# JDSU HST-3000 ADSL2 Specs
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# 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.



DSLAM

Infineon SIM
in VTU-R mode
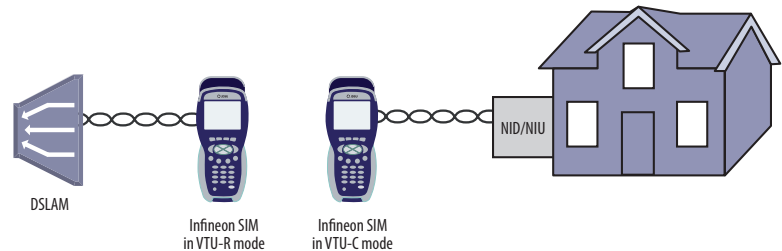
Infineon SIM
in VTU-C mode

NID/NIU

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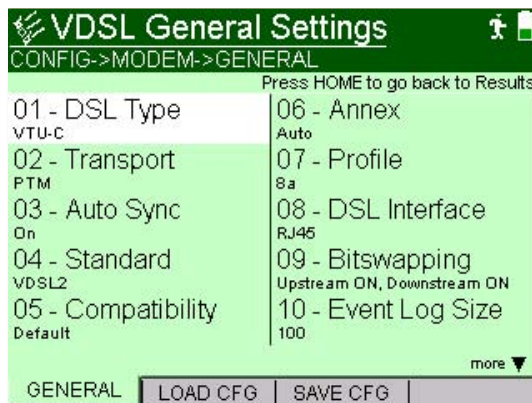


Figure 2: Easy setup for VDSL device type, Transport mode (ATM/PTM), and Annex (A/B), among others.



Figure 3: VDSL2 Summary screen

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### 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.
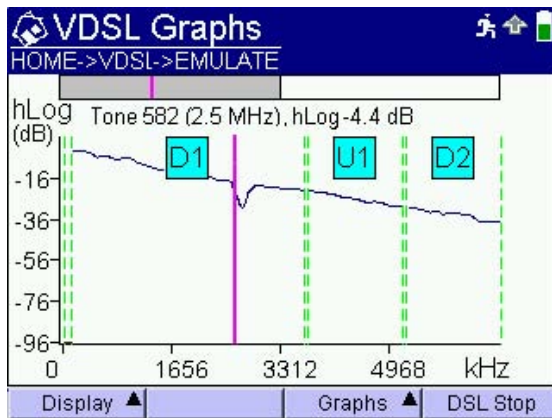


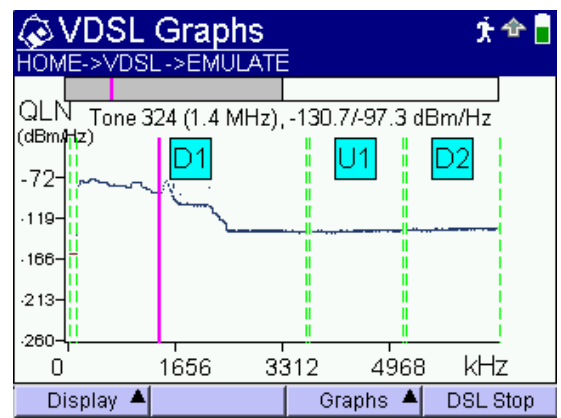Figure 4: Dual pair Hlog Graph showing likely bridged tap on pair 1 at tone 582.



Figure 5: QLN graph showing noise impacting downstream 1 bin

### Specifications

**ADSL/VDSL Infineon Module**

Chipset Infineon

**Standard Compliance**

VDSL2 ITU-T G.993.2 Bandplans 8, 12, 17, 30 MHz; Profiles 8a/b/c/d, 12a/b, 17a, 30a(ATU-R/VTU-R); 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

**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

Noise Margin

Attenuation - Signal, Line

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

### Band Statistics (per VDSL US/DS Band)

Loop Attenuation
Signal Attenuation
SNR Margin

### Network

**Network Modes**
Terminate, Through (ATU-R/VTU-R)

**Network Types**
VDSL
IPoE, PPPoE, Multiple VLANS, Data off
ADSL/ADSL2+
IPoE, PPPoE, MVC Video, IPoA, PPPoA, Multiple VLANS, Data off
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-3CLIP-BON | 8 PIN modular to 3 clip leads (bed of nails) ( for Infineon/TI SIMs) |
| CB-3CLIP-RTC | RJ to 3 clip lead cable with regular telco clips (for Infineon/TI SIMs) |
| CB-3LEAD-SAFE | RJ48 to 4mm plugs |

## 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+ TI (ATU-R, Annex A) |
| HST3000-CAR2B-T1 | Copper, ADSL2+ TI (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 |
| HST-3000-VDSL-CNXT | VDSL with Conexant Chipset |
| HST-3000-VDSL-CNXT-WB2 | VDSL and Copper (up to 30 MHz) with Conexant Chipset |
| HST-3000-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 |
| HST3000S-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 TIMS |
| 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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