MAX-5205

SIMPLE DWDM CHANNEL CHECKER

Intuitive channel checker to monitor DWDM channels and measure their power.

SPEC SHEET

KEY FEATURES

- Easy to use: intuitive graphical user interface (GUI) and workflow
- Bar graph and table view on wide touchscreen display
- High storage capacity and reporting from the field
- Intelligent channel power level measurements
- Compact and portable form factor
- Covers C-BAND ITU-T G.692 DWDM grid channels (12-62) and PON wavelengths

APPLICATIONS

- DWDM networks
- HFC networks

RELATED PRODUCTS

Fiber inspection probe
FIP-400B (WiFi or USB)

xWDM OTDR
FTBx-740C

Optical spectrum analyser
FTBx-5235

DWDM OCC + OTDR
Optical Wave Expert

COMPLEX NETWORKS, SIMPLE SOLUTIONS

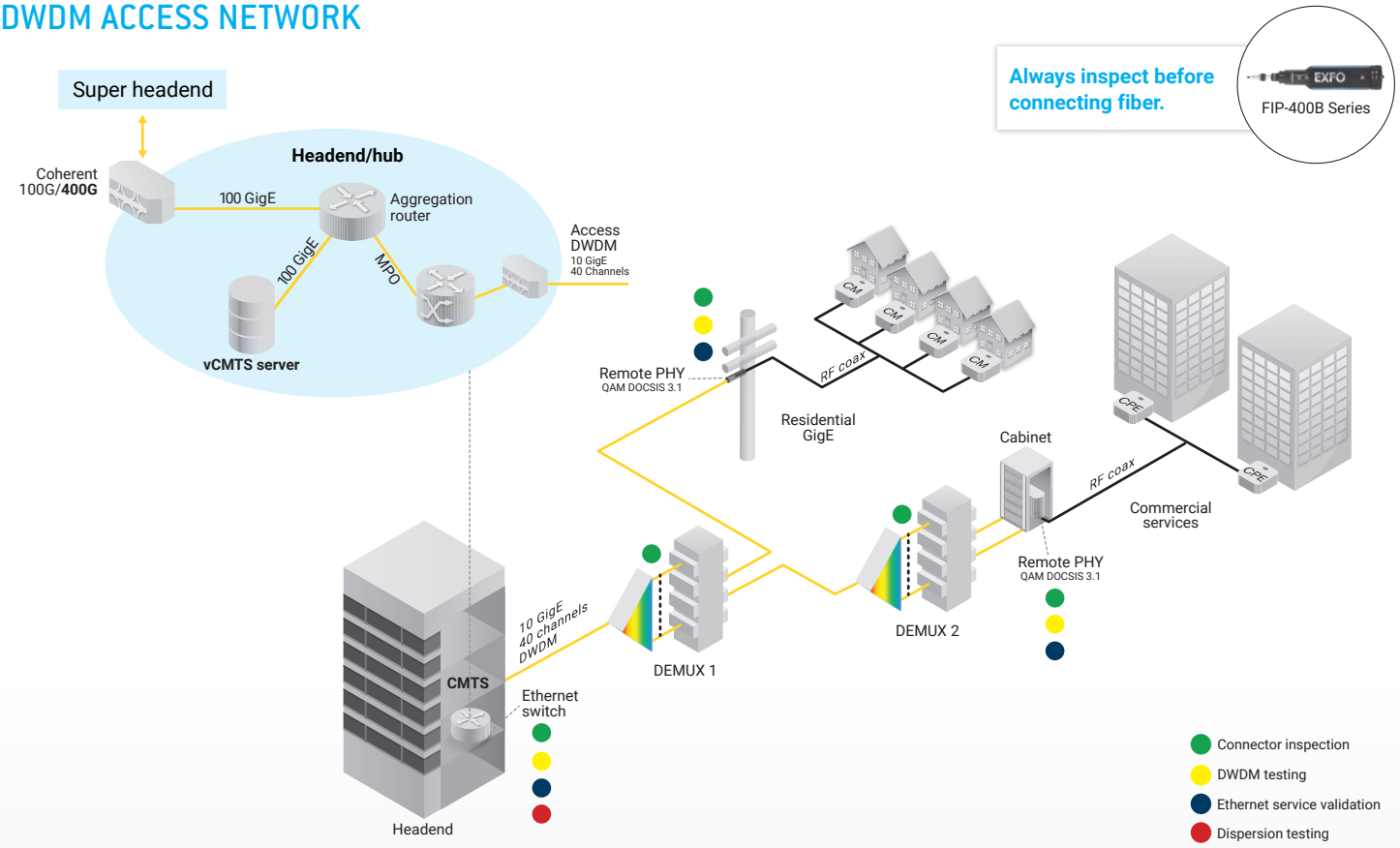
As fiber is pushed further into the Remote-PHY and distributed access architecture (DAA) networks, operators are leveraging the full spectral possibilities thanks to dense wavelength division multiplexing (DWDM).

The journey from radio frequency (RF) signals to digital optics featuring DWDM technology requires simple-to-use and intuitive solutions to avoid extensive training with accompanying lengthy learning curves as well as error-prone technical configurations.

The MAX-5205 optical channel checker leverages an intuitive workflow and a handheld form factor with a large screen display. This makes it an essential tool in the field for technicians troubleshooting or commissioning DWDM networks. Data storage and reporting capacity from the field avoids delays in closing jobs, loss of results.

With the plug-and-play optical add-ons (inspection probe, power meter and visual fault locator), this test kit becomes a powerful, agile and versatile solution for various network architectures.

DWDM ACCESS NETWORK



DAA using DWDM technology:

- From hybrid fiber-coaxial (HFC) to the optical cable
- 10 Gbit/s SFP for RPHY and up to 100 Gbit/s Ethernet for business services
- Up to 40 ITU-T wavelengths
- Up to 80 km (amplifier possibly present)
- N+0 DOCSIS 3.1 architecture

Watch out for these:

- Wavelength and power loss in SFP carrier at the DEMUX or customer premises
- Dispersion at 10 Gbit/s leading to high BER
- Fiber bends and breaks
- Dirty or damaged connectors

Recommended tests at installation:

- Dispersion (CD and PMD)
- Connector inspection
- Fiber characterization using DWDM ITU-T OTDR/iOLM to validate continuity through the MUX/DEMUX, loss, ORL and length

Recommended tests at activation and for troubleshooting:

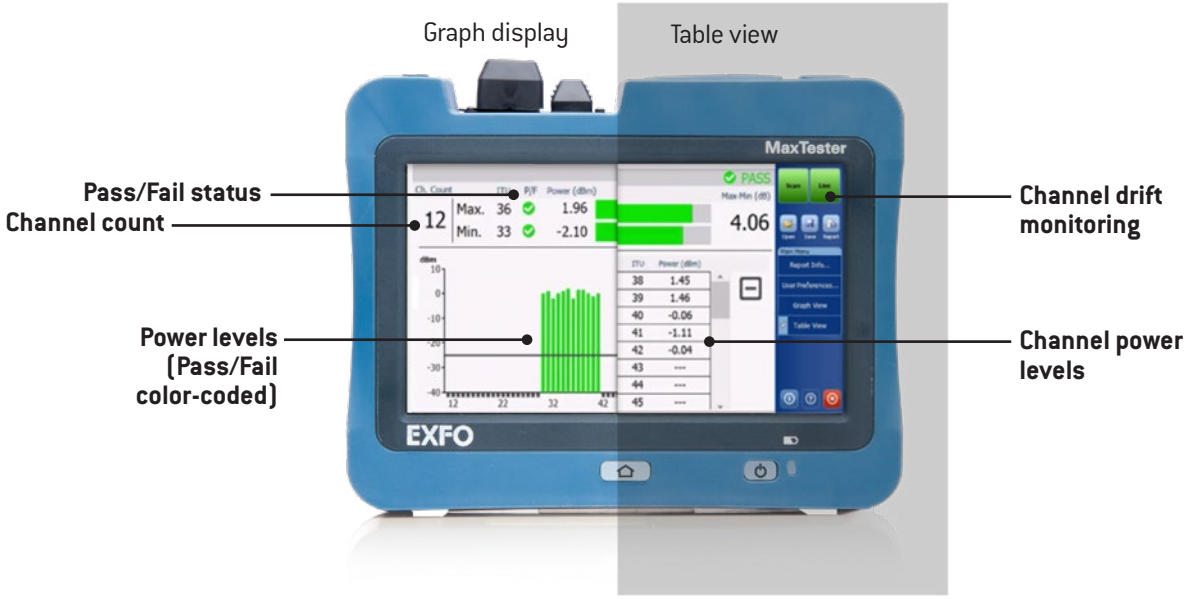
- Spectral measurements (activation)
- OSNR (if amplified)
- ITU-T wavelength-specific OTDR
- Connector inspection

Common network issues:

- Macrobends
- Faulty connectors (dirty or damaged)
- Low signal power or high noise level
- High CD or PMD
- Poor throughput
- High latency
- Poor path protection switch time

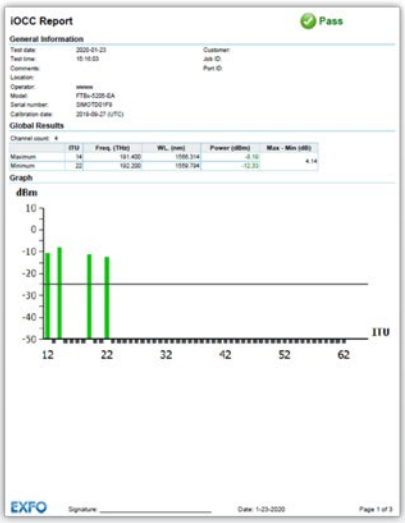
INTUITIVE TEST RESULTS ANALYSIS

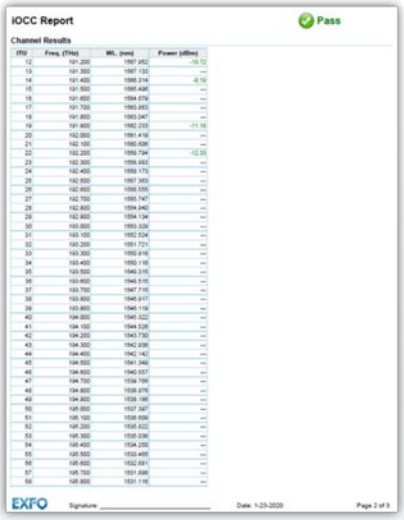
Thanks to its 7-inch outdoor-enhanced color touchscreen, the MAX-5205 offers an intuitive menu workflow and neatly displays test results analysis. Highly visual data representation allows for simpler and faster results assessment. Tests results can be displayed into graph display or table view to examine channel power levels. Color coding also provides contextual status over pass/fail analysis.

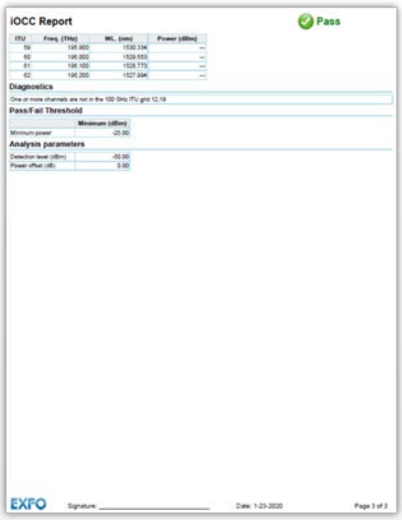


SIMPLE STEP FROM TESTING TO REPORTING

The MAX-5205 is not only able to store more than 20 000 tests results internally but can also generate reports in the field and share them instantaneously. This means jobs getting closed faster, no data consolidation required, no test results lost on the way and no more manual uploads. In essence: more time doing tests, less time reporting.







DESIGNED FOR FLEXIBLE USE IN THE FIELD

The tried-and-tested MaxTester design—compact and portable—is a rugged field companion, built to withstand the harshest conditions. Its battery will provide sufficient power for up to 8 hours.

You can keep your options open with the MaxTester. The following plug-and-play optical options can be purchased whenever you need them: when you order or later on. In either case, installation is a snap, and can be done by the user without the need for any software update.

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Fiber inspection probe	Power meter	VFL
Inspect connector end-face	Validate HFC or High power signals	Locate fault visually

Plug and play options

OPTICAL POWER METER

This high-level power meter (GeX) can measure up to 27 dBm, the leading performance in the industry. It is essential for testing hybrid fiber-coaxial (HFC) networks or high-power signals. If used with an auto-lambda/auto-switching compatible light source, the power meter automatically synchronizes on the same wavelength, thus avoiding any risk of mismatched measurement.

- Extensive range of connectors
- Auto-lambda and auto-switching
- Offers measurement storage and reporting
- Seven standard calibrated wavelengths

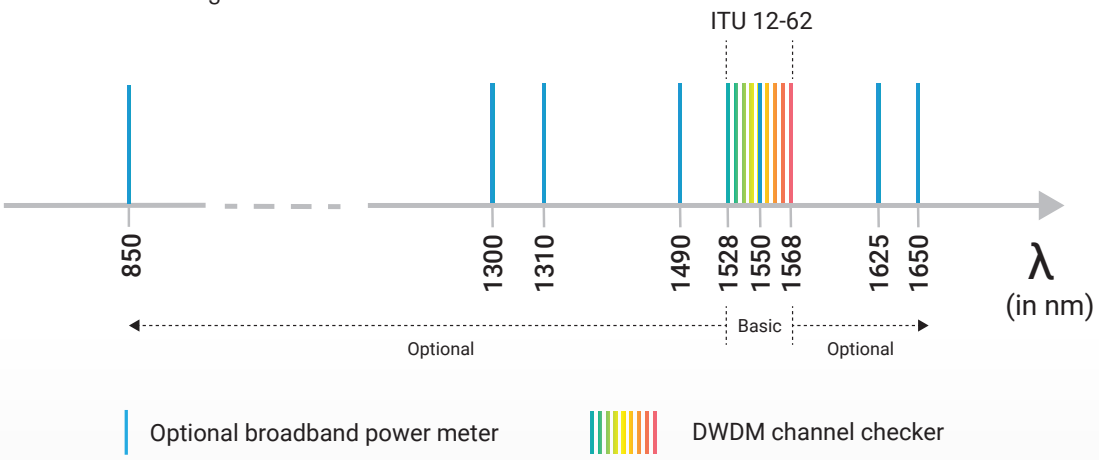

Figure 1. Channel checker and power meter wavelength range

VISUAL FAULT LOCATOR (VFL)

The plug-and-play VFL easily identifies breaks, bends, faulty connectors and splices, as well as other causes of signal loss. Basic yet essential, this troubleshooting tool is a must-have in every field technician's toolbox. The VFL visually locates and detects faults over distances of up to 5 km by creating a bright-red glow at the exact location of the fault on singlemode or multimode fibers. (Note: Available with the optical power meter only)

FIBER INSPECTION PROBE (FIP)

Properly inspecting a fiber-optic connector using our fiber inspection probe can prevent a host of issues from arising further down the line, thus saving you time, money and trouble.

From single fiber to MPO, our 6 models are tailored for different needs. Our fully automated probes come with autofocus capabilities that turn the critical inspection phase into a fast and hassle-free one-step process.

FIP-400B SERIES OF FIBER INSPECTION PROBES

FEATURES	USB WIRED			WIRELESS		
	Basic **FIP-410B**	Semi-automated **FIP-420B**	Fully automated **FIP-430B**	Fully automated **FIP-415B**	Semi-automated **FIP-425B**	Fully automated **FIP-435B**
Three magnification levels	√	√	√	√	√	√
Image capture	√	√	√	√	√	√
Five-megapixel CMOS capturing device	√	√	√	√	√	√
Automatic fiber image-centering function	X	√	√	√	√	√
Automatic focus adjustment	X	X	√	√	X	√
On-board pass/fail analysis	X	√	√	X*	√	√
Pass/fail LED indicator	X	√	√	X	√	√
WiFi connectivity	X	X	X	√	√	√
Manual scanning for multifiber/MPO connectors	√	√	√	√	√	√
Automated multifiber/MPO inspection	√	√	√	√	√	√

* Pass/fail analysis is field upgradable via software option

LOOKING FOR MORE ADVANCED FAULT-FINDING CAPABILITIES?

Looking to validate channels and find faulty elements on the spot? The Optical Wave Expert was engineered for a seamless troubleshooting experience, from channel power validation to fault-finding capabilities on a single port. It provides real-time channel power readings and if an issue is detected, the tunable OTDR capabilities automatically kick in to find faults. Results and diagnostics are clearly displayed on a wide touchscreen.

The integration of channel checker and OTDR capabilities on a single port means less unnecessary manipulation of the optical fiber and improved field efficiency. This translates into faster mean-time-to-repair (MTTR) and makes the trial and error approach–which can disable nodes–obsolete.

Figure 2. The optical wave expert OTDR with channel checker

SOFTWARE UTILITIES	
Software update	Ensure that your MaxTester is up-to-date with the latest software.
VNC configuration	The Virtual Network Computing utility allows technicians to easily remote control the unit via a computer or laptop.
Microsoft Internet Explorer	Access the Web directly from your device interface.
Data mover	Transfer all your daily test results quickly and easily.
Centralized documentation	Instant access to user guides and other relevant documents.
Wallpapers	Enhance your work environment with colorful and scenic backgrounds.
PDF Reader	View your reports in PDF format.
Bluetooth file sharing	Share files between your MaxTester and any Bluetooth-enabled device.
WiFi connection	WiFi FIP inspection probe interface. Upload test results and browse the Internet.
Inspection probe	USB or WiFi probe to inspect and analyze connectors.

OPTICAL CHANNEL CHECKER SPECIFICATIONS

TECHNICAL SPECIFICATIONS	
Wavelength range (C-band)	1527.99-1567.95 nm (191.2-196.2 THz)
ITU channels	ITU-T G694.1 channels 12-62
Channel spacing	DWDM 100 GHz
Dynamic range per channel (dBm)	10 to –40
Maximum total safe power (dBm)	20
Absolute power uncertainty (dB) (typical)	1
ORL (dB)	> 35
Measurement time (s)	< 3

GENERAL SPECIFICATIONS

TECHNICAL SPECIFICATIONS		
Display		7-in (178-mm) outdoor-enhanced touchscreen, 800 x 480 TFT
Interfaces		Two USB 2.0 ports RJ45 LAN 10/100 Mbit/s
Storage		2 GB internal memory (20 000 OTDR traces, typical)
Batteries		Rechargeable lithium-polymer battery 8 hours of operation as per Telcordia (Bellcore) TR-NWT-001138
Power supply		Power supply AC/DC adapter, input 100-240 VAC, 50-60 Hz
Size (H x W x D)		166 mm x 200 mm x 68 mm (6 $^{9}/_{16}$ in x 7 $^{7}/_{8}$ in x 2 $^{3}/_{4}$ in)
Weight (with battery)		1.5 kg (3.3 lb)
Temperature	Operating Storage	–10 °C to 50 °C (14 °F to 122 °F) –40 °C to 70 °C (–40 °F to 158 °F)
Relatine humidity		0 % to 95 % noncondensing

BUILT-IN POWER METER SPECIFICATIONS (GeX) (optional)	
Calibrated wavelengths (nm)	850, 1300, 1310, 1490, 1550, 1625, 1650
Power range (dBm)	27 to –50
Uncertainty (%)	±5 % ± 10 nW
Display resolution (dB)	0.01 = max to –40 dBm 0.1 = –40 dBm to –50 dBm
Automatic offset nulling range	Max power to –30 dBm
Tone detection (Hz)	270/330/1000/2000

VISUAL FAULT LOCATOR (VFL) (optional)
Laser, 650 nm ± 10 nm
CW/Modulate 1 Hz
Typical P_{out} in 62.5/125 µm: > –1.5 dBm (0.7 mW)
Laser safety: Class 2

ORDERING INFORMATION

MAX-5205-XX-XX-XX-XX-XX-XX-XX-XX-XX

Model
MAX-5205 = DWDM channel checker
C-band 1528-1568 nm (ITU 12-62), 100 GHz

Connector
EA-EUI-28 = APC/DIN 47256
EA-EUI-89 = APC/FC narrow key
EA-EUI-91 = APC/SC
EA-EUI-95 = APC/E-2000
EA-EUI-98 = APC/LC

Power meter
00 = Without power meter
VFL = Visual fault locator (650 nm)
PM2X = Power meter; GeX detector
VPM2X = VFL and power meter; GeX detector

Power meter connector adapter
FOA-22 = FC/PC, FC/SPC, FC/UPC, FC/APC
FOA-32 = ST: ST/PC, ST/SPC, ST/UPC
FOA-54B = SC: SC/PC, SC/SPC, SC/UPC, SC/APC
FOA-96B = E-2000/APC
FOA-98 = LC
FOA-99 = MU

WiFi and Bluetooth®
00 = Without RF components
RF = With RF capability (WiFi and Bluetooth) [a, b]

Extra FIP-400B tips [c]
Bulkhead tips
FIPT-400-LC = LC tip for bulkhead adapters
FIPT-400-LC-APC = LC/APC tip for bulkhead adapter
FIPT-400-SC-APC = SC APC tip for bulkhead adapter [e]
FIPT-400-SC-UPC = SC UPC tip for bulkhead adapter

Patchcord tips
FIPT-400-U12M = Universal patchcord tip for 1.25 mm ferrules
FIPT-400-U12MA = Universal patchcord tip for 1.25 mm ferrules APC
FIPT-400-U25M = Universal patchcord tip for 2.5 mm ferrules [d]
FIPT-400-U25MA = Universal patchcord tip for 2.5 mm ferrules APC [e]

Base tips [f]
APC = Includes FIPT-400-U25MA and FIPT-400-SC-APC
UPC = Includes FIPT-400-U25M and FIPT-400-FC-SC

Inspection probe model [g]
00 = Without inspection probe
FP410B = Digital video inspection probe
Triple magnification
FP420B = Analysis digital video inspection probe
Automated pass/fail analysis
Triple magnification
Autocentering
FP425B = Wireless digital video inspection probe [b]
Automated pass/fail analysis
Triple magnification
Autocentering
FP430B = Automated analysis digital video inspection probe
Automated focus
Automated pass/fail analysis
Triple magnification
Autocentering
FP435B = Wireless analysis digital video inspection probe [b]
Automated focus
Automated pass/fail analysis
Triple magnification
Autocentering

Example: MAX-5205-EA-EUI-91-VPM2X-FOA-54B-FP435B-APC-RF

a. Not available in China.
b. RF option is mandatory and automatically included if FP425B or FP435B fiber inspection probe model is selected.
c. This list represents a selection of fiber inspection tips that covers the most common connectors and applications but does not reflect all the tips available. EXFO offers a wide range of inspection tips, bulkhead adaptors and kits to cover many more connector types and different applications. Please contact your local EXFO sales representative or visit www.EXFO.com/FIPtips for more information.
d. Included when UPC base tips are selected.
e. Included when APC base tips are selected.
f. Available if inspection probe is selected.
g. Includes ConnectorMax2 software.

For the most recent version of this spec sheet, please go to www.EXFO.com/specs.
In case of discrepancy, the web version takes precedence over any printed literature.

SPMAX5205.1AN

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