

HST-3000 Handheld Services Tester

Infineon ADSL2+/VDSL2 SIM



Benefits

- Saves money and reduces repeat faults with Triple-Play services testing that supports ADSL1, ADSL2, ADSL2+, VDSL2 (VDSL2 up to 30a profiles) with one module
- Provides BPT, Hlog, and QLN graphing, simplifying isolation of bridged taps, noise, and pair balance problems
- Emulates both modems (ATU-R/VTU-R) and DSLAMs (ATU-C/VTU-C) to test both directions of the span
- Interoperates with the widest range of chipset manufacturers, such as Broadcom, Infineon, and Ikanos, reducing the costs of carrying multiple test modules
- Enables data and services layer testing via PPPoE, PPPoA, IPoE, FTP throughput, web browser, VoIP, and IP Video, making it the right tool for Triple-Play testing
- Choose an optional wideband copper pair module that tests up to 30 MHz for VDSL2

Qualifying a very high speed Digital Subscriber Line (VDSL) service that can transport high definition television (HDTV) and triple-play services requires more than a simple Go/No-Go tester. One lightweight, robust, battery-operated JDSU HST-3000 tester equipped with the Infineon Technologies ADSL/VDSL2 module offers more capability than any other handheld tester on the market. This tester gives both technicians and telco engineers the confidence and the necessary power to complete the job, and get it done right. With one tool, they can test and troubleshoot asynchronous DSL (ADSL)/VDSL2 circuits by emulating either the customer modem (ATU-R/VTU-R mode) or the DSL access multiplexer (DSLAM) (ATU-C/VTU-C mode).

Designed for the outside plant, the Infineon service interface module (SIM) also supports legacy ADSL1, ADSL2, ADSL2+, VDSL1, and VDSL2, making it easy and efficient for technicians to switch between testing technologies without having to swap modules. The Infineon SIM also features powerful Hlog and quiet line noise (QLN) to simplify identifying hard to find noise, crosstalk, pair imbalance, bridged taps, and other copper plant anomalies. The Infineon SIM is also available with dual tip/ring/ground (A/B/E) interfaces for basic and advanced copper troubleshooting to further isolate copper pair problems.

Lightweight, rugged, and battery-operated, the HST-3000 with the Infineon SIM cost-effectively scales to provide an all-in-one solution for field installation, maintenance, and troubleshooting across a wide range of triple-play service test applications.

Efficient, All-in-One Tester

The new Universal xDSL SIM for the HST-3000 tests ADSL1, ADSL2, ADSL2+, VDSL1, and VDSL2 using just one module with Annex A or Annex B compatibility. In addition, this new release can emulate either the customer modem (ATU-R/VTU-R mode) or the DSLAM (ATU-C/VTU-C), making it compatible with a huge range of customer premises (CPE) and DSLAM equipment. Service providers can minimize the costs of their investment in test equipment as well as in DSLAM ports by continuing to offer high-speed data service over single-pair ADSL2+ while turning up new Internet Protocol (IP) video service tiers as they qualify new VDSL2 service areas. JDSU also features additional modules utilizing the widest range of DSL chipsets available on the market, such as Infineon, Ikanos/Conexant, Texas Instruments, and more. A wide range of chipset compatibility allows providers to verify interoperability and to analyze real-world rate-versus-reach performance between the DSLAM and the CPE.

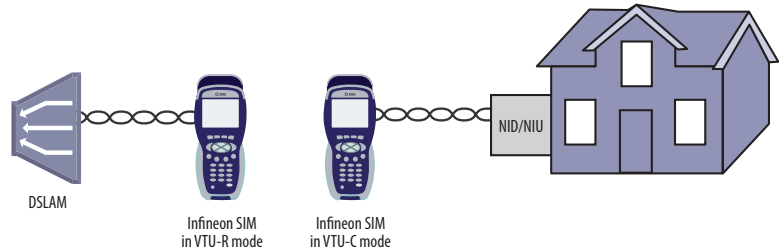


Figure 1: Isolate faulty ports and segments with xTU-R and xTU-C mode connections

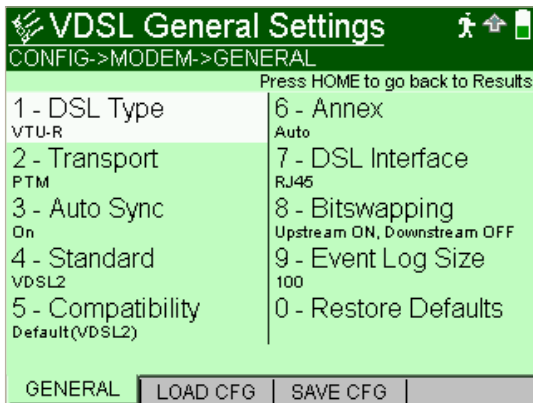


Figure 2: Easy setup for VDSL device type, Transport mode (ATM/PTM), and Annex (A/B), among others.

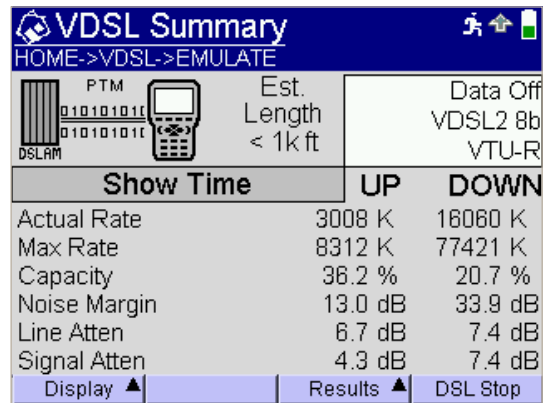


Figure 3: VDSL2 Summary screen

Hlog (Insertion Loss) and QLN Graphs

The Infineon ADSL/VDSL SIM adds powerful new Hlog and QLN graphs to this release. When troubleshooting xDSL services, technicians can view Hlog and QLN graphs to gain insight into trouble sources. A “dip” or “notch” in the Hlog graph indicates a loss in particular bin frequency and may indicate the presence of a bridged tap or a corroded splice, for example. The QLN graph indicates external noise interference where spikes may show noise interference issues impacting a particular band of interest. Users can zoom in or out on all graphs to isolate areas of interest, which provides a key benefit for pinpointing possible sources of trouble. After identifying the trouble source, technicians can find and correct problems using the HST-3000 advanced copper measurement suite, including the spectral analysis meter or precision time domain reflectometer (TDR) or resistive fault locator (RFL) tools.

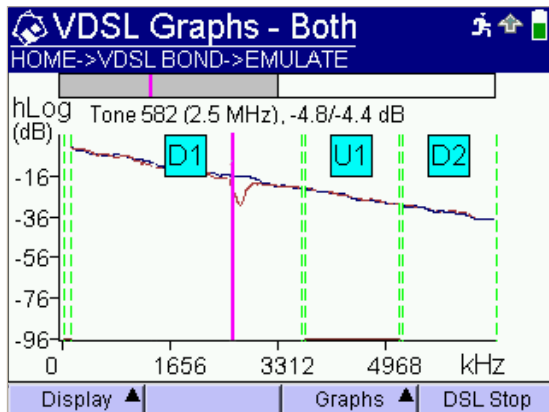


Figure 4: Dual pair Hlog Graph showing likely bridged tap on pair 1 at tone 582.

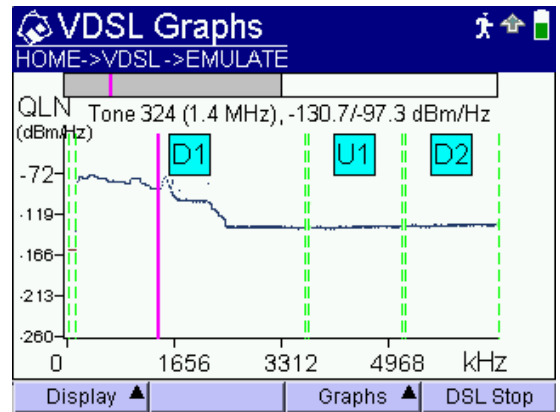


Figure 5: QLN graph showing noise impacting downstream 1 bin

Specifications

Bonded ADSL/VDSL Broadcom Module

Chipset Broadcom

Standard Compliance

VDSL2 ITU-T G.993.2 Bandplans 8, 12, 17, 30 MHz; Profiles 8a/b/c/d, 12a/b, 17a, 30a; Plan 997, 998
 ADSL1/2/2+ Annex A option (over POTS): ITU-T G.992.5 (ADSL2+), ITU-T G.992.3/4 (ADSL2), ITU-T G.992.1/2 (G.DMT) and ANSI T1.413 Issue 2 Annex B option (over ISDN): ITU-T G.992.5 (ADSL2+), ITU-T G.992.3/4 (ADSL2), ITU-T G.992.1/2 (G.DMT) Annex L (RE-ADSL) and Annex M

Modes

ATU-R/VTU-R and ATU-C/VTU-C

All Modes (Single, Bonded Pair ADSL/VDSL2)

Graphs

- BPT
- Combination BPT/SNR Tone
- VDSL Band Statistics
- Hlog
- QLN

Miscellaneous results

- Synchronization (Showtime)
- Failed Synchronization
- Number of Syncs
- Training Time
- Standard Used
- Estimated Loop Length
- Modem Firmware Version

Measurements Upstream/Downstream

- Actual Rate
- Max Rate
- Capacity
- Margin
- Attenuation
- Tx Power
- Connect Method (ADSL only)
- Interleave Delay
- Actual INP
- PSD

Specifications Cont'd
Errors/Performance Local/Remote/Remote (Total)

Loss of Signal
Forward Error Correction (FEC)
Cyclic Redundancy Check (CRC)
Errored Seconds
Severely Errored Seconds
Unavailable Seconds
Miscellaneous results
Annex Type
Number of Syncs
Training Time
Standard Used
Estimated Loop Length
Modem Firmware

Network
Network Modes

Terminate, Through

Network Types

VDSL
IPoE, PPoE, IPv6oE, Multiple VLANs, Data off
ADSL/ADSL2+
IPoE, PPoE, IPv6oE, MVC Video, IPoA, PPOA, Multiple VLANs, Network off
VPI/VCI

IP Mode

DHCP, static

MAC Setting

Factory default, User-defined

Vendor ID

Yes/No

User Class

Yes/No

VLAN

Tag On/Off

ID Selection 0–4095

Priority selection 0–7

Modules

HST3000-INF-VDSL	VDSL with Infineon Aware Chipset
HST3000-INF-CuVDSL	VDSL with Copper Services Module software
HST3000-INF-VDSL-WB2	VDSL and Copper (up to 30 MHz) with Infineon Aware Chipset

Cables

CB-5CLIP-BON	RJ to 5 clip lead cable (Bonded Cable for Broadcom/Conexant/Capri SIMs)
CB-5CLIP-RTC	RJ to 5 clip lead cable with regular telco clips (Bonded Cable for Broadcom/Conexant/Capri SIMs)
CB-BONDED	RJ to dual RJ cable (Bonded Cable for testing at the NID/NIU)

Ordering Information
Base Unit

HST3000-NG	HST-3000 Mainframe without Copper (Color)
HST3000C-NG	HST-3000 Copper Mainframe (Color)

Available SIMS (Modules)

HST3000-CUCE	Copper only SIM, CE Marked
HST3000-AR2A-T1	ASDL2+ T1 (ATU-R, Annex A)
HST3000-AR2B-T1	ADSL2+ T1 (ATU-R, Annex B)
HST3000-CAP-VDSL	Capri bonded VDSL SIM
HST3000-CAP-VDSL-WB2	Capri bonded VDSL/WB2 SIM
HST3000-CAR2A-T1	Copper, ADSL2+ T1 (ATU-R, Annex A)
HST3000-CAR2B-T1	Copper, ADSL2+ T1 (ATU-R, Annex B)
HST3000-CSHHV	G.SHDSL, 380V SPAN, DVOM SIM
HST-3000-CU	Dual T/R/G Interface to Copper Test SIM
HST-3000-CUVDSL-CNXT	VDSL and Copper with Conexant Chipset SIM
HST3000-WB2	Wide Band 2 (up to 30 MHz) Copper Test
HST3000-VDSL-CNXT	VDSL with Conexant Chipset
HST-3000-VDSL-CNXT-WB2	VDSL and Copper (up to 30 MHz) with Conexant Chipset
HST3000-VDSL-IK	VDSL with Ikanos Chipset
HST-3000-VDSL-IK-WB2	VDSL and Copper (up to 30 MHz) with Ikanos Chipset
HST3000-INF-VDSL	VDSL with Infineon Aware Chipset
HST-3000-INF-VDSL-WB2	VDSL and Copper (up to 30 MHz) with Infineon Aware Chipset
HST3000-ETH	10/100/1000 Ethernet
HST3000-CT1	T1 and Copper

HST3000-DC	Datacom
HST3000-E1	E1
HST3000-E1-DC	E1/Datacom
HST3000-4WLL	4-Wire Local Loop
HST3000-T1	Dual TX/RX Bantam T1 Interface and T1
HST3000-T3	Dual TX/RX Bantam T1 Interface, and Dual RX/Single TX BNC DS3 Interface/and DS3
HST-BRA ETSI (Euro)	ISDN BRA
HST3000-BRI	ISDN BRI
HST3000-CSHCE	G.SHDSL and Copper
HST-GSH	G.SHDSL
HST3000-GSHCE	2-Wire G.SHDSL
HST3000-CSH	4 Copper, 4-Wire G.SHDSL (STU-R/C, Annex A/B)
HST3000-BLK	Blank

Software Options

HST3000-BLUETOOTH	Bluetooth Wireless
HST3000-COS	Class of Service
HST3000-802.11	802.11 Wireless
HST3000-WEB	Web Browser
HST3000-REMOP	Remote Operation
HST3000-SCRIPT	Scripted Test
HST3000-DSL2	ADSL2 and ADSL2+
HST3000S-IP	Advanced IP Suite—PING and Through Mode Support
HST3000S-IP-Video	IP Video Analysis
HST3000S-VMOS	Video MOS Analysis

HST3000-MSTV	Microsoft IPTV Video Analysis
HST3000-VT100	VT100 Emulation
HST3000S-VOIP	VoIP Software Analysis
HST3000S-H.323	H.323 VoIP Signaling
HST3000S-MGCP	SCCP MGCP VoIP Signaling
HST3000S-MOS	VoIP Mean Opinion Score
HST3000S-SCCP	SCCP VoIP Signaling
HST3000S-SIP	SIP VoIP Signaling
HST3000-UNISTIM	VoIP Signaling Call Controls for UNISTIM
HST3000-OPTETH	Optical Ethernet
HST3000-IPV6	IPv6 Option for the Ethernet SIM
HST3000-MPLS	MPLS
HST3000-MSTR	Multiple Streams
HST3000-TCPUDP	TCP/UDP
HST3000-FTP	FTP
HST3000-WBTONES	WB TMS
HST3000-PCMTIMS	TIMS (PCM)
HST3000-PCMSIG	Signaling (PCM)
HST3000-SPE	Spectral Noise
HST3000-RFL	RFL
HST3000-TDR	TDR
HST3000-PRI	ISDN PRI (NC Standard)
HST3000-ST	Basic Rate ISDN S/T (ANSI)
HST3000-T1DDS	DDS-T1
HST3000-TxIMP	Transmission Impairments
HST3000-FR	Frame Relay

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