MaxTester 630

ADSL2+/VDSL2 MULTIPLAY TESTING MADE EASY

EXFO Sync

EXFO Connect Compatible

A fast, easy-to-use and cost-effective solution for installing multiplay services over DSL and Ethernet.

KEY FEATURES AND BENEFITS

Supports ADSL2+ and VDSL2 bonding, allowing service providers to recover and grow wireline revenues

Supports ADSL2+ ATM/PTM and VDSL2 single-pair testing for hybrid networks

IPTV and VoIP test suites for automated quality of service (QoS) testing

Data testing and Web browser for complete service qualification

Configurable pass/fail results for automated testing; upload results to the Cloud for post-analytics

Designed to face the challenges of the outside plant environment with an IEC IP54 rating

Supports vectoring and G.INP for operators looking to mitigate self-FEXT (far end crosstalk) and promote DSL stability

THE MAXTESTER 600 SERIES

MAX-610
Copper Test Set

MAX-635
Copper, xDSL and
Multiplay Test Set

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A NEXT-GENERATION TOOL FOR BROADBAND DEPLOYMENTS

EXFO's MaxTester 630 is the perfect tool for any service provider deploying multiplay services over single-pair or bonded ADSL2+ and/or VDSL2. Its small form factor, rugged design and easy-to-use menu make it the ideal tool for installation and repair technicians. With the MaxTester 630, the testing process is highly automated and technicians close their jobs quickly and efficiently. The large display of the MaxTester 630 makes it even more user-friendly, and when it comes to saving results, it provides technicians with many connectivity options for uploading tests and compiling reports.

TEST HYBRID ADSL1/2/2+, VDSL2 AND NEWLY DEPLOYED BONDED DSL NETWORKS

The MaxTester 630 is based on the industry-leading Broadcom chipset, which ensures excellent interoperability for VDSL2 and ADSL2+ hybrid networks. The MaxTester 630 also supports the use of Broadcom's ADSL2+ Nitro mode to negotiate with Broadcom-based DSLAMs in order to achieve data rates as high as 30 Mbit/s (depending on DSLAM setup, loop length, noise influences and circuit quality). Nitro™ is a Broadcom approach that increases the throughput on links by compressing the ADSL2+ ATM header and as a result, requires fewer bits to be transmitted.

Ensuring the highest quality triple-play services to customers is a must for service providers, but it is also a challenge with an aging copper plant and the need to maximize the use of all pairs in the cable bundle. Service providers can offer higher rate/reach by implementing ADSL2+ and/or VDSL2 bonding (using two copper pairs as defined within ITU-T G.998.1, 2) to increase the available data rates and/or the loop lengths to address a new customer service area. Another industry standard method that helps achieve high-quality multiplay is to take noise mitigation to the next level through G.INP (impulse-noise protection and physical-layer retransmission as defined by ITU-T G.998.4) and vectoring (ITU-T G.993.5). These techniques are supported by the MaxTester 630 to ensure consistency with service providers' noise mitigation methods and procedures.

KEY DSL APPLICATIONS

› Ensures that customers have the required bandwidth (downstream and upstream rates) for delivering triple-play services over single-pair or bonded ADSL2+ and VDSL2

› Validates that the IPTV, VoIP and data services can operate on the circuit with the required QoS

› Verifies that the customer's modem/router, equipment and inside wiring are operating correctly

› Proves IPv4 and IPv6 data flow between the network and the end equipment

KEY CHARACTERISTICS

1. Dual Ethernet connectors—sealed against the environment
2. DSL connector—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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SIMPLIFYING FTTx TESTING

Thanks to its DSL and dual Ethernet ports, the MaxTester 630 is a flexible tool for service providers qualifying service from the central office or remote terminals to the customer's equipment. The MaxTester 630 also provides powerful troubleshooting applications that can be used in different modes to quickly isolate faults no matter where they are located (network, outside plant, customer equipment or inside wiring). Even in hybrid networks, where FTTH is also deployed, the Ethernet ports of the MaxTester 630 can be used inside the home to test at any point where a LAN connection is available.
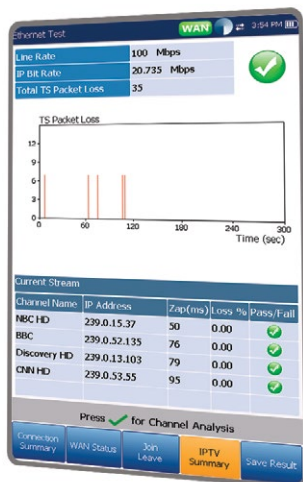
IPTV TESTING

To boost their revenues, many service providers are using DSL to deliver new multiplay services on their existing networks. Among these services, video (IPTV) is one of the fastest growing and is getting a high level of focus and investment. Knowing that customers are very sensitive when it comes to IPTV QoS (i.e., picture quality due to packet loss, zap time, etc.), technicians must be equipped with the right test sets to quickly and efficiently turn up IPTV services and meet customers' QoS expectations. With this in mind, the MaxTester 630 offers an optional IPTV test suite to provide both expert and entry-level technicians with a simple method to check the operation and quality of the offered video channels.
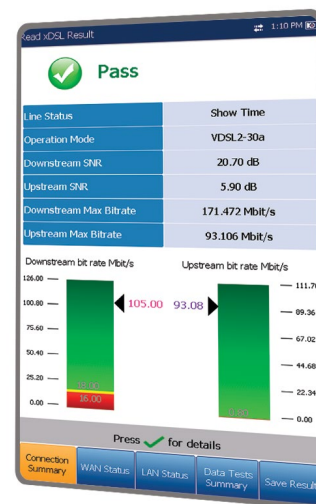
WEB BROWSER

Many telcos require that technicians use a Web browser to confirm service operation or as visual proof to show the customer. Up to now, technicians required a PC in addition to the test set to do this. Thanks to the integrated browser of the MaxTester 630, carrying a laptop to the job location is no longer necessary. The MaxTester 630 is equipped with a browser that allows the user to access websites and load a web page as part of any automated test, directly from the test set. Just as with any other browser, it can bookmark commonly used URLs and allows the user to save new ones in real time as needed.

VoIP TESTING

The MaxTester provides SIP-based, voice-over-Internet protocol (VoIP) performance validation for service turn-up and troubleshooting. The VoIP function allows users to send or receive live VoIP calls to an FTB EXpert VoIP-enabled platform or IP phone. The MaxTester supports industry-recognized quality metrics (e.g., mean opinion score or MOS, R-factor) and performance metrics (e.g., latency, jitter).

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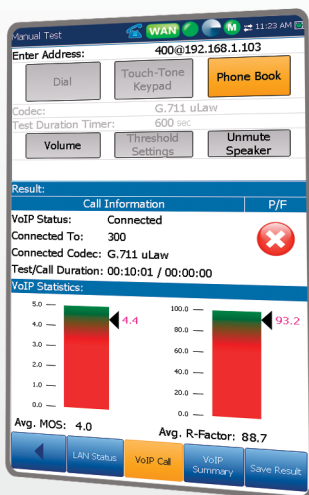
ALL THE RIGHT FEATURES FOR INSTALLATION TECHNICIANS

With its small form factor, the MaxTester 630 can go anywhere the technician needs to go. It is rugged and light, and all connectors are protected from the rain—just what is needed for the demanding outside-plant environment.

Automated Service Testing

Thresholds can be set and saved for key DSL parameters as well as for the data and IPTV service tests. When tests are run, users are given a clear graphical pass/fail result so they can quickly move on to the next job or investigate further. Test profiles can easily be transferred between units to ensure that all technicians from the same organization are testing to the same thresholds.

Easy-to-Use GUI

The next-generation user interface of the MaxTester 630 was designed with first-level technicians 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 users.
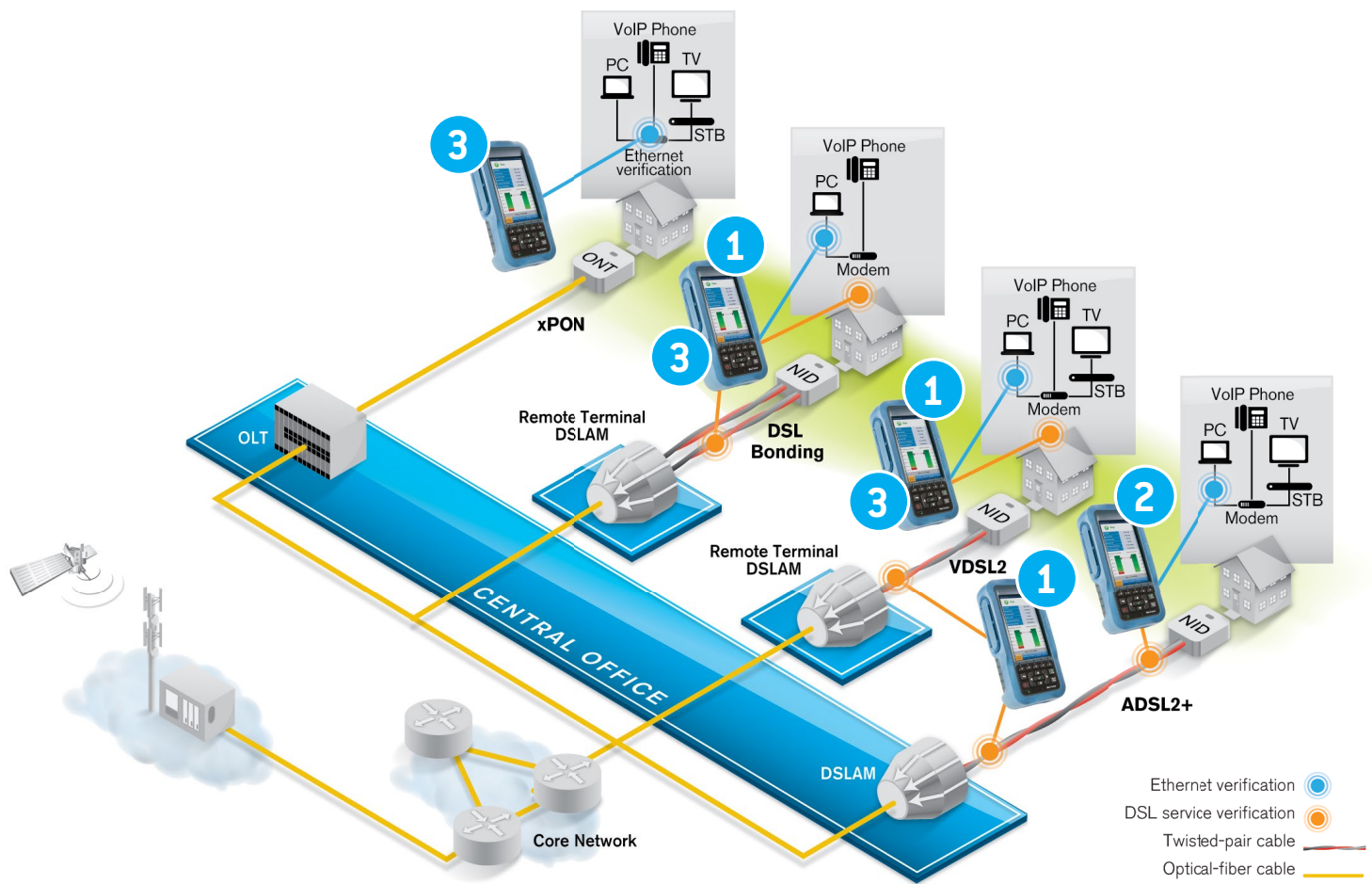
Asset and Results Management

In today's highly competitive environment, quality of service delivered to subscribers is paramount for service providers. With a solution such as EXFO Connect and EXFO Sync combined with the MaxTester 630, service providers can manage their fleet of MaxTester units and ensure that they have the most up-to-date software installed and properly configured. These solutions on the MaxTester 630 also make it possible for service providers to have test results in hand for data mining and post-analytics, thereby enabling them to proactively manage loop plants and ensure that they are of the highest quality.

Battery-Powered

The MaxTester 630 is equipped with a battery using the latest technology in rechargeable cells. It provides the maximum testing time between charges—even when meeting the high-power demands of VDSL2. When charging is required, technicians can either use the optional 12 Volt vehicle charger or the supplied AC adapter.

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MaxTester 630 OPERATIONAL MODES

Ethernet verification ●
DSL service verification ●
Twisted-pair cable
Optical-fiber cable

1 ADSL2+/VDSL2 Terminate Mode

The MaxTester 630 synchronizes with the DSLAM on the circuit in the outside plant or at the NID, allowing authentication and service testing. Technicians can test ADSL2+ and VDSL2 single pair, ADSL2+ and VDSL2 bonding, as well as ADSL2+ PTM modes.

2 xDSL Pass Through Mode

The MaxTester 630 replaces the customer modem or router, synchronizes with the DSLAM, and enables authentication and service testing. It also allows the customer's applications to be used to confirm the correct operation for services such as PC Web access, IPTV viewing, STB operation and VoIP.

3 Ethernet Terminate Mode

The MaxTester 630 automatically synchronizes with 10/100Base-T ports inside the customer premises and allows authentication as well as service testing. In this configuration, the MaxTester 630 can be used in xDSL (FTTN), xPON (FTTH) or Ethernet deployments.

EXFO|Connect

AUTOMATE ASSET MANAGEMENT.
PUSH TEST DATA IN THE CLOUD. GET CONNECTED.

The EXFO Connect cloud-hosted solution provides an automated, secure environment that links your EXFO test instruments together and centralizes captured data across your organization, with the ability to leverage this information to improve your business processes.

With its powerful correlation engine, EXFO Connect allows you to convert captured data into actionable information through customized test-data reporting and features that streamline test operations from build-out to maintenance. Enable EXFO Connect on your fleet of MaxTester units to improve your operational efficiency at all levels of your business.

PART OF THE KEY FEATURES

TEST EQUIPMENT MANAGER
Automated inventory tracking and software download

REPORT MANAGER
Powerful filtering capabilities, multiple export options and customizable templates

TEST DATA MANAGER
Automated upload of test results to a dynamic database for customized reporting

CONTRACTOR MODE
Secure, segregated access for test-result upload, and automated file download

FILE MANAGER
Download/upload files, work orders, test configurations or procedure documents

Visit **EXFO.com/EXFOConnect** for details and features compatibility with the MaxTester handheld series.

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

EXFO Sync

Working in the field with an Android device?
Download the EXFO Sync Application for Your Android*

EXFO Sync is an Android application that operates together with EXFO's MAX-630 Copper, DSL and IP field test set. This application provides a fully automatic copper test script and Wi-Fi transfer of the results files to a phone or tablet for upload to the customer's server.

With the EXFO Sync application, 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 HTTPS or FTP server
› Secure, password-protected connection to upload and access results

* Upload to Android devices is supported only over Wi-Fi and only for DSL autotests.

Download from
Google play

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DSL SPECIFICATIONS

DSL chipset	Broadcom	
Standards compliance	ADSL1/2/2+	ITU-T G.992.5 (ADSL2+ including Annex A, B, J, M)
		ITU-T G.992.3 (ADSL2 including Annex A, B, J, L)
		ITU-T G.992.1 (G.DMT including Annex A, B)
		ITU-T G.994.1
		ATIS/ANSI T1.413 Issue 2
		IEEE 802.3ah (PTM)
		ITU-T G.998.1, 2 (ATM, Ethernet bonding)
		ITU-T G.998.4 (G.INP)
		DT 1 TR 112 U-R2
	VDSL2	ITU-T G.993.2 Annex A, B, Y
		Profiles: 8a/b/c/d, 12a/b, 17a, 30a
		Band Plan: 997, 998, US0
		IEEE 802.3ah (PTM)
		ITU-T G.998.2 (Ethernet bonding)
		ITU-T G.998.4 (G.INP)
		ITU-T G.993.5 (G.Vector)
		DT 1 TR 112 U-R2 (U-RV2)
DSL parameters	Maximum attainable bit rates	Interleave depth
	Actual achieved bit rates	Interleave delay
	Actual bonded achieved rates	Trellis coding
	Latency modes: fast, interleaved	Bit swapping
	Data modes: ATM, PTM	INP
	Capacity (%)	Nitro
	Signal-to-noise ratio (SNR) margin	PhyR, G.INP state, performance counters
	Output power	Vectoring state, performance counters
	Attenuation	Modes: PTM, ATM, Nitro
	Bits/bin	LOS, FEC, CRC, HEC
	Attenuation/bin (Hlog/bin)	LATN per band
	QLN/bin	SATN per band
	SNR/bin	EWL
	Vendor code, revision	KL0

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MULTIPLAY TESTING SPECIFICATIONS

Test interfaces	› VDSL2	
	› ADSL1/2/2+	
	› Ethernet 10/100 BT	
Encapsulation methods	› RFC 2684/Bridged Ethernet/IPoE (IPv4 and IPv6)	› PPPoE (RFC 2516)
	› IPoA (RFC 1577)	› PPPoA/LLC and PPPoA/VC-MUX (RFC 2364)
Operating modes	› DSL Terminate	› Ethernet Terminate
	› Modem Replacement (DSL to Ethernet) Pass Through	
Login format	› User name and password using PAP/CHAP	
Connectivity support	› IPv4 and IPv6 LAN/WAN status	› VLAN ID, VLAN tagging
	› IPv4 and IPv6 DNS, gateway	› VPI/VCI
	› IPv4 DHCP client/server, DHCP vendor class	› IP release
	› IPv6 DHCP client	› Multi-VLAN support
	› NAT	
Ping test	› Ping destination	› Gateway, IPv4 or IPv6 address or URL
	› Number of pings	› 1 to 99
	› Packet size	› 32 to 1200 bytes (32 is default)
	› Timeout	› 1 to 10 seconds
	› Results	› Packets sent/received, average round-trip delay (ms)
Traceroute test	› Traceroute destination	› Gateway, IPv4 address or URL
	› Timeout	› In seconds, default is 1 s, maximum is 10 s
	› Packet size	› 32 bytes
	› Number of hops	› 1 to 32 (default is 30)
	› Results	› Indicates IPv4 address of hop and round-trip time in milliseconds (ms)
FTP test	› Address	› IPv4 address or URL
	› Direction	› Upload and/or download
	› Results	› Time, kB transferred, bit rate in kbit/s
Web browser (software option)	› Address	› IPv4 address or URL
	› Bookmarks	› User-definable
VoIP testing (software option)	› Protocol support	› SIP (IPv4)
	› Codecs	› G.711 μ-Law, G.711 A-Law
	› Interface support	› ADSL1/2/2+, VDSL2, Ethernet
	› Parameter/functionality	› Test duration timer
		› MOS (current, average)
		› R-Factor (current, average)
		› Latency (current, average, maximum)
		› Jitter (current, average, maximum)
		› Packets (lost, total)
IPTV testing (software option)	› Supported video standards	› MPEG2, MPEG4 part 2 and 10 (H.264/AVC), Microsoft Mediaroom/WM9/VC1
	› Operating modes	› DSL Terminate
		› Ethernet Terminate
	› IPTV parameters/functionality	› IGMP (IPv4) join/leave requests with STB emulation
		› Automatic tests to join/leave and analyze up to five simultaneous streams
		› Programmable channel list for storage of commonly used channels
		› Bandwidth usage per channel
		› IGMP (IPv4) packet and rate information per line and channel
		› Multicast/unicast RTP/UDP IP stream support
		› Key IP video QoS parameters, packet loss, zap time, PID statistics
		› Graphical results
		› Transport

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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 ADSL2+/VDSL2
	RJ45 for Ethernet 10/100 WAN
	RJ45 for Ethernet 10/100 LAN
Results storage	1.2 GB internal memory

Temperature
    operating
    storage
	0 °C to 40 °C (32 °F to 104 °F)
	−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	9-24 VDC, 2 A, 15 W via 90-220 VAC adapter or 12 V vehicle 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
Languages	English, French, Spanish, Polish and Italian

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 (GP-2146)

Soft carrying case (GP-10-061)

OPTIONAL ACCESSORIES

DSL bonded test cables: RJ14 to dual RJ-11 (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)

RJ-45 Ethernet cable (ACC-RJRJ-UTP)

USB host/client cable (GP-2053)

12 V vehicle charger (GP-2205)

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

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ORDERING INFORMATION

MAX-630-XX-XX-XX

Model
MAX-630 = ADSL2+ test set

Platform Options
00 = Without software options
FTPUPLD = Result upload via FTP over Wi-Fi or DSL

DSL Version
V2XAA = ADSL2+ Annex A
V2XAB = ADSL2+ Annex A + B

DSL Software Options
00 = Without software options
VDSL2MOD = VDSL2 modem emulation
BOND = ADSL2+ and VDSL2 bonding support [a, b]
IPTV = IPTV analysis
IPV6 = IPv6 support for LAN/WAN connectivity
BROWSER = Web browser
VOIP = VoIP Emulation support (Ethernet and DSL ports)
MOS = MOS/R-factor for VoIP calls [c]

Example: MAX-630-00-V2XAA-VDSL2MOD-BOND-IPTV

Notes

a. VDSL2MOD option required to enable VDSL2 bonding capability.

b. ADSL2+ bonding or ATM bonding not available with V2XAB.

c. VoIP option required.

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