

QUICK REFERENCE GUIDE

Menu and Keys

Copper Test

TDR, RFL, DMM, wideband, POTS

System

Software version/options, date/time, power settings

Function Keys

Escape/Back

Power

Standby mode: Hold button for 1 beep

Navigation Keys

xDSL Test

ADSL2+ Annex A/B*, VDSL2

Home

Start/Stop

Enter

Ports

Wan (Ethernet RJ45)

Connect to router/gateway for IP testing

T/A-R/B

Primary interface for copper testing

Earth/Ground

LAN (Ethernet 10/100)

Connect to STB or PC for DSL based IP testing

WAN (DSL)

Connect to ADSL2+/VDSL2 DSLAM. 2 pairs on RJ-11 for bonded tests

T1/A1-R1/B1

Secondary interface for copper testing in 4-wire mode

The MaxTester 635

Copper Testing Cables

T/A–R/B
Primary interface



ACC-M4MM

Earth/Ground



ACC-M4MM

T1/A1–R1/B1
Secondary interface



ACC-M4MMYB

DSL Testing Cables

RJ-RJ-Banana Y-Cable
Primary interface



ACC-RJ11-4MM

DSL Bonding Options*

RJ-Banana Cable

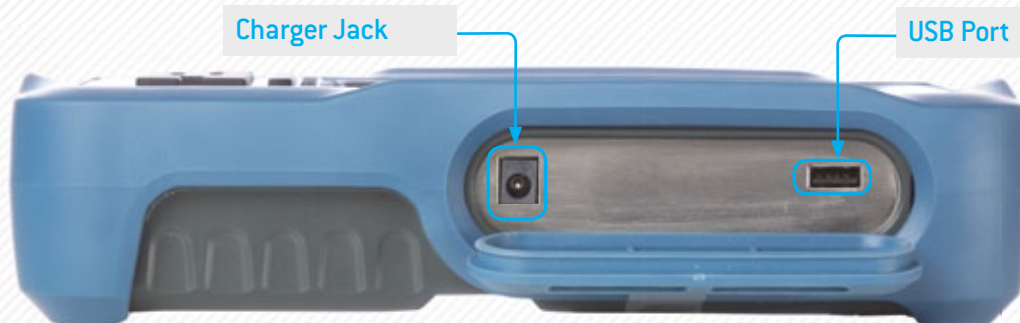


ACC-BD-4MM

RJ-RJ-RJ Y-Cable



ACC-BD-RJ



Charger Jack

USB Port

Copper Testing

Smart-Pair Detective

Quick line check and FaultMapper

Multimeter (DMM)

Volts, current, resistance, isolation, capacitance, station ground

TDR

Time domain reflectometer

RFL

Resistive fault locator

Test Configuration

Preset profiles for threshold values/test settings, etc.



Auto-Test

User test scripts

Noise Tests

Noise, power influence, impulse noise, WB PSD noise, NEXT

Frequency Tests

Balance, attenuation, load coil detector, tone Tx/Rx

Dialer

POTS phone emulator

Read/Export Result

Access to results or export via USB/FTP server

Setup

Temperature, units, termination, filters, etc.

Copper Test Results

Hint

Use CURRENT TEST option to jump directly to another test (resistance, capacitance, etc.)

Threshold Settings

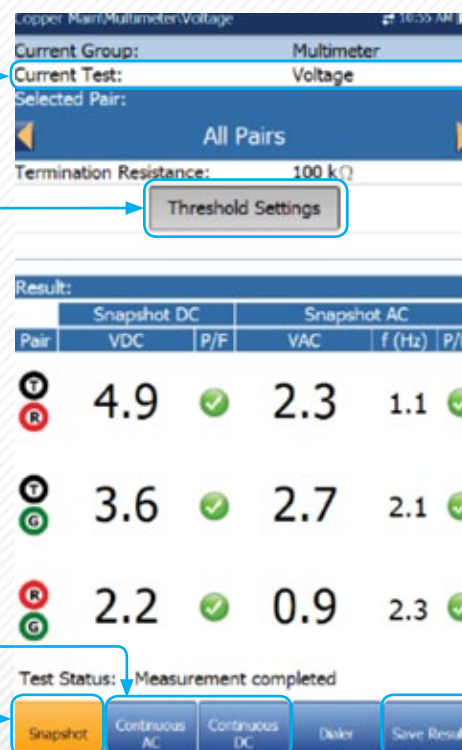
Select to change pass/fail thresholds

Continuous

Select to live test a pair or all pairs

Snapshot (one shot test)

Quick way to check the voltage status of all pairs



Save Result

Store to memory or USB stick

The MaxTester 635

TDR

- › Launched in AUTO mode
- › All ranges scanned and first fault highlighted
- › Choose GRAPH SELECTED to navigate trace

Distance

First detected fault; distance metric is available in feet and meters

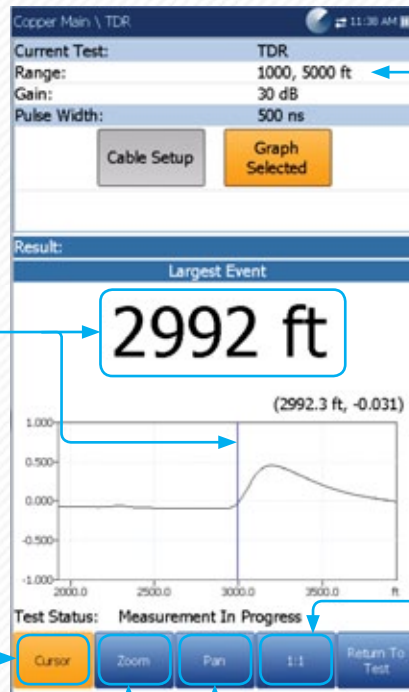
Cursor

To scroll with cursor
HINT: Press ENTER to center cursor on the trace

Zoom

To magnify trace

- ◀▶ Distance
- ⬆⬇ Amplitude



Range

Manual selection of the measurement range

1:1

Restore trace to original aspect ratio

Pan

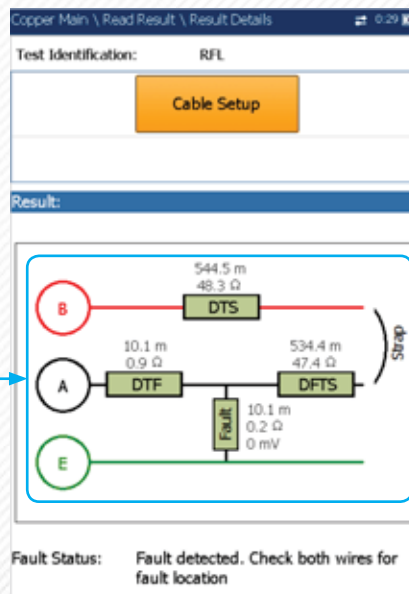
Move trace up/down/left/right using cursor keys

RFL

- › Fault location (Earth/ground contact or battery contact)
- › Strap connection (hard loop) at far end

View Results

DTF = distance to fault
DTS = distance to strap
DFTS = distance fault to strap



Note: A/Tip and B/Ring will be inverted if legs are reversed.

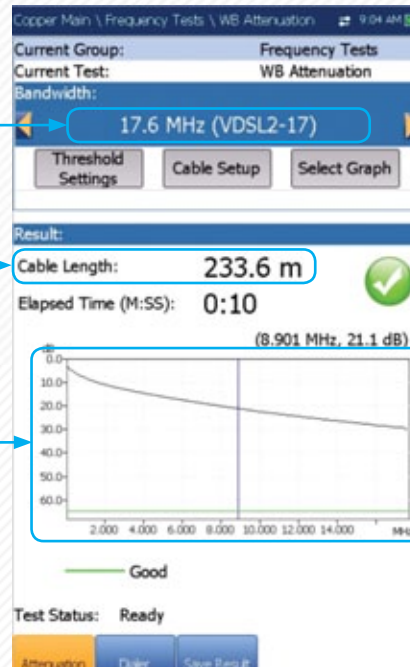
WB SE Attenuation

- > Unique technique used to measure insertion loss (attenuation) across a selected range

Frequency Band Selection
(ADSL2+ 2.2MHz, to VDSL2 30MHz)

Cable Length
View of estimated cable length along with a pass/fail

Graph Selection
Select to move cursor and navigate graph



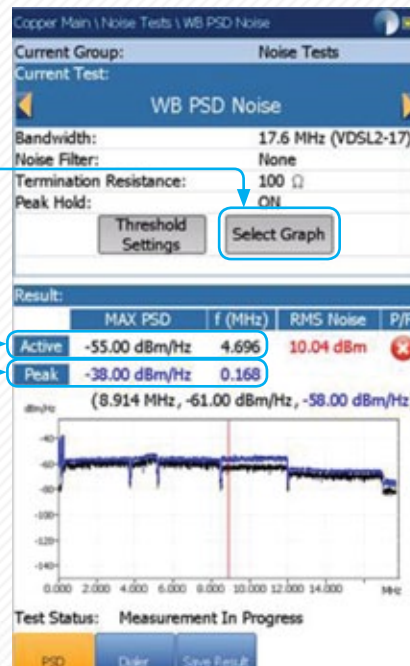
WB PSD Noise

- > Crosstalk/RFI detection from live pairs
- > Frequency band selection (ADSL2+ 2.2MHz, to VDSL2 30MHz)
- > Blue plot shows peak levels since start of test
- > Black plot shows live levels

Graph Selection
Select to move cursor and navigate graph

Active
Live maximum noise level and frequency

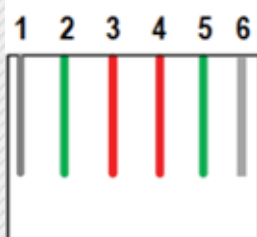
Peak
Historical maximum noise level and frequency measured since start of test



DSL Test Cords



WAN port RJ11 (DSL):



V2XAA MODEL (ANNEX A)		V2XAB MODEL (ANNEX A AND B)	
Black and Red (marked A/T, B/R)	Blue and Yellow (marked A1/T1, B1/R1)	Black and Red (marked A/T, B/R)	Blue and Yellow (marked A1/T1, B1/R1)
PIN 3-4 (RED) used for: <ul style="list-style-type: none"> › ADSL2+/VDSL2 single pair operation › Pair 1 of bonded circuit 		PIN 2-5 (GREEN) used for: <ul style="list-style-type: none"> › ADSL2+ Annex B/VDSL2 single pair operation › Pair 1 of VDSL2 bonded circuit 	
PIN 2-5 (GREEN) used for: <ul style="list-style-type: none"> › Pair 2 bonded circuit 		PIN 3-4 (RED) used for: <ul style="list-style-type: none"> › ADSL2+ Annex A/VDSL2 single pair operation › Pair 2 of VDSL2 bonded circuit 	

Connect to:

- › DSLAM Pair 2 (V2XAA)
- › DSLAM Annex A or Pair 2 (V2XAB)



Connect to WAN (DSL) port of Max-635

Connect to:

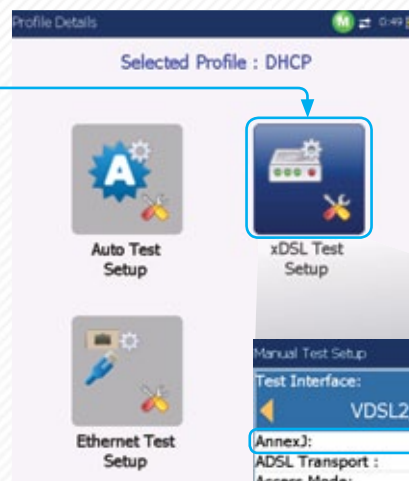
- › DSLAM Pair 1

Test Profile Configuration

- › In the SELECTED PROFILE window, select xDSL TEST SETUP

Test Interface

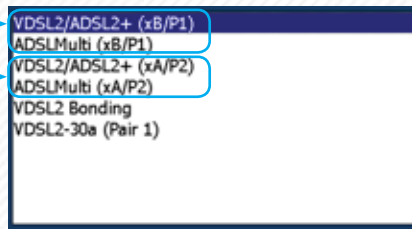
Select and click the appropriate test



For V2XAB Model:

Annex B

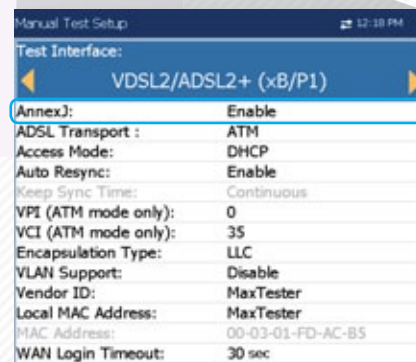
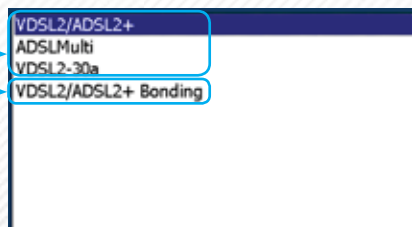
Annex A



For V2XAA Model:

Single Pair

Bonding



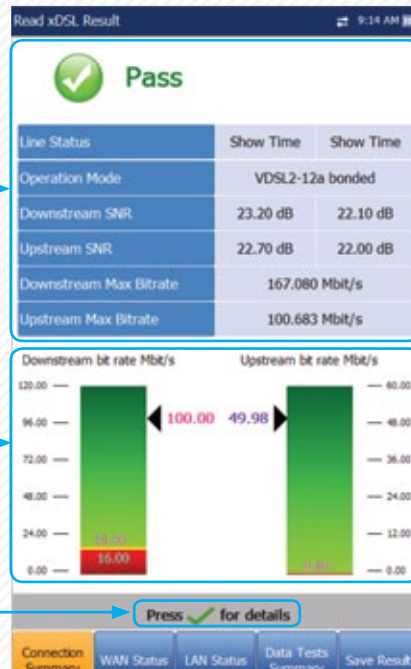
DSL Summary Results Screen

Key Results

DSL line type, upstream and downstream SNRs and max bit rates

Downstream and Upstream bit rates

Press ENTER key for detailed results



Read xDSL Result 9:15 AM

Pair 1

Line Status	Show Time
Operation Mode	VDSL2-12a
CO Vendor ID	BDCM
CO Version	A189
Sync loss count	0

Parameter	Downstream	Upstream
Actual Data Rate	50.000 Mbit/s	24.988 Mbit/s
SNR	23.20 dB	22.70 dB
Attenuation	1.29 dB	3 dB
Capacity	58.4 %	50.3 %
Maximum Data Rate	85.664 Mbit/s	49.631 Mbit/s
Output Power	8.7 dBm	14.5 dBm
Latency	Interleave	Interleave
Interleave Delay	6 ms	4 ms
INP	2	2
Interleave Depth	541	262
Bitswap	Not Active	Active
Trellis	On	On
G.INP	Not Active	Not Active

Press **ENTER** to go to Connection Summary

DSL Param Details | DSL Statistics | Band Information | Loop Diagnostics | Pair 2

DSL Results Details

Manual Test 10:34 AM

DSL Counters	Local	Remote
CRC	0	0
FEC	0	0
Error Seconds	0	0
HEC	0	0

Parameter	Received	Transmitted
Bytes	0	0
Packets	0	0

DSL Transport: PTM

Sync loss count: 0

Vector State: Not Active

KL0: 1.8 dB

EWL: < 230 ft / 70 m

Performance Counters	Local	Remote
G.INP RTX_TX	N/A	N/A
G.INP RTX_C	N/A	N/A
G.INP RTX_UC	N/A	N/A
Vector Err. Samples Sent	N/A	N/A
Vector Err. Samples Dis.	N/A	N/A

Press **ENTER** to reset counters

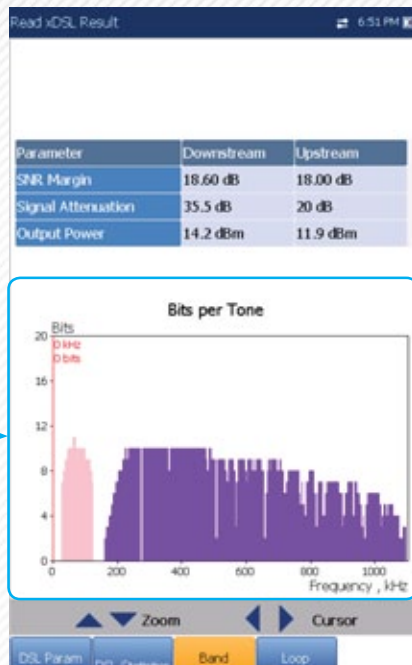
DSL Param Details | DSL Statistics | Band Information | Loop Diagnostics

DSL Statistics

DSL Bits/Bin

Band Information

Illustrates the bits per bin. Move cursor across to the specific carrier (frequency) to view the corresponding bins.



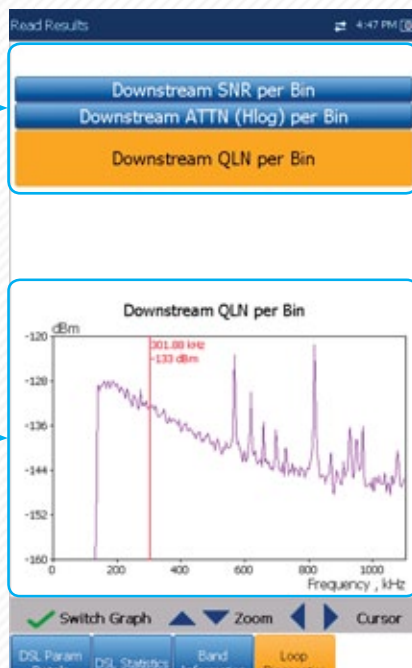
DSL Loop Diagnostics

Press up/down key to select:

- > SNR per bin graph
- > Hlog (or attenuation) per bin
- > QLN per bin graph

Loop Diagnostics

Move cursor across to the specific frequency to view the corresponding value.



EXFO Headquarters > Tel.: +1 418 683-0211 | Toll-free: +1 800 663-3936 (USA and Canada) | Fax: +1 418 683-2170 | info@EXFO.com | www.EXFO.com

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Az Ön mérés-technikai szakértője:



EQUICOM Mérés-technikai Kft.
1162 Budapest, Mátyás király utca 12.
www.equicom.hu | info@equicom.hu