**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](image1)

![Figure 2: Easy setup for VDSL device type, Transport mode (ATM/PTM), and Annex (A/B), among others.](image2)

![Figure 3: VDSL2 Summary screen](image3)
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.

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(ITU-R/VTU-R); Plan 997, 998

**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

![Figure 4: Dual pair Hlog Graph showing likely bridged tap on pair 1 at tone 582.](image_url)

![Figure 5: QLN graph showing noise impacting downstream 1 bin](image_url)
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

HST3000-CTI
HST3000-ETH
HST-3000-INF-VDSL-WB2
HST3000-INF-VDSL
HST-3000-VDSL-IK-WB2
HST3000-VDSL-CNXT-WB2
HST3000-VDSL-CNXT
HST3000-CU
HST-3000-CUVDSL-CNXT
HST-3000-CSHH
HST3000-CSHCE
HST3000-CSHHV
HST-3000-CU

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
ADSL2+ T1 (ATU-R, Annex A)
HST3000-AR2B-T1
ADSL2+ T1 (ATU-R, Annex B)
HST3000-CAP-VDSL
Copper bonded VDSL SIM
HST3000-CAP-VDSL-WB2
Copper bonded VDSL/WB2 SIM
HST3000-CARZ2A-T1
Copper, ADSL2+ T1 (ATU-R, Annex A)
HST3000-CARZ2B-T1
Copper, ADSL2+ T1 (ATU-R, Annex B)
HST3000-CSSH
G.SHDSL, 384V SPAN, DIVOM 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-UK
VDSL with Ikanos Chipset
HST3000-VDSL-UK-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-CTI
T1 and Copper

Software Options
HST3000-DC
Datacom
HST3000-E1
E1
HST3000-E1-DC
E1/Datacom
HST3000-4WLL
4-Wire Local SIM
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-CSHE
G.SHDSL and Copper
HST-GSH
G.SHDSL
HST3000-ESHE
2-Wire G.SHDSL
HST3000-CSH
4 Copper, 4-Wire G.SHDSL
HST3000-BLX
Blank

Software Options
HST3000-BLUETOOTH
Bluetooth Wireless
HST3000-CDS
Class of Service
HST3000-802.11
802.11 Wireless
HST3000-802.11
802.11 Wireless
HST3000-802.11
802.11 Wireless
HST3000-REMOP
Remote Operation
HST3000-SCRIPT
Scripted Test
HST3000-DLS2
ADSL2 and ADSL2+
HST3000-DLS2
ADSL2 and ADSL2+
HST3000-IP
Advanced IP Suite—PING and Through Mode Support
HST3000-IP-Video
IP Video Analysis
HST3000-VMS
Video MOS Analysis

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-3ONB
8 PIN modular to 3 clip leads (bed of nails)
( for Infineon/T1 SIMs)
CB-3CLIP-RTC
RJ to 3 clip lead cable with regular telco clips
( for Infineon/T1 SIMs)
CB-3LEAD-SAFE
RA6 to 4mm plugs

Ordering Information

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