temperature	0˚C to 50˚C (32˚F to 122˚F)
Storage Temperature	-40˚C to 60˚C (-40˚F to 140˚F)
Humidity	5% to 80%, non-condensing
Display	5” high resolution TFT color touchscreen LCD
Interfaces	Micro-USB with On The Go (OTG) support
AC Adaptor	Input: 100-240 VAC (50/60 Hz), 1.5A max Output: 12 VDC
Memory	Internal 8 Gbyte micro SD card
Connectivity	WiFi 802.11 b/g/n (optional), Bluetooth (optional)
Languages	English (others available on demand)
Certifications	CE & ROHS compliant
Safety Standards	AC adaptor - IEC 61010-1, Class II (GOST 12.2.091)

Ordering Information

Handheld Optical Channel Analyzer Models
Description
CWDM Channel Checker
DWDM C Band C14-62 Channel Checker

Additional Options
Bluetooth + WiFi Option
Fiber Scope Option
OTG to Ethernet cable option

VeEX
The Verification Experts

CE

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