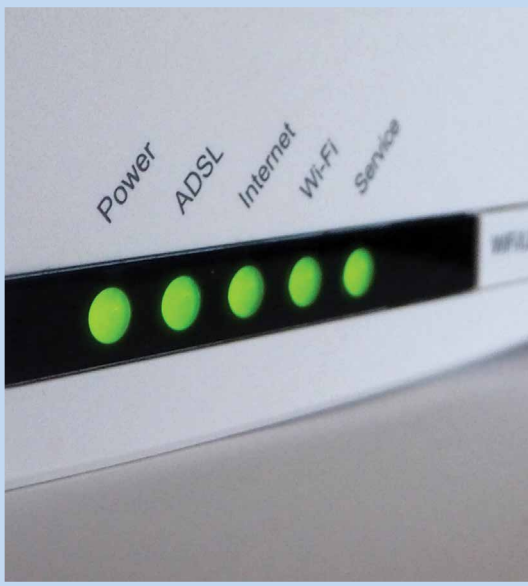
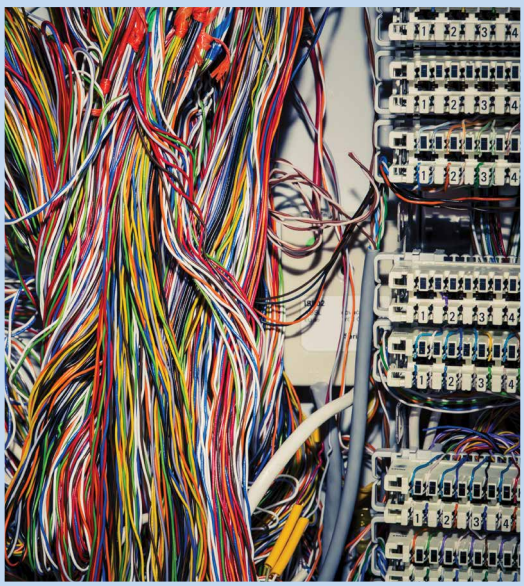
RADIODETECTION®

In today's connected world, getting your customers online and keeping them online is your number one priority

The new 6100 TDRs from Radiodetection are the perfect network analysis tools to detect faults and for rapid service turn-up





SPX®

6100-Cu

The smarter copper tester

The perfect tool for copper network testing

The 6100-Cu is designed for the installation, maintenance and repair of voice and DSL circuits. Its easy-to-use menus, rugged design and small form factor make it the ideal tool for network technicians. The large, color, touch-screen display and multiple connection options add to its ease of use and the optional TDR and RFL/K-test allow service providers to scale the product based on existing or new methods and procedures.

With the 6100-Cu, the testing process is highly automated, enabling technicians to close jobs off quickly and efficiently.

Key copper applications

- Detection of potential bottlenecks on subscriber loops to ensure high-quality, consistent and error free multiplay services
- 35MHz spectrum analysis for circuit qualification in any VDSL2 band plan (8, 12, 17, 30 and 35MHz)
- Loop and fault analysis using proven TDR and RFL/K-test techniques for VDSL2 or ADSL2+ prequalification
- Measurement and reporting of suspect voltages, opens, shorts and balance issues from a single end, or utilising an FED that can be remote controlled by the Copper Tester to put the necessary opens and shorts at the end of the circuit under test
- Determination of the maximum ADSL2+ data rates that a copper loop could support, prior to connecting/provisioning the circuit and equipment, with the Data Rate Prediction (ADRP) pre-qualification report.

Copper features

- Multimeter
- Wideband attenuation
- Resistance isolation test (test voltage from 50 V up to 500 V)
- Test noise and PSD up to 35 MHz and impulse noise
- TDR (automatic, manual, xTalk, trace comparison and peak mode)
- Test crosstalk noise (NEXT)
- Bridge test (two- and four-wire RFL)
- K-test (single and repeated mode)
- Intelligent test determines and automatically locates the main physical problems
- FED support for fault location tools and dual-end test.

6100-Gfast

Ultra-broadband installation and maintenance tool

The perfect tool for voice and broadband deployments

The 6100-Gfast products are complete DSL & copper test sets featuring the latest in ADSL2+, VDSL2, and G.fast chipset-based, connectivity technologies covering ITU-G Series 9700 and 9701 recommendations for fast access to subscriber terminals.

Featuring traditional copper measurements (voltage, resistance, capacitance and time domain reflectometry) as well as highly-automated scripted and customisable tests, the 6100-Gfast units offer nearly everything a technician requires.

Key capabilities

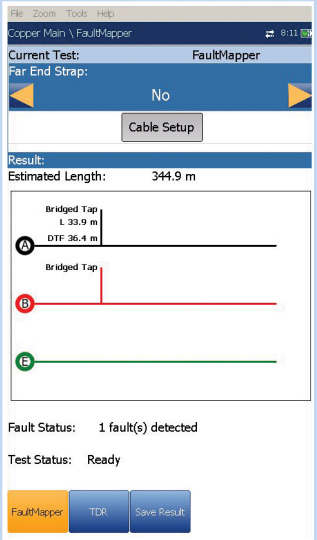
- FTTx / MDU, G.fast, VDSL2 35b and VDSL2 vectored installations
- Bonded-VDSL2 and ADSL2+ deployments
- Multiplay service assurance (Internet, IPTV, and VoIP), including Internet throughput validation using Speedtest™ by Ookla®
- FTTdp deployments
- G.fast-based mobile backhaul, DAS or small cell deployments
- Validate bandwidth performance and speed, using Speedtest™ by Ookla®, HTTP, FTP, or iPerf

DSL features

- Latest-generation Broadcom chipset
- ADSL ITU-T G.992.1/3, G.992.5 Annex A, B, J, L, M U-R2
- VDSL2 ITU-T G.993.2 Annex A, Y; Bands: 997, 998, US0
- VDSL2 vectoring, ITU-T G.993.5
- G.INP, ITU-T G.998.4
- ADSL/VDSL2 bonding ITU-T G.998.1,2
- VDSL2 ITU-T G.993.2 Annex Q profile 35b
- G.fast ITU-T G.9700/G.9701
- Speedtest™ by Ookla®

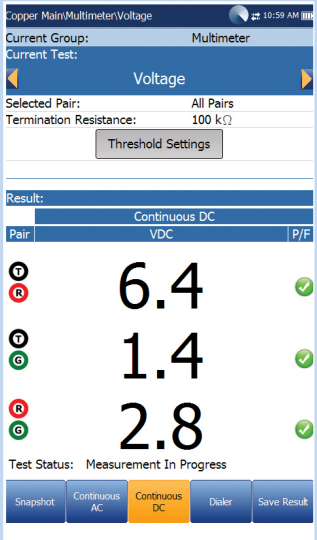
Family-wide features

- 1 GB of internal memory to store results and test profiles
- Shock resistant and splash-proof (IP54)
- Large 6-inch touchscreen color LCD



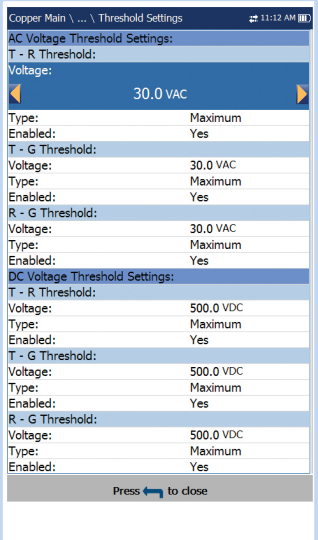
FaultMapper to identify, locate and/or detect the following:

- Shorts
- Grounds
- Opens
- Load coils
- Bridged tap



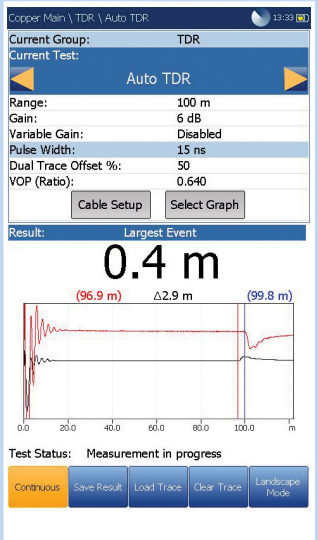
Multimeter functions include:

- AC/DC Voltages and Frequencies
- AC/DC Currents and Frequencies
- Resistance
- Resistive Balance
- Isolation/Leakage
- Capacitance/Opens
- Station Ground
- Stressed Balance



Thresholds are customised for Pass/Fail test indications, including:

- Voltage
- Current
- Resistance



TDR: Auto, Manual and xTalk, offering:

- Live
- Live and Peak
- Peak Only
- Live+Stored+ Differential
- Landscape mode setting for expanded viewing

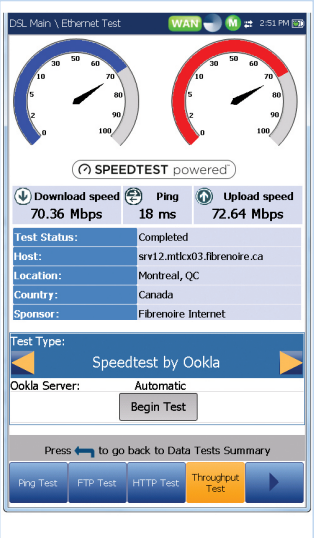
Key 6100 family features and benefits

- Choose single-ended testing or testing with a Far-End Device (FED) to expedite repair time and costs
- Aligns with existing methods and procedures
- Assess the electrical health of the network quickly and efficiently with the full suite of digital multimeter measurements
- Designed to face the challenges of the outside plant environment with an IP54 rating
- Suite of test features allows users to determine physical copper circuit quality and locate faults quickly and accurately, in addition to performing high-voltage balance testing on inactive pairs

- Optional TDR and RFL/Küpfmüller-test allow service providers to scale the product based on existing or new methods and procedures
- Configurable pass/fail results for automated closeout testing

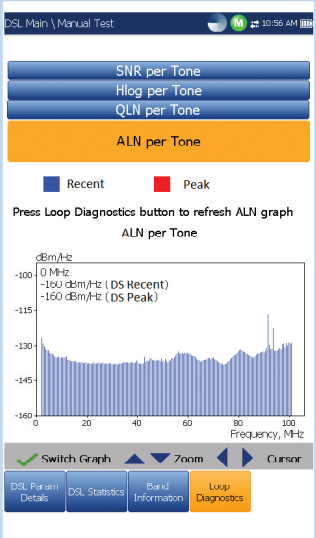
Other copper tests and information provided by the 6100 family include:

- RFL and Küpfmüller (K-Test)
- FED control
- Noise including VF Impulse, WB PSD and Power Influence
- Frequency including VF/AC Balance, WB Attenuation and Return Loss
- Customizable POTS auto tests to detect the loop current and measure the voice frequency parameters in a copper telephone loop



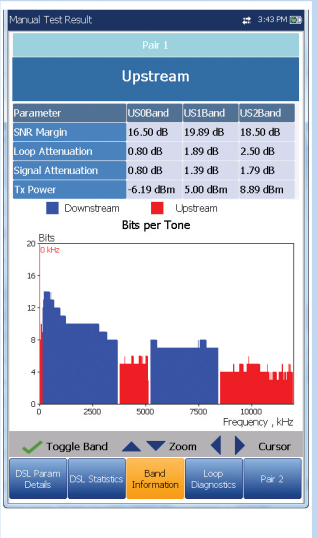
Throughput Test, choose from either iPerf3 Test or Speedtest™ by Ookla®. Configurable parameters include:

- Ookla: Select specific or default server, edit server and add/remove server
- iPerf3: add server URL, IP address or server port and set test duration



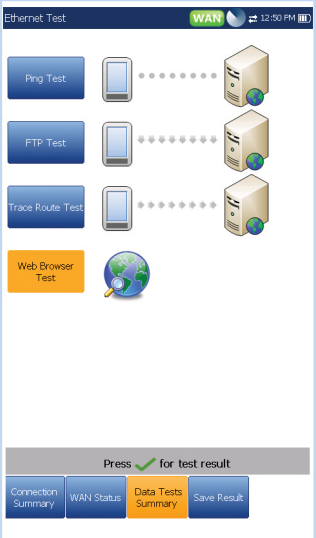
The **Loop Diagnostics** tab displays the characteristics and potential problems on the line, in graphical format. When relevant info is available from the DSLAM:

- Upstream and downstream diagnostic data is displayed graphically in different colors to enhance problem-detection
- 4 separate graphs are shown for each pair in G.fast mode



Band Information allows you to view a list of individual upstream or downstream band parameter details:

- Upstream and Downstream parameters are shown
- One page/pair in Bonding mode
- SNR Margin, Loop Atten (VDSL), Signal Attenuation (ADSL, G.fast), Tx/Output Power and KL0



Data Test Summary displays the pass/fail status of the selected data tests enabled in the connection setup including:

- Ping test
- FTP test
- Trace Route test
- Web Browser test

Other DSL/IP tests and information provided include the following:

- Connection Summary tab shows the pass/fail status and details of the test results that have been run
- Ethernet Connection Summary provides WAN/LAN Port Line Status and Link Speed, plus Bytes, Packets and Errors
- The WAN Status tab shows the status information of the connection between the WAN port of the 6100-Gfast and the ISP. Also select which triple-play test to run or view
- The LAN Status tab displays the LAN pass/fail status and parameters. Also the Bytes, Packets and Errors
- The 6100-Gfast products even allow VoIP Calls. Place and receive VoIP calls while displaying phone numbers, call status, and statistics

Key 6100-Gfast features and benefits

- G.fast with backwards compatibility to VDSL2 and ADSL2+ in one test tool
- Spectrally compatible VDSL2 35b support as well as VDSL2 and ADSL2+ bonding
- Minimising retraining requirements by keeping with existing methods and procedures is easy with single-ended testing or via testing with a FED, including high-voltage stressed balance testing
- High resolution 6-inch touchscreen with dual 1 GigE ports and single test lead connection supporting both G.fast/DSL and copper testing to 35 MHz bandwidth
- Future-proofing for operators today with support for enhanced ADSL2+, VDSL2 and VDSL2 35b, single pair and bonding, in addition to copper testing capabilities
- Large touchscreen display and intuitive menus for high ease of use
- Small form factor, rugged design and clear pass/fail test results allow technicians to close their jobs quickly and efficiently
- Designed to face the challenges of the outside plant environment, with an IP54 rating

Application/Feature	10/6100-Cu	10/6100-Gfast	10/6100-Gfast-Bond
All copper measurements, including Multimeter, TDR & RFL	✔	✔	✔
ADSL Annex A, L, M		✔	✔
ADSL Annex B, J		✔	
VDSL2 Annex A, B, Q, Y		✔	✔
VDSL2 8a/b/c/d, 12a/b, 17a, 30a		✔	✔
VDSL2 Annex Q/35b		✔	✔
G.fast G.9700/9701		✔	✔
ADSL2+/VDSL2 Bonding			✔
G.Vector, G.INP		✔	✔
Bits, SNR, Hlog, QLN/Bin graphs		✔	✔
3Play IP data tests		✔	✔

6100 family feature options	6100-Cu			6100-Gfast 6100-Gfast-Bond		
	Standard	Advanced	Pro	Standard	Advanced	Pro
On-board memory	1.2 GB	1.2 GB	1.2 GB	1.2 GB	1.2 GB	1.2 GB
USB-A (2)	✔	✔	✔	✔	✔	✔
USB-B (1)	✔	✔	✔	✔	✔	✔
DMM - Voltage, Resistance, Capacitance, Current, Ins. Resistance	✔	✔	✔	✔	✔	✔
VF tests - Power Influence, Noise, Impulse Noise, Long. Balance	✔	✔	✔	✔	✔	✔
POTS dialer with integral speaker	✔	✔	✔	✔	✔	✔
SMARTR - Test Suite inc "Pair Detective", "Fault Mapper" and TDR	✔	✔	✔	✔	✔	✔
RFL - RFL Testing and K-test Measurements	✔	✔	✔	✔	✔	✔
WBAND - 35MHz Wideband Testing		✔	✔		✔	✔
NEXT - Near End Crosstalk (NEXT) measurement		✔	✔		✔	✔
SBAL - Stressed Balance Testing		✔	✔		✔	✔
HIVOLT - Extends Isolation Resistance Testing from 125V to 500V			✔			✔
FED - control software for the optional Teletech TS125 FED			✔			✔
TS125 - Teletech TS125 FED Remote Accessory						
1 GigE Ethernet (2)				✔	✔	✔
VDSL2MOD - VDSL2 CPE modem emulation. Includes Vectoring				✔	✔	✔
GFAST - G.Fast modem emulation					✔	✔
BOND - Bonding for ADSL2+ and VDSL2					✔	✔
MPP - Multi-Play Software Bundle, incs Browser, IPTV, VOIP, MOS					✔	✔
VDSL2-35B - VDSL2-35b support						✔

Accessory description	Full part number	Part number abbreviation*	Included with**		
			A	B	C
Cable Set (1 Red & Black, and 1 Green).2mm banana plugs to 4mm crocodile clips	10/6100-CABLE-M4MMRBG	RD-M4MMBRCE	✔	✔	✔
Two-color (Yellow, Blue) cable. 2mm banana plugs to 4mm crocodile clips	10/6100-CABLE-M4MMYB	RD-M4MMYBCE	✔	✔	✔
DSL Test Cable, RJ-11 to RJ-11 and Red/Black crocodile clips	10/6100-CABLE-RJ11-4MM	RD-RJ114MMCE		✔	✔
RJ11-WAN Adapter for ADSL 1/2/2+ Annex B testing	10/6100-RJ11-WAN-ADPTR	N/A		✔	
DSL Bonding Test Cable, RJ-14 to four 4mm plugs with crocodile clip	10/6100-CABLE-BOND-4MM	RD-BD-4MMCE		✔	
DSL Bonding Test Cable, RJ-14 to dual RJ-11	10/6100-CABLE-BOND-RJ14-RJ11X2	RD-BD-RJCE		✔	
Nano anti-shock protector	10/6100-SCREEN-PROTECT	N/A			
DSL Test Cable, RJ-11 to 2x 4mm plugs/crocodile clips	10/6100-CABLE-RJ11-4MMX2	RD-FAST-4MMCE			
Wideband PSD Noise test cable, hi-impedance	10/6100-CABLE-PSD-NOISE-HIZ	N/A			
48W External Power Supply & Charger. 12V, 3.8A (Eu mains cable)	10/6100-MCHARGER-EU	N/A	✔	✔	✔
Teletech TS125 Far End Device (FED)	10/6100-TS125	N/A			
12V/5A vehicle adapter	10/6100-ACHARGER	N/A			

*Abbreviated part number used on some cable labels only. **Included as standard with **A 6100-Cu**, **B 6100-Gfast**, **C 6100-Gfast-Bond**

Software option descriptions	Part number	Notes
FTP Result Upload Capability	10/6100-FTPUPLD	- Includes USB Pico Wi-Fi adapter - Available for Copper auto-test results only - Not available for sale in China
Data Rate Prediction Analysis for ADSL1/2/2+ and VDSL2-17a	10/6100-ADRP	- Requires WBAND software option
Data Rate Prediction Analysis for VDSL2-35b	10/6100-V35DRP	- Requires ADRP software option
Return Loss measurement	10/6100-RLOSS	- Measurement up to 2.2 MHz - Requires WBAND software option
Software support for the Viavi UFED IIB Far End Device	10/6100-UFED	- Software Only. Does NOT include the Viavi UFED IIB Far End Device
IPv6 support for DSL and Ethernet interfaces	10/6100-IPV6	- Allows verification of network login and internet connectivity (ping)

Ordering information:

Configuration & Part Type	Description	Part Number
Standard	Multi-function phone network analyser	10/6100-CU-STD
	Ultra-Broadband phone network analyser, inc Annex B&J	10/6100-GFAST-STD
	Ultra-Broadband phone network analyser, inc xDSL Bonding	10/6100-GFAST-BOND-STD
Advanced	Multi-function phone network analyser with ADVANCED configuration option	10/6100-CU-ADV
	Ultra-Broadband phone network analyser, inc Annex B&J with ADVANCED configuration option	10/6100-GFAST-ADV
	Ultra-Broadband phone network analyser, inc xDSL Bonding with ADVANCED configuration option	10/6100-GFAST-BOND-ADV
Pro	Multi-function phone network analyser with PRO configuration option	10/6100-CU-PRO
	Ultra-Broadband phone network analyser, inc Annex B&J with PRO configuration option	10/6100-GFAST-PRO
	Ultra-Broadband phone network analyser, inc xDSL Bonding with PRO configuration option	10/6100-GFAST-BOND-PRO

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Radiodetection is a leading global developer and supplier of test equipment used by utility companies to help install, protect and maintain their infrastructure networks.

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