Telebyte

"Results You Can Count On"

VxT-48-DC xTalk Emulator for Vectored VDSL2 Testing

Automated Performance Testing Solution
Simulating Crosstalk on 48 Line Pairs

Vectoring Performance Testing is Here!

Crosstalk Emulator & Loop Simulator in one unit.

- Suitable for VDSL2 Vectoring test cases
- 48 independent loops
- 3 selectable loop line lengths per channel
- FEXT emulation between all loops
- Symmetrical crosstalk matrix
- Micro-Interruptions
- Efficient automation
- Repeatable testing
- Ideal for parallel testing
- Remote control via Ethernet, RS-232, USB or User-friendly GUI

Repeatable • Configurable

Introducing the world's first commercially available Vectoring performance test solution.

VDSL2 Vectoring technology promises to bring a wealth of new opportunities to Service Providers as well as manufacturers of DSLAMs, CPE Modems and Chipsets. This exciting new technology allows for a more efficient utilization of existing copper infrastructure by cancelling the crosstalk between neighboring pairs within a cable. This increases data rates far beyond current levels, making bandwidth-intensive applications such as IPTV and Triple Play available in areas where it was not possible before.

Bringing products and services based on Vectoring technology to the marketplace requires repeatable testing of multiple loops. Until now, breakthroughs in this technology have not been matched by innovations in commercially available testing solutions. The only choices have been Cable Farms where correlating test results from site to site is problematic.

Telebyte's xTalk Emulator is the world's first commercially available solution for physical layer testing of equipment that utilizes VDSL2 Vectoring technology. The VxT-48 offers repeatable and configurable Vectoring performance testing of up to 48 independent loops in one complete unit. Multiple units are ideal for parallel testing to ensure consistent performance from site to site. Our groundbreaking design emulates FEXT between three loop lengths on up to 48 channels.

To schedule an informative, personal webinar contact sales@telebytebroadband.com

Emulation

The VxT-48-DC emulates the symmetric model of the ATIS Multiple-Input Multiple-Output (NIPP-NAI-2009-014R3) on 48 channels (using the upper-left 48 x 48 quadrant of the 100 x 100 random-drawn matrix). It also models crosstalk between xDSL multi-pairs within a cable binder and is sufficient for automatically running test cases for systems with Vectoring capabilities. The simulation accuracy is principally focused on the attenuation of the direct and crosstalk paths rather than the phase/delays.

The crosstalk channel transfer function accuracy is based on FEC coupling transfer function as defined in ATIS-PP-0600024_MIMO_Channel_Model_NIPP-NAI-2009-014R3 with the random drawn matrix for amplitude offset.

The coupling between the pairs is realized using fixed coupling elements between pair [i] and pair [j] for [i],[j] = 1,..,48. The VxT-48 provides independent control of 48 channels. The line section emulates the insertion loss of the following loops:

Loop	Attenuation at 1 MHz	Examples
Loop 1	7.75 ± 1 dB	300 m / 0.4 mm PE 1000 ft / 26 AWG 1200 ft / 24 AWG 400 m / TP100
Loop 2	15.5 ± 2 dB	600 m / 0.4 mm PE 2000 ft / 26 AWG 2500 ft / 24 AWG 850 m / TP100
Loop 3	23.2 ± 3 dB	900 m / 0.4 mm PE 3000 ft / 26 AWG 3800 ft / 24 AWG 1300 m / TP100

Ordering Options

Model	Power	Control
VxT-48-DC	DC	Ethernet, RS-232
Accessories		
VxT-100/240-48VDC	100-240VAC to 48VDC Desktop Converter	

- Custom CAT7 TERA Cables Quoted Upon Request

Specifications

Simulation	• 48 Independent Loops • 3 selectable loop lengths per channel • 1128 crosstalk channels emulate a 48 x 48 coupling matrix
Crosstalk Coupling Dynamic Range (at 3 MHz)	40 dB
Maximum Modem Output Power Allowed	20 dBm
Average Noise Floor	< -143 dBm/Hz
Accuracy Insertion Loss (at 1 MHz)	Loop 1: 7.75 dB +/- 1 dB Loop 2: 15.5 dB +/- 2 dB Loop 3: 23.2 dB +/- 3 dB
Crosstalk Accuracy	Meets all the crosstalk accuracy requirements for P20, P50, P80 and P100 as stated in section 6.3.5, WT-249 working text, Revision 15 September 2013
Remote Control	• RS-232 • USB • IEEE 802.3 Ethernet, including high-level command set for remote control
Micro Interruption	• 2.5 ms minimum • Delay and repeat options
Power Supply	DC power 48 V (100 W maximum) +/- 10%
DC Rating	50 V maximum
xDSL Connection	CAT7 TERA Connectors
Dimensions	355 mm x 465 mm x 278 mm (H x W x D)
Mounting options	Mountable in 19" rack

Specifications are subject to change without notice. Made in USA.