

# FX182

CWDM, DWDM (C&L Band)  
Optical Channel Checker



## Compact, Rugged Optical Channel Checker to Test xWDM Fiber Networks

The FX182 is the industry's first compact Channel Checker to measure both CWDM and DWDM (C&L) band channels in less than 3 seconds. Innovative color-coded display identifies frequency, signal level, pass/fail and marginal channels at a glance\*.

## Platform Highlights

- Robust, handheld design for field environments
- High resolution, 5" TFT color touch-screen for easy viewing
- Fast boot-up time, in less than 30 seconds
- Internal data storage with 16G 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
- Generate and save test results in HTML file format
- Optional built-in WiFi/Bluetooth option
- Built-in web browser for remote control access
- Optional OTG to Ethernet for network connection

## Key Features

- Fast <3 seconds measurement time
- DWDM 100 GHz ITU-T G.694.1 C & L-Bands (1520nm to 1610nm)
- CWDM ITU-T G.694.2 from 1271 to 1611 nm
- 3 View Modes: Tiles\*, graph, and table view
- Measurement range: ≤65 dB
- Active channel Pass/Fail detection
- Programmable Pass/Fail Level threshold
- Programmable channel tables
- Built-in wavelength reference
- Continuous scanning of all channels

\*Patent Pending

## Applications

The FX182 channel checker is a rugged, handheld, easy-to-use measurement tool for applications that utilize WDM technology. The test set can simultaneously display all channels results in a tile, bar, or table format within 3 seconds.

### xWDM Technology

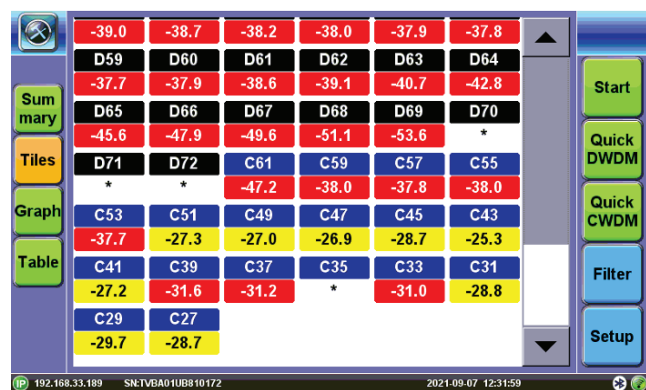
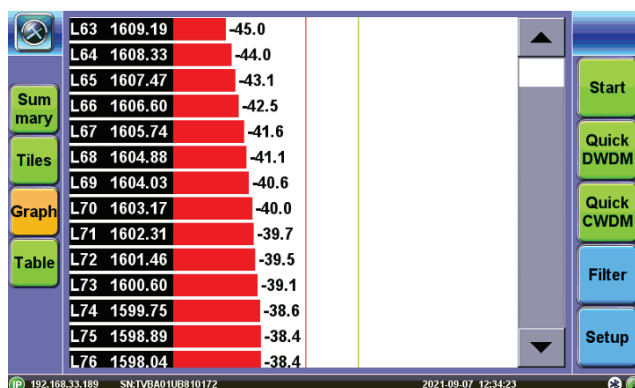
xWDM technology is used by service providers for deploying Metro Rings, Remote PHY networks, long-haul transmission and RAN systems. The FX182 is designed to measure both 100GHz DWDM channels in C and L-band per ITU-T G.694.1 and CWDM channels with wavelengths from 1270 to 1610 nm per ITU-T G.694.2 to verify signal levels are acceptable and no cable routing issues exist.

### Tiles

The tiles are color coded to indicate pass, fail or marginal. Each individual tile represents a channel with its signal level. Tapping on a tile will display Power Meter results for that specific channel.

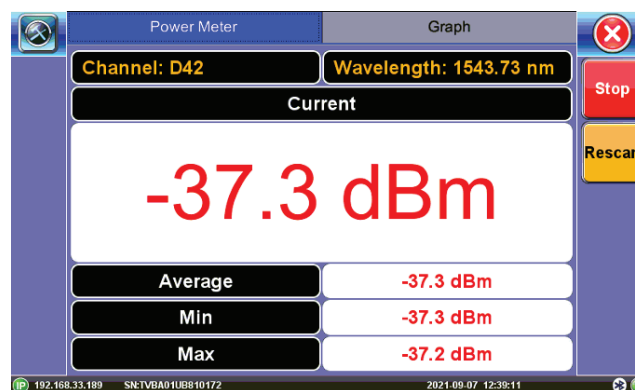
### Bar Graph

The bars are color coded to indicate pass or fail. Red indicates failure, yellow indicates marginal power, and green indicates pass. The two threshold lines on the graph are also color coded to make it easy to view all channels relative to both thresholds.



### Quick DWDM/Quick CWDM

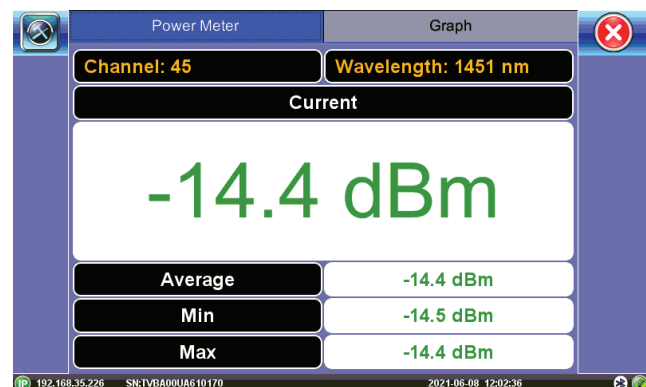
Quick DWDM or Quick CWDM allows users to quickly and automatically view the channel with the highest power for either CWDM or DWDM using the Power Meter view. To get back to the other channels or results, stop the Quick testing first.



The power meter displays the current channel as well as the peak wavelength of that channel. It monitors the maximum and minimum composite power of that channel and takes the average of the power level and displays it in the center.

### Table View

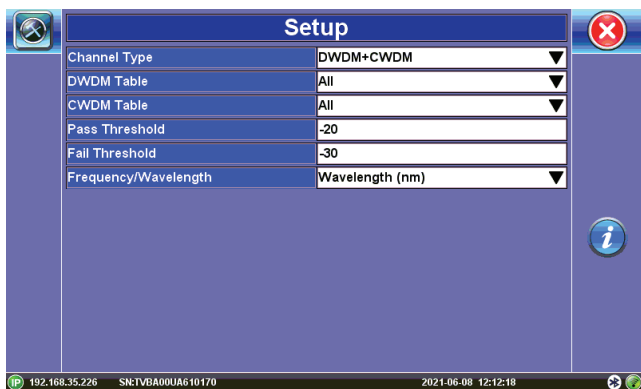
Test results are summarized in terms of ITU-T channel, channel peak wavelength or frequency, and integrated signal level.



Channel	Wavelength (nm)	Level (dBm)	Verdict
L63	1609.19	-50.7	Failed
L64	1608.33	-50.1	Failed
L65	1607.47	-51.5	Failed
L66	1606.60	-51.7	Failed
L67	1605.74	-50.9	Failed
L68	1604.88	-51.0	Failed
L69	1604.03	-50.5	Failed
L70	1603.17	-50.7	Failed
L71	1602.31	-50.3	Failed
L72	1601.46	-50.7	Failed
L73	1600.60	-49.8	Failed
L74	1599.75	-49.7	Failed
L75	1598.89	-49.5	Failed

### Set Up

To set up, choose between CWDM, DWDM or both channel types. You may use the default pass/fail level threshold, or you may reprogram it according to what you need.



### HTML Test Report

Save measurement results by pressing SAVE button. Results can be saved using auto or custom filename in HTML file format which can be exported to USB, downloaded via web browser or uploaded to R-Server.

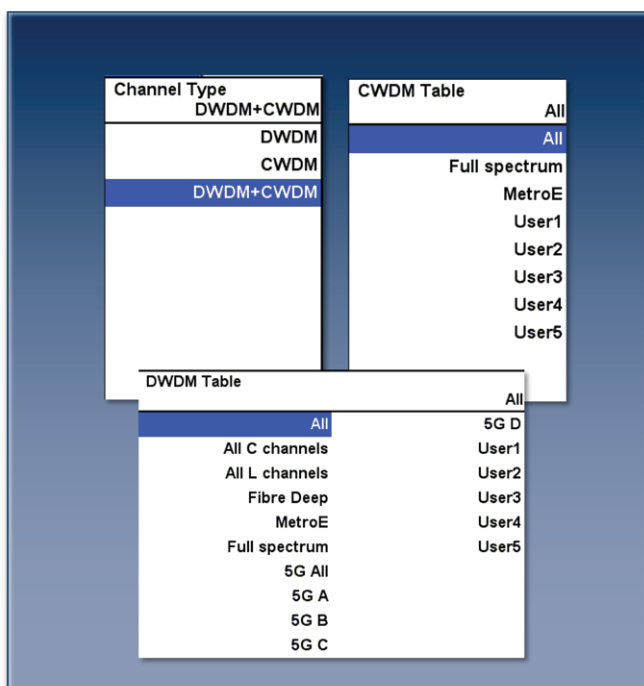


### Simple Software Upgrades

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.

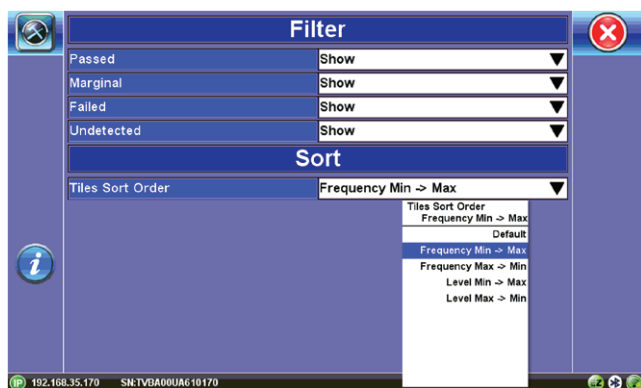
### Extended Battery Operation

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.



### Filter

In order to filter your results, toggle between “show” and “hide” for pass, fail, marginal, or undetected channels. You may also sort your results according to each channels frequency or power level, i.e. frequency max --> frequency min.



## Platform Features & Tool Options

### 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.



### OTDR Viewer

Built-in OTDR Viewer and Client application provides full post-analysis of SOR traces, as well as control of OPX-BOX OTDR via direct USB connection or Bluetooth®.

- Traces and Events table view
- Loss calculations
- V-Scout Link Mapper option
- Compatible with Fiberizer Cloud (upload and download)
- Controls external OPX-BOXe OTDR

### OPX-BOXe OTDR Control

The VeEX OPX-BOXe is an ultra-compact OTDR that can be controlled by the test set using Bluetooth® or USB connection. Once paired or connected to the micro OTDR, the test set displays a virtual OTDR user interface that is used to control the OPX-BOXe and perform measurements. Since fibers are common place in access, metro and transport networks, having a companion add-

on OTDR reduces truck rolls since there is less dependence to call on specialized fiber construction crews to verify or troubleshoot fiber related problems.

### VeSion® R-Server™ Client

Part of VeEX's VeSion centralized monitoring and management solutions, the R-Server Workflow and Asset Management system provides crucial tools to manage fleets of technicians, test equipment, standardized test profiles, thresholds, centralized test results collection, reporting, jobs/ticketing, and software update delivery to create coordinated and efficient disciplined workforce and test procedures. R-Server enhances the workflow to achieve the level of quality and repeatability required by telecommunications service providers, MSOs and their contractors. The flexible R-Server can be deployed in cloud, hosted, and corporate networks, on physical or virtualized servers.

Makes the job simpler for field technicians as they can download test profiles and upload test results. Supervisors can preset and upload test parameters which are provided to the test sets as profiles. Technicians can simply download profiles, run tests, and upload results to a centralized system that stores and secures the data.

### Remote Access

The test set offers multiple ways to Remote Control it or access the information remotely (e.g. test results, test profiles, etc.). The test set can be reached via:

- Web browser (Web Remote Control)
- EZ Remote
- VNC® Client
- Connectivity: Optional 10/100Base-T, WiFi 802.11 a/b/g/n/ac

### EZ Remote

The EZ Remote functionality allows users to quickly connect to VeEX test sets all over the world, without the need for VPN, port forwarding or public IP addresses. This VeEX hosted cloud service takes care of all the complex tasks required, and presents users with a simple application. Connect online anytime, anywhere, with any computer, tablet, or smartphone, using standard web browsers for screen-sharing, remote control and access to test results. Use it for remote control, collaboration, technical support or training purposes.

- Remote Control functionality gives users full control of remote test sets (screen mirroring and control)
- Remote Access functionality allows users to View, Download, Rename, Delete, Convert to PDF the test results
- No VPN required
- Works through firewalls, no ports to open
- Web browser based
- Multi-platform support
- No software to install
- Service included with test set (no extra charge)

## Optical Specifications<sup>1,4</sup>

Parameters	Unit	CWDM	DWDM C&L Band
Operational Wavelength Range	nm	1260 to 1620 <sup>1</sup>	1520 to 1610
Channel Spacing	-	20 nm	100 GHz
Input Power Range <sup>2</sup>	dBm	-50 to +15	
Maximum Input Power	dBm	+30	
Calibrated Wavelengths/ CWDM/DWDM Grid	-	ITU-T G.694.2	ITU-T G.694.1
Absolute Power Accuracy <sup>2,3</sup>	dB	±1.0	±0.8
Relative Power Accuracy <sup>2,3</sup>	dB	±0.8	±0.6
Power Repeatability <sup>2,3</sup>	dB	± 0.1	±0.1
Polarization Dependent Loss	dB	<0.7	<0.5
Noise Floor <sup>4</sup>	dBm	-55	
Optical Return Loss	dB	>30	
Response Time	sec	<3.0	

### Notes

- Support 18 CWDM channels from 1271 nm to 1611 nm.
- Specs guarantee for input power range only from -40 ~ 0 dBm.
- Do not include PDL.
- Electronic noise (without light input).
- Signal conditions:
  - CWDM channel spacing ≥15 nm. C&L band DWDM channel spacing >85 GHz.
  - Power difference between two adjacent channels ≤5 dB.
  - Power difference between two non-adjacent channels ≤10 dB.

## General Specifications

Dimensions	150 x 150 x 70 mm (5.9 x 5.9 x 2.75)
Weight	1.18 kg (2.60 lbs) including battery
Battery	Lithium Polymer battery, 10 Ah with low voltage indication
Battery Autonomy	>9 hours continuous operation
Power Usage	<4 Watts
Operating Temperature	-5°C to 50°C (23°F to 122°F)
Storage Temperature	-40°C to 60°C (-40°F to 140°F)
Humidity	5% to 85%, 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 16 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	
PN	Description
	CWDM and 100 GHz DWDM C&L Band Channel Checker
Additional Options	
Bluetooth + WiFi Option	
Fiber Scope Option	
OTG to Ethernet cable option	



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