EX10 – Multigigabit residential and business services tester

FOR VALIDATING GPON, XGS-PON

COMPATIBLE WITH
EXchange

■ The EX10 helps onsite technicians easily validate bandwidth speeds up to full line rate 10 Gigabit Ethernet (including GPON, XGS-PON) and test residential WiFi 6E to monitor residential quality of experience (QoE).

WiFi 6E CERTIFIED

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EX10

WiFi testing

KEY FEATURES AND BENEFITS

Multigigabit validation including 1, 2.5, 5 and 10 Gigabit interfaces powered by Speedtest® by Ookla®

Latency, download and upload throughput performance metrics with adjustable pass/fail thresholds based on subscribers' purchased plans

Supports GPON (upcoming release), XGS-PON with PON ID, ONU ID, central office transmit optical level (TOL) and optical distribution network (ODN) loss

SFP/SFP+ interface for Speedtest over fiber

WiFi 6E testing (2.4 GHz, 5 GHz and 6 GHz bands)

Wireless interface (WiFi) supporting Speedtest and channel map

Carrier-grade hardware for repeatable and reliable testing

Operated via smart device over Bluetooth®

Cloud-upload results via EXFO Exchange

Efficient job closeout with best-in-class birth certificate generation (reports in JSON, XML, PDF or CSV formats can be sent by email, SMS or applications directly to subscriber or stored in the cloud for future reference)

Supports VLAN, Static IP, DHCP (with or without Option 60) and PPPoE

APPLICATIONS

Broadband validation

WiFi optimization

QoE: Validate core services

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BROADBAND ACCESS: VALIDATE, TROUBLESHOOT AND OPTIMIZE

The EX10 provides both wireline and wireless testing capability, providing comprehensive insights that field technicians can use to remedy any situation. Operators can prove they deliver both promised throughput and unparalleled quality of experience at the customer premises.
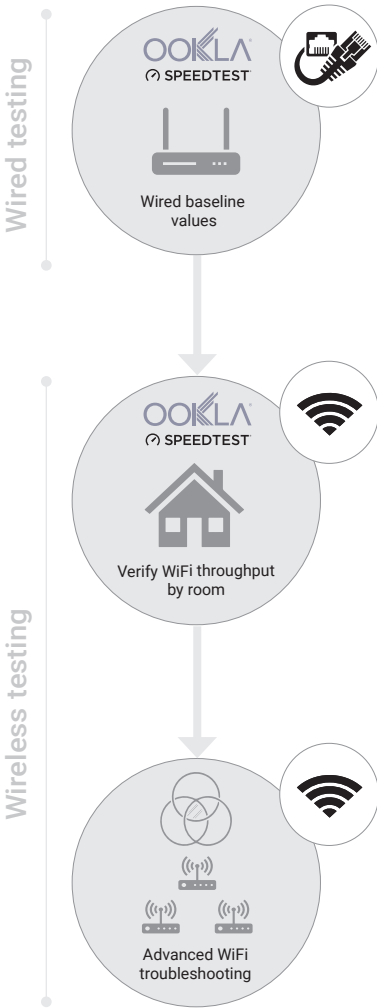
Wired

The EX10 is the first device to include all cutting-edge multigigabit interfaces in a simple yet unique tester that anyone with a smart device can use. It has the capability of turning up 1, 2.5, 5 or even 10 Gigabit Ethernet interfaces for validating broadband access.

Wired baseline values

WiFi validation

The EX10 can validate WiFi 5, 6 and cutting-edge WiFi 6E delivery from room to room. The device uses Speedtest by Ookla to determine whether a room can support video streaming of SD, HD, 4K and even upcoming 8K resolution. All rooms can be validated for proper delivery of over-the-top (OTT) video streaming services.

Verify WiFi throughput by room

Advanced WiFi troubleshooting

The EX10 can also utilize other troubleshooting techniques such as viewing WiFi channel metrics room by room. It has the capability of retrieving the received signal strength indicator (RSSI) and the signal-to-noise ratio (SNR) to enable technicians in properly diagnosing WiFi issues.

The EX10 provides technicians with insight to solve WiFi issues: moving the router, changing channels or using extenders.

Advanced WiFi troubleshooting

Wired testing

Wireless testing

THE RIGHT FEATURES FOR THE RIGHT APPLICATION

Residential

Validate customer service-level agreements (SLA) and prove that service delivery is as promised. From 1G to 10G, the EX10 delivers reliable and repeatable metrics along with the birth certificate to share with the subscriber.

GPON (upcoming release)/XGS-PON

Guarantee speeds up to 10G on your XGS-PON link while also ensuring connection to the right OLT. With PON ID, ONU ID and TOL and ODN loss, the EX10 is loaded with all the right tools for successful service activation on the first try, without even entering customer premises.

WiFi

Ensure full and seamless user-experience to subscribers by leveraging the EX10's WiFi capabilities. Guarantee 8K video streaming—for each room in the dwelling—while working at home. The EX10 supports the latest WiFi 6E technology, making it now possible to validate WiFi speeds greater than 1G, everywhere on customer premises.

XGS-PON ONT LINK VALIDATION[a]

The EX10's XGS-PON ONT link validation is ideal for many different XGS-PON testing scenarios. It can be used for FTTH deployments, troubleshooting, validation and performance metrics.

For deployment purposes, the EX10 can be used to get the OLT TX optical power and the ONT RX optical power. From there it can derive the optical domain network loss (ODN LOSS) which is the signal attenuation between OLT and the ONU.
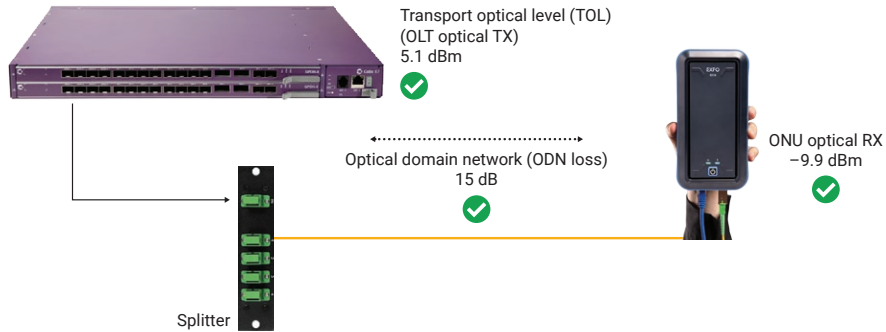
Transport optical level (TOL)
(OLT optical TX)
5.1 dBm

ONU optical RX
−9.9 dBm

Optical domain network (ODN loss)
15 dB

Splitter

Figure 1. Optical power readings

For troubleshooting, the EX10 can derive the PON ID which helps the technician to understand why an ONT is not synching up with the OLT, typically when the PON ID is incorrect the fiber has been attached to an incorrect port.

Disney+ prime video
YouTube N

Internet, OTT,
VoIP, etc.

No service
at residence

PON ID

76 G2 08 5

Wrong PON ID
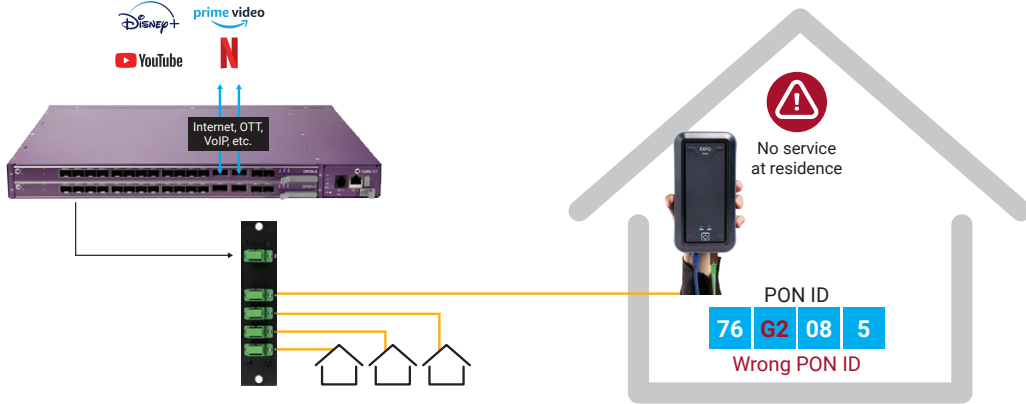
Figure 2. PON ID validation

For complete end-to-end performance metrics, the EX10 can be used to test the broadband speed being delivered by emulating the ONT and not requiring a router. All bandwidth measurements are powered by the industry-leading Speedtest by Ookla algorithm.
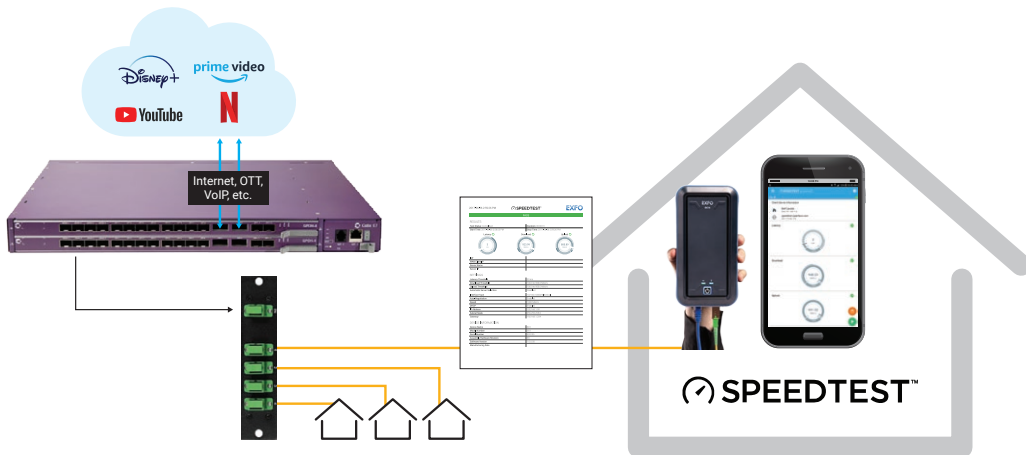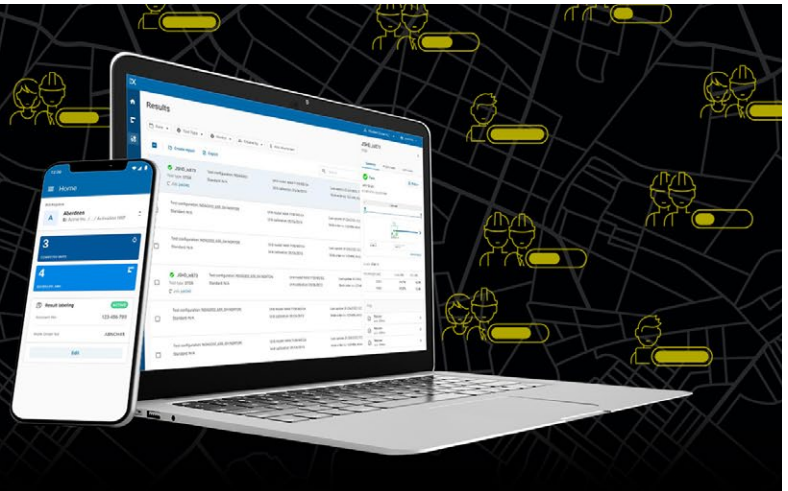
Disney+ prime video
YouTube N

Internet, OTT,
VoIP, etc.

SPEEDTEST™

Figure 3. Speedtest over XGS-PON

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a. Requires EXFO-managed SFP XGS-PON ONT transceiver.

EXchange

MANAGE FIELD TESTS.
STREAMLINE WORKFLOWS.
UNLOCK INSIGHTS.

Interconnect all parts of your field test ecosystem through EXFO Exchange, our open collaborative software platform.

KEY BENEFITS

Connect operations with real-time visibility

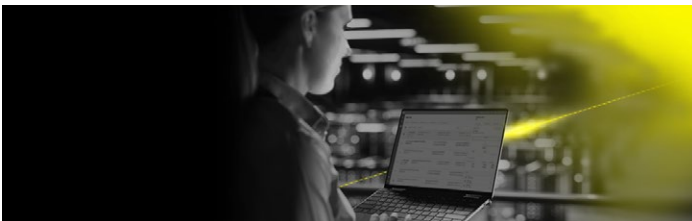**Increase collaboration and build trust with business partners**

Boost efficiency with automated processes

Reduce maintenance costs

Unlock insights to see what matters

From the office

Invite your workforce and contractors to join your organization's workspace on EXFO Exchange. This will help you better organize projects and gain unprecedented visibility in real time over job progress and MoP compliance. Optimize closeout package generation to close jobs rapidly and monetize/get paid faster.
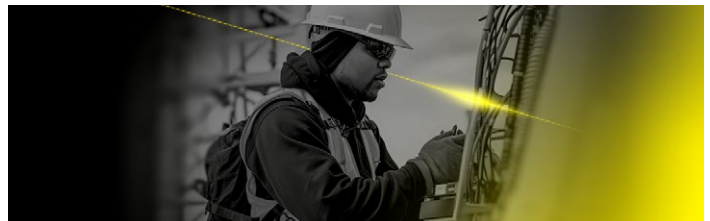
From the field

Request an invitation from your team manager to complete jobs faster and better, save results automatically and share them in real time.

KEY FEATURES

Centralized and organized data	Easy integration	Consolidated reporting service	Process automation	Collaboration

Get started >

EXFO

SPECIFICATIONS

GENERAL SPECIFICATIONS

Size (H x W x D)		105 mm x 200 mm x 60 mm (4 $^{1}/_{16}$ in x 7 $^{13}/_{16}$ in x 2 $^{3}/_{8}$ in)
Weight		0.8 kg (1.75 lb)
Temperature	Operating Storage with battery (short term < 1 month)	0 °C to 40 °C (32 °F to 104 °F) −10 °C to 40 °C (14 °F to 104 °F)
Relative humidity range		≤ 93 %, non-condensing

INTERFACES

Electrical RJ45 test port	100/1000/2500/5000/10000 Mbit/s
Optical SFP test port	1GE SFP, SFP GPON ONT (upcoming release) (2.4 Gbit/s download and 1.2 Gbit/s upload) and 10GE SFP+, SFP+ XGS-PON ONT (10 Gbit/s download and 10 Gbit/s upload)
USB port	USB 3.0 type-C port
Bluetooth	Bluetooth v5.0
WiFi	WiFi 6E (2.4 GHz, 5 GHz and 6 GHz)

BATTERY/POWER SUPPLY

Type	Rechargeable Li-ion smart battery
Battery autonomy	One full day of customer visits (i.e., average of 10 residential broadband customer visits)
Charging time	3.5 h using supplied wall charger
AC/DC adapter/charger	Input: 100−240 VAC; 50/60 Hz; 1.0 A max, output: 5 V, 9 V, 12 V, 15 V; 3.0 A and 20 V; 2.25 A

SMART DEVICE REQUIREMENTS

Smart device supported	Android OS and iOS-based devices
OS version	Android 7.0 Nougat and higher, iOS 13 and higher
Bluetooth support	Bluetooth low energy technology (version 4.0 and higher)

SPEED TEST CAPABILITIES

Speedtest® by Ookla®	• Latency • Download speed • Upload speed • Server information • Client WAN IP	• Multi TCP connection • Automatic/manual server selection with search engine • Pass/fail verdict based on thresholds • Configurable job information • JSON/XML/PDF/CSV automatically generated reports

WiFi TESTING CAPABILITIES

Channel map	• Support of WiFi 5, 6 and 6E (802.11ax/ac/a/b/g/n) • Support of 2.4 GHz, 5 GHz and 6 GHz frequency bands • Visualization of WiFi channel map analysis • Channel map filtering based on signal level: excellent, good, fair, weak • Information per access point: BSSID, manufacturer, channel number, frequency and RSSI • Graphical selection of access points for clarity and in-depth troubleshooting

MISCELLANEOUS

PPPoE	Ability to enter a user name and password, PPPoE connection status, and always on or on-demand connection mode, PAP and CHAP support
VLAN	Ability to enter a VLAN ID, priority and type

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ORDERING INFORMATION

EX10-XX

Options
OPT-ETH-RX-POW-EX = Ability to run 1G/10G optical Ethernet Speedtest by Ookla
XGS-PON-PON-APP-EX = Ability to read PON info from the OLT
XGS-PON-SPTEST-EX = Ability to run a Speedtest by Ookla over XGS-PON
WI-FI-EX = Ability to run a Speedtest by Ookla over WiFi

EX10-PRO-XX [a]

Options
OPT-ETH-RX-POW-EX = Ability to run 1G/10G optical Ethernet Speedtest by Ookla
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XGS-PON-SPTEST-EX = Ability to run a Speedtest by Ookla over XGS-PON
WI-FI-EX = Ability to run a Speedtest by Ookla over WiFi

a. EX10-PRO is needed for future Smart-Loopback capabilities.

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EXFO serves over 2000 customers in more than 100 countries. To find your local office contact details, please go to **www.EXFO.com/contact**.