

# FX182

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



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

The rugged, compact FX182 is the industry's most versatile Channel Checker with the ability to measure multiple channels traveling on a single fiber from O to L-band, 186.09 THz to 235.87 THz. Custom test profiles facilitates optimizing OCC to meet specific test applications such as xWDM, 100GHz DWDM, CWDM, transceivers, or PON.

## 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 16G total data storage
- 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

## Applications

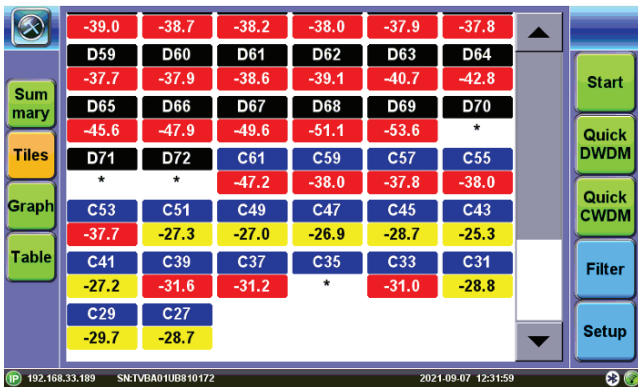
The FX182 channel checker is a rugged, handheld, easy-to-use measurement tool for applications that utilize WDM technology. The test set can simultaneously display all channels results in a tile, bar, or table format within 3 seconds.

### xWDM Technology

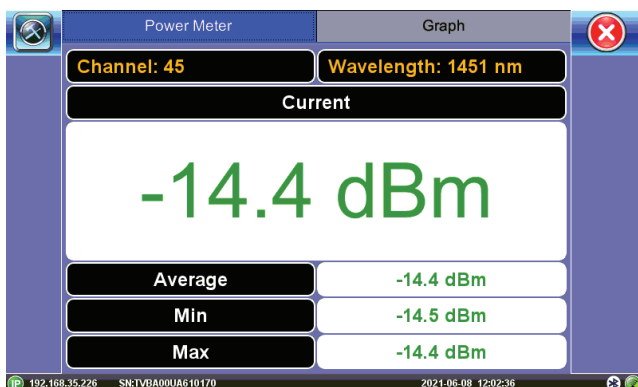
xWDM technology is used by service providers for deploying Metro Rings, Remote PHY networks, long-haul transmission and RAN systems. The FX182 is designed to measure both 100GHz DWDM channels in C and L-band per ITU-T G.694.1 and CWDM channels with wavelengths from 1270 to 1610 nm per ITU-T G.694.2 to 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.

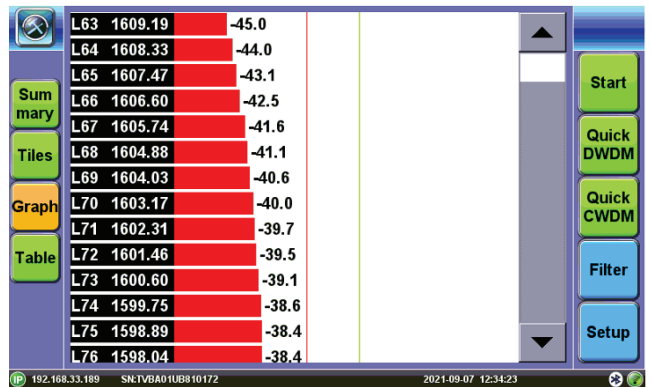


The power meter displays the current channel as well as the peak wavelength of that channel. It monitors the maximum and minimum composite power of that channel and takes the average of the power level and displays it in the center.



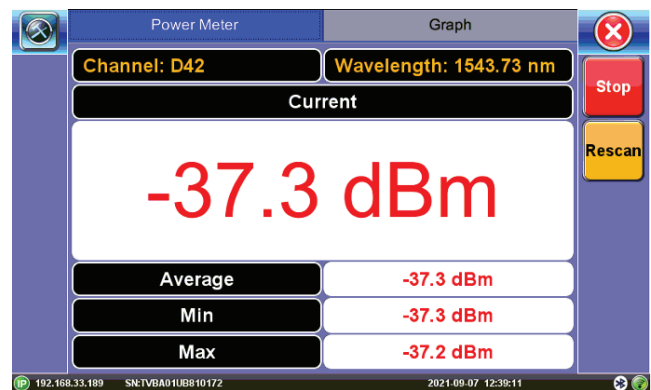
### Bar Graph

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.



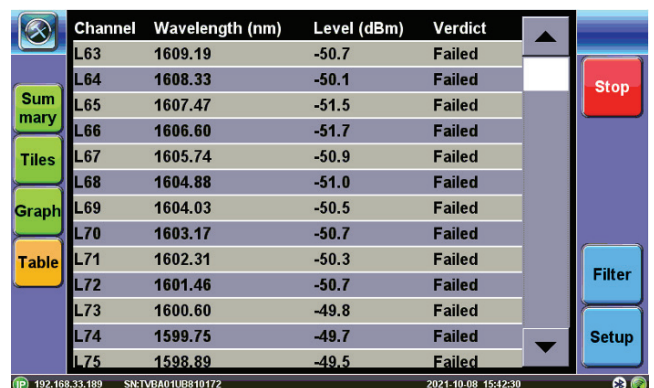
### Quick DWDM/Quick CWDM

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.



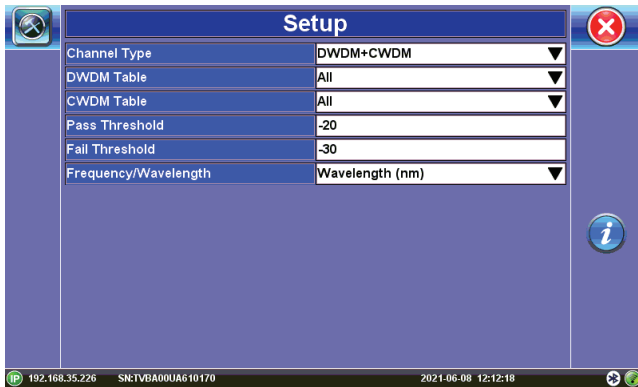
### Table View

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



### 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.

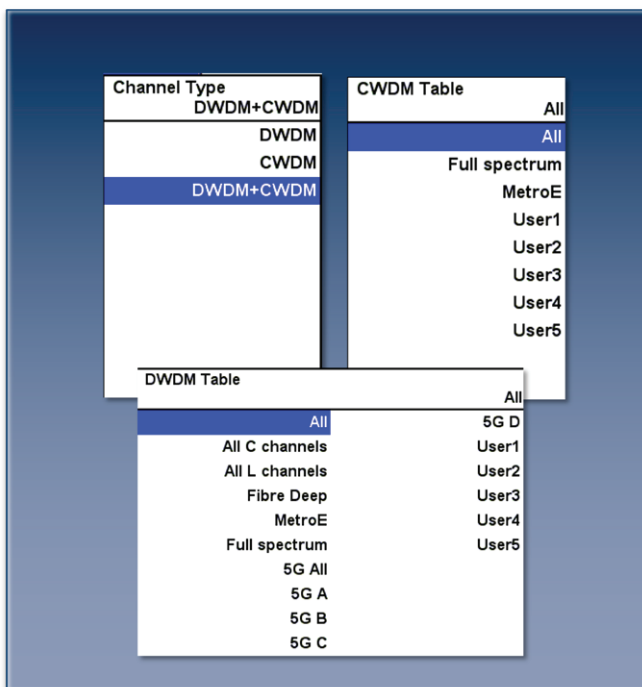


### Simple Software Upgrades

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.

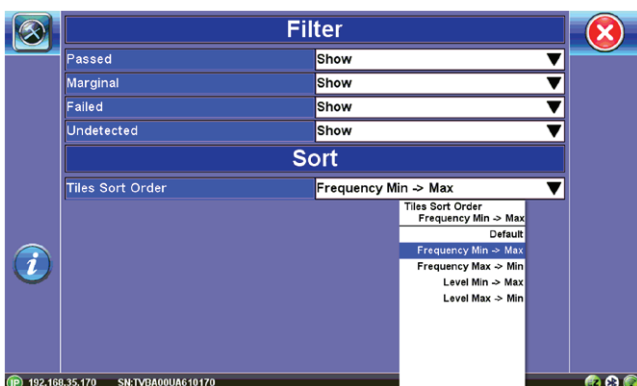
### Extended Battery Operation

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 Connector Protector (Hardware Option)



Optical Connector Protector



Replaceable Ferrule



Optical Protector Cover  
(optional)

1 Patent pending  
2 Spare ferrules available in  
pack of 4 for APC or UPC

The innovative, patent pending field-replaceable optical ferrule system<sup>1</sup> adds an extra layer of protection to the internal end-face of calibrated optical test ports, preventing contamination and accidental damage.

Users can quickly replace the ferrule<sup>2</sup> without the need for any tool while maintaining the integrity of the instrument's factory calibration. This novel approach eliminates the downtime, logistical hurdles and high cost associated with sending test sets to a service center for repair and recalibration.

All components in the system are reusable, with the exception of the small replaceable ferrule, helping to reduce environmental waste.

### Field-Replaceable Optical Ferrule System

#### Universal Adapter

The universal connector adapter allows users to change the optical connector type conveniently whenever needed. Available in FC, SC, ST and LC.

#### Locking Ring

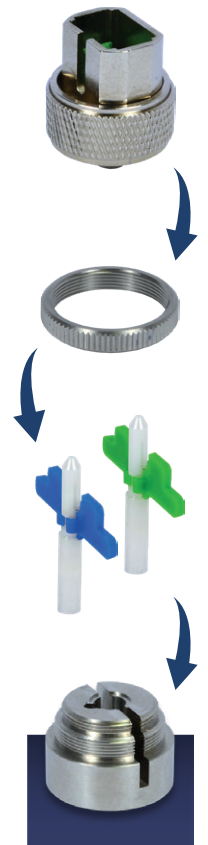
To secure the replaceable ferrule at its optimum location for the best performance.

#### Replaceable Ferrule with APC or UPC End-face

The self-aligned field-replaceable ferrule can be changed out in seconds. Users can select between APC or UPC end-face, ensuring compatibility with any test application requirement.

#### Optical Connector Protector Base

The panel mount protector base is made from high-grade stainless steel using a precision CNC process. This achieves proper alignment of the replaceable ferrule, minimizing insertion loss.



## Optical Specifications

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.

## Ordering Information

Handheld Optical Channel Analyzer Models	
PN	Description
Z06-05-052P	CWDM and 100 GHz DWDM C&L Band Channel Checker
Additional Options	
Bluetooth + WiFi Option	
Fiber Scope Option	
OTG to Ethernet cable option	

## General Specifications

Dimensions	150 x 150 x 70 mm (5.9 x 5.9 x 2.75)	Interfaces	Micro-USB with On The Go (OTG) support
Weight	1.18 kg (2.60 lbs) including battery	AC Adaptor	Input: 100-240 VAC (50/60 Hz), 1.5A max
Battery	Lithium Polymer battery, 10 Ah with low voltage indication	Memory	Output: 12 VDC
Battery Autonomy	>9 hours continuous operation	Connectivity	Internal 16 Gbyte micro SD card
Power Usage	<4 Watts	WiFi	WiFi 802.11 b/g/n (optional), Bluetooth (optional)
Operating Temperature	-5°C to 50°C (23°F to 122°F)	Languages	English (others available on demand)
Storage Temperature	-40°C to 60°C (-40°F to 140°F)	Certifications	CE & ROHS compliant
Humidity	5% to 85%, non-condensing	Safety Standards	AC adaptor - IEC 61010-1, Class II (GOST 12.2.091)
Display	5" high resolution TFT color touchscreen LCD		

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