

## HST-3000

### OLP-3057 Broadband FTTx Optical Service Interface Module (SIM)



#### Key Features

- The market's first BPON/EPON/GPON power meter module
- Selective FTTx power meter with through mode, simultaneously measuring at all three wavelengths: 1490 nm, 1550 nm, and 1310 nm in FTTx/PON systems
- Easy pass/fail analysis via user adjustable, pre-defined thresholds per wavelength, with the ability to store multiple user-defined profiles on the instrument
- Graphical display of all three wavelength measurements enables easy analysis of signals over time and prevents the chance of missing a momentary collapsing signal
- Universal adapter system to accommodate all standard 2.5 mm optical connectors
- Ideal all-in-one solution for FTTx/PON-based access network testing, when combined with optional VoIP and IPTV testing capabilities
- Modular hardware and software architecture allows easy upgrades and enhancements
- Lightweight, rugged, water-resistant, and battery-powered handheld test instrument
- Broadband power meter port expands the field of applications
- Universal push-pull interface makes testing easier

The JDSU OLP-3057 Broadband FTTx Optical SIM adds high performance, optical power meter testing to the HST-3000 for testing, installing, and maintaining FTTx/PON-based systems. Its through mode allows simultaneous measurement at all three wavelengths on the fiber: 1490 nm and 1550 nm downstream, as well as the 1310 nm upstream. The 1310 nm channel provides correct power measurements of burst-type upstream PON signals.

The broadband power meter interface makes the module more flexible for other applications like fiber installation and verification testing.

The HST-3000 is a modular, handheld test instrument. Rugged, versatile, and portable, it is the ideal instrument for testing a broad array of access network technologies from the physical layer through the service/application layer. The HST-3000 can be built to your configuration and, as application and technology needs change, may be quickly and easily upgraded with new modules.

Together with the existing copper, DSL, and IP triple play service—data, VoIP, and IPTV—this SIM makes the HST-3000 an ideal all-in-one solution for installation and maintenance testing of next generation FTTx and PON-based triple play networks.

2007

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## Functional Overview

Optical power measurement is a critical component in the installation and maintenance of PON-based FTTx triple play services. The HST-3000 OLP-3057 FTTx Optical SIM provides the capability to simultaneously evaluate the power levels of all three wavelengths present in PON architectures which use a separate wavelength (1550 nm) for downstream broadcast video.

What sets the OLP-3057 FTTx Optical SIM for the HST-3000 apart is simultaneous through mode measurements. The SIM also has the ability to provide Burst Mode support for analysis of the 1310 nm upstream wavelength.

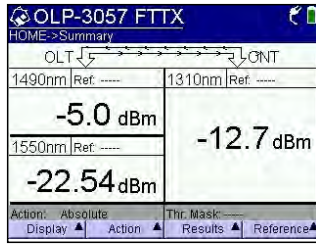
In Termination Mode, the instrument can be used to simultaneously measure both the 1490 nm and 1550 nm downstream wavelengths. Using the Through Mode capability, all three wavelengths (including the 1310 nm upstream) can be measured at the same time.

The power measurements on all three wavelengths can be evaluated automatically against pre-defined, user entered, and storable pass/fail criteria. The user can enter the pass/fail criteria directly at the unit using the keypad. There is no need to do this via an external software. This capability simplifies testing and reduces the potential for human error in assessing whether acceptable optical power levels are present.

Graphical display of all three wavelength measurements enables easy analysis of signals over time and prevents the chance of the user missing a momentary collapsing signal.

The broadband power meter mode lets you measure power levels (-60 to +5 dBm) in the wavelength range of 780 to 1600 nm.

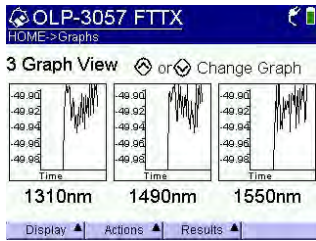
With the universal push-pull interface you can use any standard type of connector.



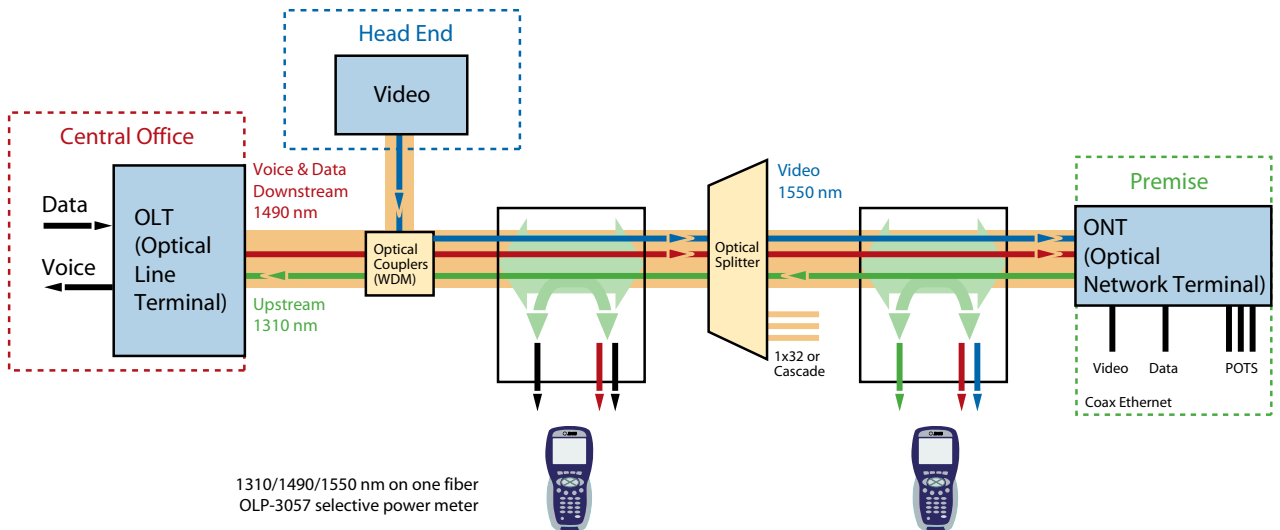
OLP-3057 Measurement screen



OLP-3057 Pass/Fail screen



OLP-3057 Optical graphs screen



1310/1490/1550 nm on one fiber  
OLP-3057 selective power meter



OCK-10 Optical Connector Cleaning Kit (accessory)



OVF-1 Visual Fault Locator (accessory)



Optical adapters (BN 2150)



OLP-3057 SIM



HST-3000 with Service Interface Module (SIM)

## Specifications

### Broadband Power Meter Characteristics

Display range	-60 to +5 dBm
Max. permitted input level	+10 dBm
Wavelength range	780 to 1600 nm
Number of calibrated wavelengths	820

### Accuracy

Intrinsic uncertainty <sup>(7)</sup>	± 0.20 dB (± 5%)
Linearity <sup>(8)</sup>	± 0.06 dB (-50 to +5 dBm)
Wavelength and modulation detection together with OLS-5, OLS-6, OLS-55/56, OLT-55	270 Hz, 330 Hz, 1 kHz, 2 kHz
Connectable fiber types	9/125 to 100/140 μm

### Wavelength Selective Characteristics

#### Measurement of 1310 nm (upstream)

Pass band <sup>1</sup>	260 to 1360 nm
Isolation of 1490/1550 nm bands <sup>1</sup>	>50 dB
Max. permitted input level	+17 dBm
Measurement range	Burst: +10 to -35 dBm

#### Measurement of 1490 nm (downstream)

Pass band	1480 to 1500 nm
Isolation of 1550 nm band <sup>1</sup>	>50 dB
Isolation of 1310 nm band <sup>1</sup>	>50 dB
Max. permitted input level	+15 dBm
Measurement range	+10 to -50 dBm

#### Measurement of 1550 nm (downstream)

Pass band	1530 to 1570 nm
Isolation of 1490 nm band <sup>1</sup>	>50 dB
Isolation of 1310 nm band <sup>1</sup>	>50 dB
Max. permitted input level	+26 dBm
Measurement range	+26 to -50 dBm

### Measurement accuracy

Intrinsic uncertainty <sup>2,3,4</sup>	±0.5 dB
PDL	<±0.25 dB
Linearity <sup>2,5</sup>	±0.06 dB
Through path insertion loss <sup>2,4</sup>	<1.5 dB

### General data

Results displayed in	dBm, dB, mW, μW, pass/fail
Resolution <sup>6</sup>	0.01 dB/0.001 μW

### Optical interface

Fiber type	9/125 μm
Optical connector interchangeable adapter from BN 2150/00.	
xx range	
2.5-mm plugs	FC & SC

### Electromagnetic compatibility

Corresponds to EN 50081-1 and EN-50082-1 (CE conformance)

### Calibration

Suggested calibration interval	3 years
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### Ambient temperature

Normal range of use	-10°C to +55°C
Storage and transport	-40°C to +70°C

### Physical Specifications

Size (h x w x d)	9.5 x 4.5 x 2.75 in. (241 x 114 x 70 mm)
Weight (with battery)	2.7 lbs. (1.23 kg)
Operating temperature	22° F to 122° F (5.5° C to 50° C)
Storage temperature	-40° F to 150° F (-40° C to 65.5° C)
Battery life	10 hrs. typical usage



## Specifications

Charging time	7 hrs. from full discharge to full charge
Operating humidity	10% to 80% relative humidity
Storage humidity	10% to 95% relative humidity
Display	3.8" diagonal, 1/4 VGA, Color Active Matrix with backlight (readable in direct sunlight)

### General Specifications

Ruggedness	Survives 3 feet (91 cm) drop to concrete on all sides
Water-resistant	Splashproof (may be used in heavy rain)
Languages	English, German, French, Spanish, Italian, Chinese, Turkish
Keypad	Typical 12-button keyboard

### Ordering Information

<b>HST3000-NG</b>	HST-3000 Mainframe without Copper (Color)
<b>HST3000-NG-BW</b>	HST-3000 Mainframe without Copper Testing (B&W)
<b>HST3000C-NG</b>	HST-3000 Copper Mainframe (Color)
<b>HST3000C-NG-BW</b>	HST-3000 Copper Mainframe (B&W)

### Available SIMS (Modules)

HST3000-4WLL	4-Wire Local Loop SIM
HST3000-AR2A-TI	ADSL2+ TI (ATU-R, Annex A) SIM
HST3000-AR2A	ADSL1/2/2+ (ATU-R, Annex A) SIM
HST3000-AR2B	ADSL1/2/2+ (ATU-R, Annex B) SIM
HST3000-AR2B-TI	ADSL2+ TI (ATU-R, Annex B) SIM
HST3000-ARB	Annex B ATU-R SIM
HST3000-ARCA	ATU-R/C Dual Mode SIM, AoPOTS SIM
HST3000-ARCB	ATU-R/C Dual Mode SIM, AoISDN SIM
HST3000-ARCE	ADSL (ATU-R) SIM
HST3000-BLK	Blank SIM
HST-BRA	ETSI (Euro) ISDN BRA SIM
HST3000-BRI	ISDN BRI SIM
HST3000-CAR	Copper (ATU-R) SIM
HST3000-CAR2A	ADSL1/2/2+ with Copper (ATU-R, Annex A) SIM
HST3000-CAR2A-TI	Copper, ADSL2+ TI (ATU-R, Annex A) SIM
HST3000-CAR2B	ADSL1/2/2+ with Copper (ATU-R, Annex B) SIM

#### Notes:

- Isolation is defined as rejection of neighbor signals in relation to the measurement signal
- At -7 dBm, excluding uncertainty of input connector
- With FC/PC connector
- +15 to -30 dBm at 1490/1550 nm, +10 to -20 dBm at 1310 nm upstream
- For power > -40 dBm
- For power > -40 dBm
- Under reference conditions: -20 dBm (CW) 1310 nm ± 2 nm, 23°C ± 3 K, 40 to 75 % rel. humidity
- Temperature range 23°C ± 3 K, 9/125 μm fiber + PC connector, 40 to 75% relative humidity.

HST3000-CAR2B-TI	Copper, ADSL2+ TI (ATU-R, Annex B) SIM
HST3000-CARB	Annex B Copper/ATU-R SIM
HST3000-CARCA	Copper and ATU-R/C Dual Mode SIM, AoPOTS
HST3000-CARCB	Copper and ATU-R/C Dual Mode SIM, AoISDN
HST3000-CARCE	Copper and ATU-R (Annex A) SIM, CE Marked
HST3000-CSHHV	G.SHDSL, 380V SPAN, DVOM SIM
HST3000-CSH4	Copper, 4-Wire G.SHDSL (STU-R/C, Annex A/B) SIM
HST3000-CSHCE	G.SHDSL and Copper SIM
HST3000-CT1	T1 and Copper SIM
HST3000-CU	Dual T/R/G Interface to Copper Test SIM
HST3000-CUCE	Copper only SIM, CE Marked SIM
HST3000-CUVDSL-CNXT	VDSL and Copper with Connexant Chipset SIM
HST3000-CUVDSL-IK	VDSL and Copper with Ikanos Chipset SIM
HST3000-CUVDSL-INF	VDSL and Copper with Infineon Aware Chipset SIM
HST3000-DC	Datacom SIM
HST3000-E1	E1 SIM
HST3000-E1-DC	E1/Datacom SIM
HST3000-ETH	10/100/1000 Ethernet SIM
HST-GSH	G.SHDSL SIM
HST3000-GSHCE	2-Wire G.SHDSL SIM
HST3000-T1	Dual TX/RX Bantam T1 Interface and T1 SIM
HST3000-T3	Dual TX/RX Bantam T1 Interface, and Dual RX/Single TX BNC DS3 Interface/and DS3 SIM
HST3000-VDSL-CNXT	VDSL with Connexant Chipset SIM
HST-3000-VDSL-CNXT-WB2	VDSL and Copper (up to 30 MHz) with Connexant Chipset SIM
HST3000-VDSL-IK	VDSL with Ikanos Chipset SIM
HST-3000-VDSL-IK-WB2	VDSL and Copper (up to 30 MHz) with Ikanos Chipset SIM
HST3000-VDSL-INF	VDSL with Infineon Aware Chipset SIM
HST-3000-VDSL-INF-WB2	VDSL and Copper (up to 30 MHz) with Infineon Aware Chipset SIM
HST3000-WB2	Wide Band 2 (up to 30 MHz) Copper Test SIM

### Software options

HST3000-BLUETOOTH	Bluetooth Wireless Software Option
HST3000-DSL2	ADSL2 and ADSL2+ Software Option
HST3000-FR	Frame Relay Software Option
HST3000-FTP	FTP Software Option
HST3000-IPV6	IPv6 Software Option
HST3000-MPLS	MPLS Software Option
HST3000-MSTR	Multiple Streams Software Option
HST3000-MSTV	Microsoft IPTV Video Analysis Software Option
HST3000-OPTETH	Optical Ethernet Software Option
HST3000-PCMSIG	Signalling (PCM) Software Option
HST3000-PCMTIMS	TIMS (PCM) Software Option
HST3000-PRI	ISDN PRI Software Option (NC Standard)
HST3000-PS	Pulse Shape Software Option
HST3000-REMOP	Remote Operation Software Option
HST3000-RFL	RFL Software Option
HST3000-SCRIPT	Scripted Test Software Option
HST3000-SPE	Spectral Noise Software Option
HST3000-ST	Basic Rate ISDN S/T (ANSI) Software Option
HST3000-T1DDS	DDS-T1 Software Option
HST3000-TCPUDP	TCP/UDP Software Option
HST3000-TDR	TDR Software Option
HST3000-TXIMP	Transmission Impairments Software Option
HST3000-UNISTIM	VoIP Signaling Call Controls for UNISTIM Software Option
HST3000-VT100	VT100 Emulation Software Option
HST3000-WBTONES	WB TIMS Software Option
HST3000S-H.323	H.323 VoIP Signaling Software Option
HST3000S-IP	Advanced IP Suite – PING and Through Mode Support Software Option
HST3000S-IP-Video	IP Video Analysis Software Option
HST3000S-MGCP	SCCP MGCP VoIP Signaling Software Option
HST3000S-MOS	VoIP Mean Opinion Score Software Option
HST3000S-SCCP	SCCP VoIP Signaling Software Option
HST3000S-SIP	SIP VoIP Signaling Software Option
HST3000S-VMOS	Video MOS Analysis Software Option
HST3000S-VOIP	VoIP Software Analysis Software Option
HST3000S-WEB	Web Browser Software Option

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