

# MaxTester 630G

VALIDATION OF GFAST AND BROADBAND RESIDENTIAL SERVICES



Install and troubleshoot Gfast, VDSL2 and ADSL2+ broadband deployments up to 1 Gbit/s and validate in-home multiplay performance metrics

## KEY FEATURES

- Gfast with backwards compatibility to VDSL2 and ADSL2+, all-in-one test tool
- VDSL2 and ADSL2+ bonding enables operators to increase rates and/or reach to subscribers
- Spectrally compatible VDSL2 35b support
- Verify internet throughput using Speedtest™ by Ookla®, the industry's standard solution. Validate IPTV and VoIP services for quality-of-service (QoS) assurance
- Configurable pass/fail results for automated scripted testing
- Upload results to the cloud directly or via the EXFO Sync mobile application for additional post-analytics
- High-resolution, 6-inch touchscreen with dual GigE ports
- Designed to face the challenges of the outside plant environment, with an IEC IP54 rating

## APPLICATIONS

- FTTx/MDU Gfast, VDSL2 35b and VDSL2 vectored installations
- Bonded VDSL2 and bonded ADSL2+ deployments
- Multiplay service assurance, inclusive of internet throughput validation using Speedtest™ by Ookla®
- FTTdp deployments
- Gfast-based mobile backhaul, DAS or small cell deployments
- Cloud-based test asset management available through EXFO Connect
- Validate bandwidth performance and speed, using Speedtest™ by Ookla®, HTTP, FTP, or iPerf

## THE MAXTESTER SERIES



MaxTester 600 Series  
Copper, VDSL2, Multiplay test solutions



MaxTester 700B  
OTDR Series



MaxTester 940  
Fiber Certifier OLTS



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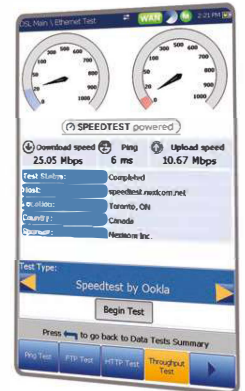
## FAST VALIDATION OF ULTRA-BROADBAND DEPLOYMENTS

The MaxTester 630G (MAX-630G) is the perfect tool for any service provider deploying Gfast (ITU-T G Series 9700 and 9701 recommendations for fast access to subscriber terminals) in FTTdp or MDU deployments. For service providers considering Gfast as a future play for their FTTx broadband deployments, the MAX-630G offers key features today, including: VDSL2 35b, vectoring enabled VDSL2, VDSL2 bonding and ADSL2+ and, single pair and bonded pair capability. Field-upgradeable software offers the ability to upgrade to Gfast in seconds. The MAX-630G's small form factor, rugged design and easy-to-use menu make it the ideal tool for installation and repair technicians. The large touchscreen display makes it intuitive and user-friendly. With the MAX-630G, the testing process is highly automated and technicians can close their jobs quickly and efficiently thanks to clear pass/fail test result conclusions. When it comes to saving results, it provides technicians with many connectivity options for uploading tests and compiling reports.

## MULTIPLAY PERFORMANCE MANDATE

Ultra-broadband Gfast and enhanced VDSL2 variants (such as new VDSL2 35b deployments) are driven by subscriber requirements for flawless IPTV and over-the-top (OTT) video, high speed downloads and uploads, social networking push and pulls, and online gaming (e.g., MMORPG), to name a few. The MAX-630G allows technicians to connect subscriber equipment (e.g., a PC, STB or gaming console) to the its LAN port to transfer Gfast data at speeds up to 1000 Mbit/s. The MAX-630G offers service providers and contractors the same TCP throughput test methods that subscribers use today; namely the Speedtest by Ookla, which is the industry's standard solution. With Speedtest by Ookla, technicians will be able to validate the bandwidth available to the subscriber.

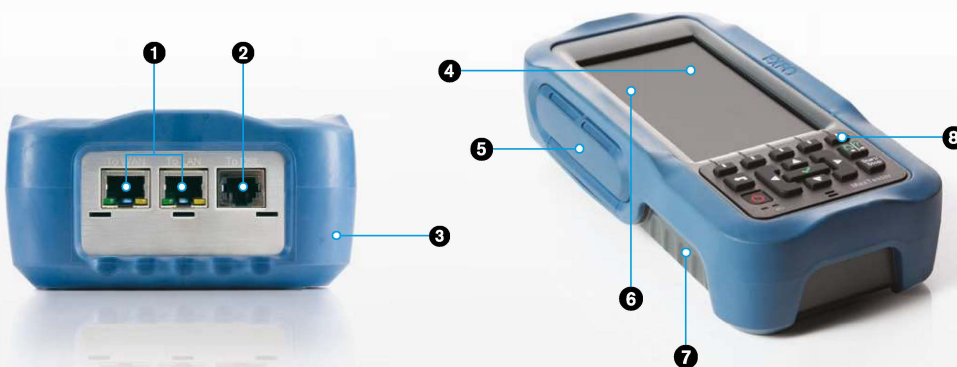
The MAX-630G offers 2.4/5 GHz WiFi scanning capability to provide technicians the ability to validate signal strength (RSSI) in the customer premise. Improperly placed modems, residential gateways (RG), routers, and/or set top boxes (STB) can impact WiFi performance and frustrate customers if quality WiFi is not available.



## NOISE MITIGATION FEATURES

Ensuring that the highest quality multiplay services are delivered to subscribers is critical for service providers deploying ultra-fast broadband connectivity. With an aging copper plant and the need to maximize the use of all pairs in the cable bundle, it is imperative that the appropriate mechanisms are in place to mitigate the impact of noise. Noise is a key contributor to negative multiplay feedback from subscribers. The MAX-630G supports INP (impulse noise protection), G.INP (impulse noise protection and physical-layer retransmission as defined by ITU-T G.998.4) and vectoring (ITU-T G.993.5) plus a complete set of DELT measurements for attenuation, noise and SNR per tone analysis up to 106 MHz. These techniques are supported by the MAX-630G to ensure consistency with service providers' noise mitigation methods and procedures.

## KEY CHARACTERISTICS



- 1 Two, 1 GigE RJ45 ports—sealed against the environment
- 2 Gfast, VDSL2, and ADSL2+ RJ11 port—sealed against the environment
- 3 All-round rubber bumper
- 4 Touchscreen color LCD—daylight visible
- 5 Interface connections—water and dirt protected
- 6 Innovative and icon-driven user interface
- 7 Handgrip area
- 8 Simple keypad



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## ALL THE RIGHT FEATURES FOR INSTALLATION TECHNICIANS

With its small form factor, the MAX-630G can go anywhere the technician does. It is rugged, lightweight and protected from the rain—just what is needed for the demanding outside-plant environment. The user interface was designed with simplicity and efficiency in mind. The large touchscreen display features colored icons and graphics for easy configuration and operation, and is simple to use for both experienced and novice technicians.

## AUTOMATED SERVICE TESTING

Customizable profiling makes testing ultra-broadband circuits with the MAX-630G easy. Run routine jobs or setup custom profiles for special projects. Test profiles can easily be transferred between units using a USB or EXFO Connect, ensuring that all technicians from the same organization are testing to the same specifications. In addition, the MAX-630G boasts customizable thresholds allowing all technicians to visualize pass or failed conditions so they can quickly move on to the next job or investigate further.

## DATA MINING OF RESULTS

In today's highly competitive network service provider environment, delivering exceptional quality of service to subscribers is paramount. With EXFO Connect and EXFO Sync combined with the MAX-630G, service providers can manage their fleet of MaxTester units and ensure that they have the most up-to-date software installed and properly configured. Combining these solutions with the MAX-630G makes it possible for service providers to have test results on hand for data mining and post-analytics purposes, enabling them to proactively manage loop plants and ensure that they are of the highest quality.



# EXFO | Connect

## AUTOMATE ASSET MANAGEMENT. GET CONNECTED.

The EXFO Connect cloud-hosted solution provides an automated, secure environment that links your EXFO test instruments together and enables the management of your deployed inventory of test sets.

EXFO Connect enables automated downloads of latest software versions to all test sets in the field to ensure consistency of testing across the organization. Test profiles and threshold settings may also be deployed to all units, to mandate testing according to the latest procedures. Enable EXFO Connect on your fleet of MaxTester units to improve operational efficiency at all levels of your business.

KEY FEATURES		
		
<b>TEST EQUIPMENT MANAGER</b> Automated inventory tracking and software download	<b>FILE MANAGER</b> Download/upload files, work orders, test configurations or procedure documents	<b>CONTRACTOR MODE</b> Secure, segregated access for test-result upload, and automated file download

Visit [EXFO.com/EXFOConnect](http://EXFO.com/EXFOConnect) for details and features compatibility with the MaxTester handheld series.



## REAL-TIME COPPER TEST RESULTS UPLOAD—STRAIGHT FROM THE FIELD

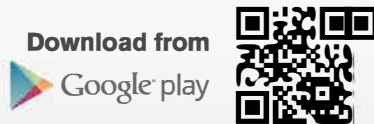
**Working in the field with an Android™ or iOS™ device?  
 Download the EXFO Sync application for your smart device.\***

EXFO Sync is an app (runs on Android and iOS) that operates together with the MAX-630G, DSL and IP field test set. It provides a fully automatic DSL test script and WiFi transfer of the results files to a phone or tablet for upload to the customer's server.

With EXFO Sync, your copper test results can be uploaded in real-time to a central location for access and further analysis to identify trouble patterns, assess technician performance or target customers for upsell to higher revenue services.

- › Copper test result are uploaded, live from the site
- › GPS tagging gives visibility of location of test for mapping of test history and network performance
- › Ensure compliance to service provider workflow process
- › Flexibility to upload test results to an FTP or HTTPS server
- › Secure, password-protected connection to upload and access results

\* Upload to smart devices is supported only over WiFi and only for the DSL autotest.



**Note**  
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GFAST/DSL SPECIFICATIONS		
<b>DSL chipset</b>	<b>Broadcom 63138</b>	
Standards compliance	ADSL1/2/2+	<ul style="list-style-type: none"> <li>› ITU-T G.992.5 (ADSL2+ including Annex A, B, J, and M)</li> <li>› ITU-T G.992.3 (ADSL2 including Annex A, B, J and L)</li> <li>› ITU-T G.992.1 (G.DMT including Annex A and B)</li> <li>› ITU-T G.994.1</li> <li>› ATIS/ANSI T1.413 Issue 2</li> <li>› IEEE 802.3ah (PTM)</li> <li>› ITU-T G.998.1, 2 (ATM, Ethernet bonding)</li> <li>› ITU-T G.998.4 (G.INP)</li> <li>› ITU-T G.992.5 (INP Amendment)</li> <li>› DT 1 TR 112 U-R</li> </ul>
	VDSL2	<ul style="list-style-type: none"> <li>› ITU-T G.993.2 Annex A, B, Q, Y</li> <li>› Profiles: 8a/b/c/d, 12a/b, 17a, 30a, 35b</li> <li>› Band Plan: 997, 998, US0</li> <li>› IEEE 802.3ah (PTM)</li> <li>› ITU-T G.998.2 (Ethernet bonding)</li> <li>› ITU-T G.998.4 (G.INP)</li> <li>› ITU-T G.993.5 (G.vector)</li> <li>› DT 1 TR 112 U-R2 (U-RV)</li> </ul>
	Gfast	<ul style="list-style-type: none"> <li>› ITU-T G.9700, G.9701</li> </ul>
DSL parameters	<ul style="list-style-type: none"> <li>› Maximum attainable bit rates</li> <li>› Actual achieved bit rates</li> <li>› Actual bonded achieved rates</li> <li>› Latency mode: fast, interleaved</li> <li>› Data modes: ATM, PTM</li> <li>› Capacity (%)</li> <li>› SNR margin</li> <li>› Output power</li> <li>› Attenuation</li> <li>› Bits/tone</li> <li>› Hlog/tone (attenuation/tone)</li> <li>› QLN/tone</li> <li>› SNR/tone</li> <li>› ALN/tone</li> </ul>	<ul style="list-style-type: none"> <li>› Interleave depth</li> <li>› Interleave delay</li> <li>› Trellis coding</li> <li>› Bit swapping</li> <li>› INP value</li> <li>› PhyR, G.INP state, performance counters</li> <li>› Vectoring state, performance counters</li> <li>› LOS, FEC, CRC, HEC, SES</li> <li>› LATN per band</li> <li>› SATN per band</li> <li>› EWL</li> <li>› kI0 and kI0 per band</li> <li>› Vendor code and revision</li> </ul>



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## MULTIPLAY TESTING SPECIFICATIONS

<b>Test interfaces</b>	<ul style="list-style-type: none"> <li>› Gfast</li> <li>› VDSL2</li> </ul>	<ul style="list-style-type: none"> <li>› ADSL1/2/2+</li> <li>› Ethernet 10/100/1000 BT</li> </ul>
<b>Encapsulation methods</b>	<ul style="list-style-type: none"> <li>› RFC 2684/Bridged Ethernet/IPoE (IPv4 and IPv6)</li> <li>› IPoA (RFC 1577)</li> </ul>	<ul style="list-style-type: none"> <li>› PPPoE (RFC 2516)</li> <li>› PPPoA/LLC and PPPoAVC-MUX (RFC 2364)</li> </ul>
<b>Operating modes</b>	<ul style="list-style-type: none"> <li>› DSL Terminate</li> <li>› DSL to Ethernet pass through</li> </ul>	<ul style="list-style-type: none"> <li>› Ethernet Terminate</li> <li>› Ethernet to Ethernet bridged pass through</li> </ul>
<b>Login format</b>	User name and password using PAP/CHAP	
<b>Connectivity support</b>	<ul style="list-style-type: none"> <li>› IPv4 and IPv6 LAN/WAN status</li> <li>› IPv4 and IPv6 DNS, gateway</li> <li>› IPv4 DHCP client/server, DHCP vendor class</li> <li>› IPv6 DHCP client</li> <li>› NAT</li> </ul>	<ul style="list-style-type: none"> <li>› VLAN ID, VLAN tagging</li> <li>› VPI/VCI</li> <li>› IP release</li> <li>› Multi-VLAN support</li> </ul>
<b>Throughput test</b>	<ul style="list-style-type: none"> <li>› Methods supported: Speedtest by Ookla, iPerf3</li> <li>› Address: auto-configured for Speedtest, URL or IPv4 address for iPerf3</li> <li>› Direction: upload and/or download</li> <li>› Speedtest results displayed: download and upload speed in Mbit/s, ping in milliseconds (ms), host, location, country and sponsor</li> <li>› iPerf results displayed: download and upload speed in kbit/s</li> </ul>	
<b>Ping test</b>	<ul style="list-style-type: none"> <li>› Ping destination: gateway, IPv4 or IPv6 address or URL</li> <li>› Number of pings: 1 to 99</li> <li>› Packet size: 32 to 1200 bytes (32 is default)</li> <li>› Timeout period: 1 to 10 s</li> <li>› Results displayed: packets sent/received and average round-trip delay (ms)</li> </ul>	
<b>Traceroute test</b>	<ul style="list-style-type: none"> <li>› Traceroute destination: gateway, IPv4 address or URL</li> <li>› Timeout period: in seconds, default is 1 s, maximum is 10 s</li> <li>› Packet size: 32 bytes</li> <li>› Number of hops: 1 to 32 (default is 30)</li> <li>› Results displayed: indicates IPv4 address of hop and round-trip time in ms</li> </ul>	
<b>FTP test</b>	<ul style="list-style-type: none"> <li>› Address: IPv4 address or URL</li> <li>› Direction: upload and/or download</li> <li>› Results displayed: time, kB transferred, bit rate in kbit/s</li> </ul>	
<b>HTTP test</b>	<ul style="list-style-type: none"> <li>› Address: URL</li> <li>› Direction: download</li> <li>› Simultaneous download sessions: 1 to 4</li> <li>› Results displayed: kB transferred, bit rate in kbit/s</li> </ul>	
<b>WiFi scanning (option)</b>	<ul style="list-style-type: none"> <li>› 2.4 GHz support</li> <li>› View channel number, SSID, MAC address, RSSI value</li> <li>› Sort by channel number or RSSI value</li> </ul>	
<b>Web browser</b>	<ul style="list-style-type: none"> <li>› Address: IPv4 address or URL</li> <li>› Bookmarks: user-definable</li> </ul>	
<b>VoIP testing (software option)</b>	<ul style="list-style-type: none"> <li>› Protocol support: SIP (IPv4)</li> <li>› Codecs: G.711 <math>\mu</math>-Law, G.711 A-Law</li> <li>› Interface support: ADSL1/2/2+, VDSL2, Gfast, Ethernet</li> <li>› Parameter/functionality: <ul style="list-style-type: none"> <li>– Test duration timer</li> <li>– MOS (current, average)</li> <li>– R-Factor (current, average)</li> <li>– Latency (current, average, maximum)</li> <li>– Jitter (current, average, maximum)</li> <li>– Packets (lost, total)</li> </ul> </li> </ul>	
<b>IPTV testing (software option)</b>	<ul style="list-style-type: none"> <li>› Supported video standards: MPEG2, MPEG4 part 2 and 10 (H.264/AVC), Mediarem/WM9/VC1</li> <li>› Operating modes: DSL Terminate and Ethernet Terminate</li> <li>› IPTV parameters/functionality: <ul style="list-style-type: none"> <li>– IGMP version 2 and 3 (IPv4) join/leave requests with STB emulation</li> <li>– Automatic tests to join/leave and analyze up to 5 (five) simultaneous streams</li> <li>– Programmable channel list for storage of commonly used channels</li> <li>– Bandwidth usage per channel</li> <li>– IGMP (IPv4) packet and rate information per line and channel</li> <li>– Multicast RTP/UDP IP stream support</li> <li>– Key IP video QoS parameters, packet loss, zap time, PID statistics</li> <li>– Graphical results</li> <li>– Transport</li> </ul> </li> </ul>	



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**GENERAL SPECIFICATIONS**

Display	Touchscreen TFT LCD with backlight 152 mm (6 in) diagonal 800 x 480 resolution, WVGA
Test connections	RJ11 for Gfast/ADSL2+/VDSL2 RJ45 for Ethernet 10/100/1000 WAN RJ45 for Ethernet 10/100/1000 LAN
Results management	1.2 GB internal memory
Temperature	
Operating	0 °C to 40 °C (32 °F to 104 °F)
Storage	-20 °C to 60 °C (-4 °F to 140 °F)
Relative humidity	5 % to 95 %, non-condensing
Shock	1 m (39 in) drop per GR-196-CORE
Altitude	3000 m (9842 ft)
Input power	12 VDC, 4.16 A, 48 W via 90-264 VAC adapter
Battery	Internal rechargeable lithium polymer, with battery-state and level indications, adjustable auto-power down
Safety	CE and CSA marked
Size (H x W x D)	254 mm x 124 mm x 62 mm (10 in x 4 7/8 in x 2 7/16 in)
Weight (with battery)	1.5 kg (3.3 lb)
Water/dust ingress	IP54 compliant
Self-test	Routine on power-up
Connectivity	Two USB 2.0 client ports One USB Type B host port Optional WiFi support
Languages	English, French, German, Italian, Polish and Spanish

**STANDARD ACCESSORIES**

DSL test cables: RJ14 to RJ11 and telco clip with bed of nails (ACC-RJ11-TC), or  
RJ14 to RJ11 and 4 mm plugs with crocodile clips (ACC-RJ11-4MM)

Certificate of compliance

AC adapter (ACC-48WPS)

Soft carrying case (GP-10-061)

**OPTIONAL ACCESSORIES**

DSL bonded test cables: RJ14 to dual RJ11 (ACC-BD-RJ), or  
RJ14 to four telco clips with bed of nails (ACC-BD-TC), or  
RJ14 to four 4 mm plugs with crocodile clips (ACC-BD-4MM)

RJ45 Ethernet cable (ACC-RJRJ-UTP)

USB host/client cable (GP-2053)

12 V vehicle charger (ACC-12VLGB)

Form fitting, protective soft glove with shoulder strap (ACC-LGLOVE)

Bluetooth Nano USB Dongle V4.0 + EDR (GP-2260)

MAX-600 Screen Protector Film (Pkg 2) (GP-2272)

RJ11 to Coax Balun for Gfast operation over in-home coaxial networks (ACC-GFAST-BALUN)



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## ORDERING INFORMATION

## MAX-630G-XX-XX-XX

**Model**

MAX-630G = ADSL2+ test set

**DSL Version**

GVXAA = ADSL2+ Annex A

GVXAB = ADSL2+ Annex A+B

**Platform Options**

00 = Without software options

FTPUPLD = Result upload via FTP over WiFi, Ethernet or DSL

**Software Options**

00 = Without software options

BOND = ADSL2+ and VDSL2 bonding support<sup>a,e</sup>

GFAST = Gfast modem emulation

IPTV = IPTV analysis

IPV6 = IPv6 support for LAN/WAN connectivity

MOS = MOS/R-factor for VoIP calls<sup>b</sup>

VDSL2MOD = VDSL2 modem emulation

VDSL2-35B = VDSL2-35b profile support<sup>c</sup>

VOIP = VoIP emulation

SPEED = Bandwidth Speed test<sup>d</sup>

WIFI = 2.4 GHz WiFi scanning capability

MPP = Combines IPTV, VOIP, and MOS options

Example: MAX-630G-GVXAA-FTPUPLD-VDSL2MOD-GFAST-BOND-IPTV

**Notes**

- VDSL2MOD option required to enable VDSL2 bonding capability
- VoIP option required
- VDSL2MOD option required to enable VDSL2-35b capability
- SPEED included with base unit
- BOND option not available for GVXAB version

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