SmartClass™ OLT-54/55

Optical Loss Test Set

Key Features

- The auto-zeroing function provides outstanding accuracy even for high loss measurements with no manual zeroing necessary.
- Auto-lambda function with TWINtest and new TRIPLEtest provides automatic wavelength detection to speed up testing. Measure and display up to three different wavelengths simultaneously.
- Reflection trap at the power meter's input reduces multiple reflections between adapter and photo diode, allowing for increased accuracy (adapter BN 2014/00.xx).
- Laser source with output level adjustment ensures correct power for individual applications.
- Client USB interface for easy remote control and report generation.
- Visual fault locator option at 635 nm
  - Economical option for fiber tracing, routing, and continuity checking
  - Universal push-pull adapter 2.5 mm (1.25 mm adapter optional)
- Host USB data storage option
  - Unlimited result storage capacity via USB memory sticks
  - Easy and quick data transfer of stored measurement results

JDSU SmartClass optical handhelds go beyond the basics

The SmartClass OLT-54/55 (optical loss test set) is a high-performance, easy-to-use instrument with a two or three-wavelength laser source combined with a power meter. It is a universal instrument for singlemode fibers and systems for lab, manufacturing (USB interface), installation, maintenance, and troubleshooting.

All JDSU SmartClass optical handhelds provide:

- An extended number of calibration wavelengths for a high performance range.
- The intuitive graphical user interface for fast, easy, and straightforward operation.
- The intelligent power supply management system.
- The belt bag for safe and hands-free operation and transport.
- A USB port for remote operation as well as easy Microsoft Excel™-based report generation and analysis.
- Traceable measurements to international standards for confidence in accuracy.
- A robust, shock-proof, and splash-proof design for field operation.
- Quick-start operation, requiring no warm-up time and reducing testing time.

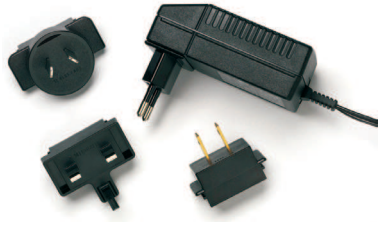
Loss can be measured simultaneously at up to three wavelengths (TRIPLEtest). Quick Referencing for all built-in wavelengths can be effected independent of the current measurement mode. Just connect the source and power meter with a fiber patch cord.

Accessories

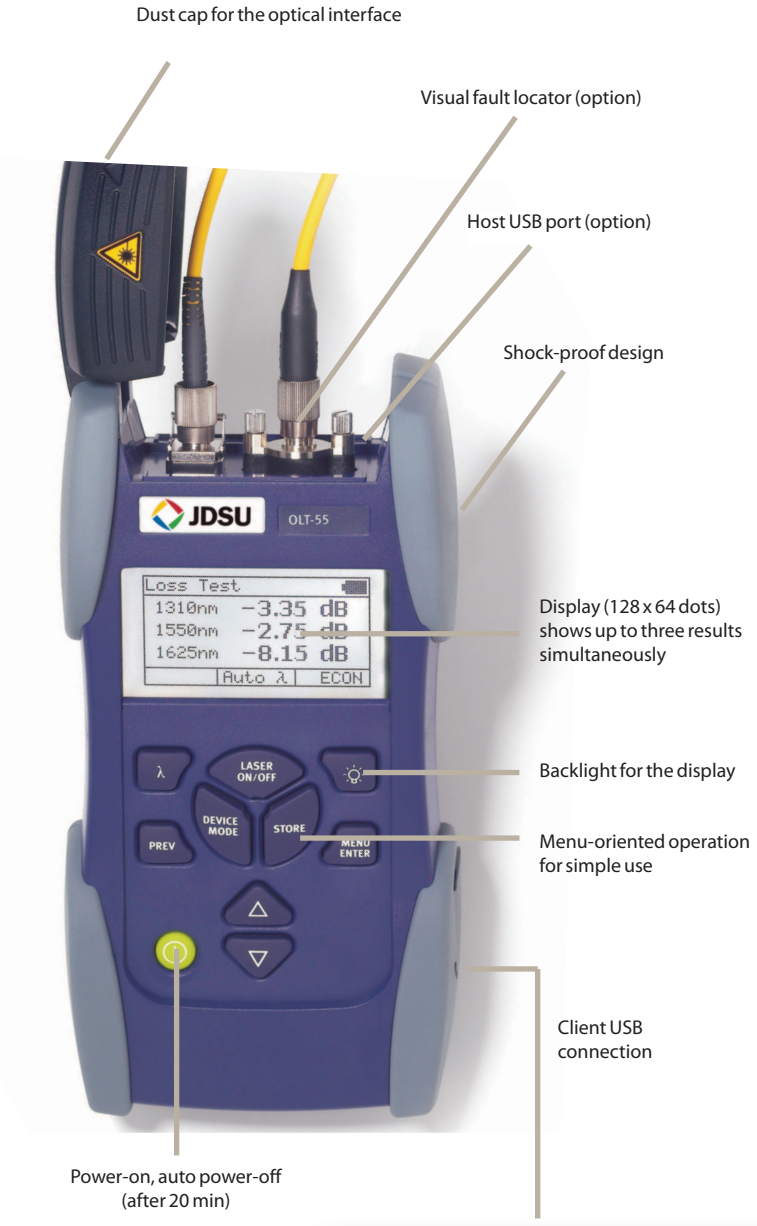
OCK-10 Optical connector cleaning kit

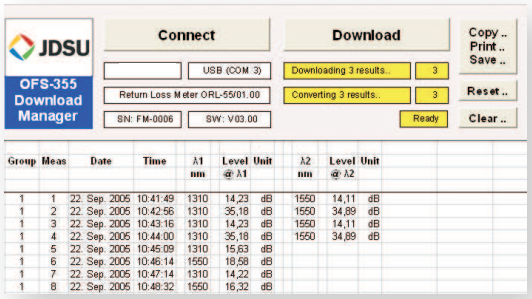
Optical adapters (BN 2150) for laser source output

Optical adapters (BN 2014) for power meter output



Worldwide-compatible AC adapter/charger (SNT-121A)





OFS-355 Optical Fiber Assistant Software
Free PC documentation software

3

Specifications

	2286/01	2286/02	2286/04
Loss Test Mode			
Nominal wavelengths [1]	1310 and 1550 nm	1310, 1490, and 1550 nm	1310 and 1550 nm
Spectral width (RMS)	5 nm	5 nm	5 nm
Fiber type	9/125 µm	9/125 µm	9/125 µm
Signal stability[2]	Short term: ± 0.02 dB, within 15 min Long term: ± 0.2 dB, within 8 hrs	Short term: ± 0.02 dB, within 15 min Long term: ± 0.2 dB, within 8 hrs	Short term: ± 0.02 dB, within 15 min Long term: ± 0.2 dB, within 8 hrs
Dynamic range	60 dB	60 dB	70 dB
Results displayed in	dB	dB	dB
Resolution	0.01 dB	0.01 dB	0.01 dB
Linearity[3]	± 0.06 dB ± 0.04 nW	± 0.06 dB ± 0.04 nW	± 0.06 dB ± 0.04 nW
Power Meter Mode			
Adjustable wavelength range	780 to 1650 nm in 1 nm increments	780 to 1650 nm in 1 nm increments	800 to 1700 nm in 1 nm increments
Number of selectable wavelengths	870	870	900
Photo diode	Germanium (GE)	Germanium (GE)	InGaAs
Fiber type	9/125 to 100/140 µm	9/125 to 100/140 µm	9/125 to 62.5/125 µm
Display range	−70 to +20 dBm	−70 to +20 dBm	−80 to +15 dBm
Results displayed in	dBm, dB, mW, µW	dBm, dB, mW, µW	dBm, dB, mW, µW
Resolution	0.01 dB	0.01 dB	0.01 dB
Maximum permitted level	+20 dBm	+20 dBm	+15 dBm
Intrinsic uncertainty[4]	± 0.13 dB (± 3%)	± 0.13 dB (± 3%)	± 0.13 dB (± 3%)
Overall measurement accuracy	850 nm ± 0.25 dB ± 0.8 nW	850 nm ± 0.25 dB ± 0.8 nW	850 nm ± 0.3 dB ± 0.15 nW
(−60 to +18 dBm)	1300, 1310 nm ± 0.2 dB ± 0.2 nW	1300, 1310 nm ± 0.2 dB ± 0.2 nW	1300, 1310 nm ± 0.2 dB ± 0.02 nW
	1550 nm ± 0.4 dB ± 0.2 nW	1550 nm ± 0.4 dB ± 0.2nW	1550 nm ± 0.2 dB ± 0.02 nW
	1625 nm[6] ± 0.6 dB typ. ± 0.6 nW	1625 nm [6] ± 0.6 dB typ. ± 0.6 nW	1625 nm [6] ± 0.4 dB ± 0.02 nW

	2286/05	2286/06	2286/11
Loss Test Mode			
Nominal wavelengths [1]	1310, 1550, and 1625 nm	1310 and 1550 nm	1300 nm
Spectral width (RMS)	5 nm	5 nm	5 nm
Fiber type	9/125 µm	9/125 µm	50/125 µm
Signal stability[2]	Short term: ± 0.02 dB, within 15 min Long term: ± 0.2 dB, within 8 hrs	Short term: ± 0.02 dB, within 15 min Long term: ± 0.2 dB, within 8 hrs	Short term: ± 0.02 dB, within 15 min Long term: ± 0.2 dB, within 8 hrs
Dynamic range	70 dB	60 dB	60 dB
Results displayed in	dB	dB	dB
Resolution	0.01 dB	0.01 dB	0.01 dB
Linearity[3]	± 0.06 dB ± 0.04 nW	± 0.06 dB ± 0.04 nW	± 0.06 dB ± 0.04 nW
Power Meter Mode			
Adjustable wavelength range	800 to 1700 nm in 1 nm increments	800 to 1700 nm in 1 nm increments	780 to 1650 nm in 1 nm increments
Number of selectable wavelengths	900	900	870
Photo diode	InGaAs	InGaAs	Germanium (GE)
Fiber type	9/125 to 62.5/125 µm	9/125 to 62.5/125 µm	9/125 to 100/140 µm
Display range	−80 to +15 dBm	−60 to +26 dBm	−70 to +20 dBm
Results displayed in	dBm, dB, mW, µW	dBm, dB, mW, µW	dBm, dB, mW, µW
Resolution	0.01 dB	0.01 dB	0.01 dB
Maximum permitted level	+15 dBm	+26 dBm	+20 dBm
Intrinsic uncertainty[4]	± 0.13 dB (± 3%)	± 0.13 dB (± 3%)	± 0.13 dB (± 3%)
Overall measurement accuracy	850 nm ± 0.3 dB ± 0.15 nW	850 nm ± 0.3 dB ± 0.15 nW	850 nm ± 0.25 dB ± 0.8 nW
(−60 to +18 dBm)	1300, 1310 nm ± 0.2 dB ± 0.02 nW	1300, 1310 nm ± 0.2 dB ± 0.02 nW	1300, 1310 nm ± 0.2 dB ± 0.2 nW
	1550 nm ± 0.2 dB ± 0.02 nW	1550 nm ± 0.2 dB ± 0.02 nW	1550 nm ± 0.4 dB ± 0.2 nW
	1625 nm [6] ± 0.4 dB ± 0.02 nW	1625 nm [6] ± 0.4 dB ± 0.02 nW	1625 nm[6] ± 0.6 dB typ. ± 0.6 nW

(1) ± 20 nm typically
(2) At ambient temperature range −10 to +55°C, ΔT = ± 0.3 K
(3) At ambient temperature 23°C ± 3 K
(4) CW signal
(5) Works only with JDSU OLT-54/55 or an external OLP-55 power meter
(6) Under reference conditions: –20 dBm (CW), 1625 nm ± 1 nm, 23°C ± 3 K, 45 to 75% relative humidity, 9 µm test fiber with DIN connector.

4

Specifications

	2286/01	2286/02	2286/04
Source Mode			
Nominal wavelengths[1]	1310 and 1550 nm	1310, 1490, and 1550 nm	1310 and 1550 nm
Spectral width (RMS)	5 nm	5 nm	5 nm
Number of ports	Single port	Single port	Single port
Fiber type	9/125 µm	9/125 µm	9/125 µm
Output power range[4]	–7 dBm to 0 dBm, separately adjustable	–7 dBm to 0 dBm, separately adjustable	–7 dBm to 0 dBm, separately adjustable
Resolution of power setting	0.01 dB	0.01 dB	0.01 dB
Signal stability[2]	Short term: ± 0.02 dB, within 15 min Long term: ± 0.2 dB, within 8 hrs	Short term: ± 0.02 dB, within 15 min Long term: ± 0.2 dB, within 8 hrs	Short term: ± 0.02 dB, within 15 min Long term: ± 0.2 dB, within 8 hrs
Output power accuracy (at nominal wavelengths)[3]	± 0.3 dB	± 0.3 dB	± 0.3 dB
Modes	Continuous wave (CW), modulated (270 Hz, 1 kHz, 2 kHz), Auto-λ[5] (signal coding for automatic power meter wavelength detection)	Continuous wave (CW), modulated (270 Hz, 1 kHz, 2 kHz), Auto-λ[5] (signal coding for automatic power meter wavelength detection)	Continuous wave (CW), modulated (270 Hz, 1 kHz, 2 kHz), Auto-λ[5] (signal coding for automatic power meter wavelength detection)

	2286/04	2286/06	2286/11
Source Mode			
Nominal wavelengths[1]	1310, 1550, and 1625 nm	1310 and 1550 nm	1300 nm
Spectral width (RMS)	5 nm	5 nm	5 nm
Number of ports	Single port	Single port	Single port
Fiber type	9/125 µm	9/125 µm	50/125 µm
Output power range[4]	–7 dBm to 0 dBm, separately adjustable	–7 dBm to 0 dBm, separately adjustable	–7 dBm to 0 dBm, adjustable
Resolution of power setting	0.01 dB	0.01 dB	0.01 dB
Signal stability[2]	Short term: ± 0.02 dB, within 15 min Long term: ± 0.2 dB, within 8 hrs	Short term: ± 0.02 dB, within 15 min Long term: ± 0.2 dB, within 8 hrs	Short term: ± 0.02 dB, within 15 min Long term: ± 0.2 dB, within 8 hrs
Output power accuracy (at nominal wavelengths)[3]	± 0.3 dB	± 0.3 dB	± 0.3 dB
Modes	Continuous wave (CW), modulated (270 Hz, 1 kHz, 2 kHz), Auto-λ[5] (signal coding for automatic power meter wavelength detection)	Continuous wave (CW), modulated (270 Hz, 1 kHz, 2 kHz), Auto-λ[5] (signal coding for automatic power meter wavelength detection)	Continuous wave (CW), modulated (270 Hz, 1 kHz, 2 kHz), Auto-λ[5] (signal coding for automatic power meter wavelength detection)

(1) ± 20 nm typically
(2) At ambient temperature range –10 to +55°C, ΔT = ± 0.3 K
(3) At ambient temperature 23°C ± 3 K
(4) CW signal
(5) Works only with JDSU OLT-54/55 or an external OLP-55 power meter
(6) Under reference conditions: –20 dBm (CW), 1625 nm ± 1 nm, 23°C ± 3 K, 45 to 75% relative humidity, 9 µm test fiber with DIN connector.

5

Specifications

General Specifications

Wavelength detection[1] with automatic switching and display of nominal wavelength	
Fiber detection with different modulation frequencies	
Data memory	1000 measurement results
Data readout/remote control	via USB interface
Modulation detection[2]	270 Hz, 1 kHz, 2 kHz
Auto-lambda (λ) detection (with any JDSU Optical Laser Source)	850 nm to 1650 nm

Memory

Data memory	1000 measurement results
Data readout/remote control	via client USB interface
USB data storage (option)	via Host USB interface

Display

Illuminated graphical display, resolution of 128 × 64 dots, displays up to three power readings simultaneously

Backlight function switchable via a separate key

Optical Connector

Power meter

Interchangeable adapter from BN 2014/00.xx range, suitable for measurements on flat or angled physical contact systems

2.5-mm plugs	FC, ST, SC, DIN, E2000, SMA
1.25-mm plugs	LC, MU adapter (BN 2014/00.28)

Laser source

Interchangeable adapter from BN 2150/00.xx range for flat physical fiber connection. One adapter type has to be selected.

Power supply

Four dry batteries Mignon (AA) 1.5 V or NiMH rechargeable cells Mignon(AA) 1.2 V

Operating time from dry batteries[3]	>100 h

Batteries/NiCd/NiMH power saving: The instrument switches off automatically after ~20 min (can be disabled)

AC line operation via separate AC adapter

Integrated fast battery charging function (2 hours)

Electromagnetic compatibility

Corresponds to IEC 61326 (CE conformance)

Calibration

Suggested calibration interval 3 years

Ambient temperature

Nominal range of use	−10 to +55°C
Storage and transport	−40 to +70°C

Dimensions and weight

W × H × D	95 × 60 × 195 mm (3.74 × 2.36 × 7.68 in)
Weight	500 g (1.1 lb)

(1) Only together with OLS-55 Optical Laser Sources
(2) From –45 dBm (780 to 1299 nm), from –50 dBm (1300 to 1625 nm)
(3) Power meter mode

Accessories for Visual Fault Locator Option

BN 2252/02 Adapter for 1.25 mm UPP

S3122 Adapter from 2.5 mm UPP to LC (1.25 mm)

Order information

Order number	Instrument
BN 2286/01 (GE)	SmartClass OLT-55 1310/1550
BN 2286/02 (GE)	SmartClass OLT-55 1310/1490/1550
BN 2286/04 (InGaAs)	SmartClass OLT-55 1310/1550
BN 2286/05 (InGaAs)	SmartClass OLT-55 1310/1550/1625
BN 2286/06 (InGaAs)	SmartClass OLT-55 1310/1550 (high power)
BN 2286/11 (Ge)	SmartClass OLT-54 1300 nm

Order number	Option
BN 2252/90.10	Visual Fault Locator
BN 2277/90.06	USB Data Storage (memory stick not in scope of delivery)

OFS-355 Optical Fiber Assistant Software

Free PC documentation software (available from www.jdsu.com)

Included with the OLT-54/55

Interchangeable adapter from BN 2014/00.xx range (power meter); BN 2150/00.xx range (laser source); four dry batteries Mignon (AA) 1.5 V; Operating manual; MT-1S belt bag

Order information

Accessories

Order number	Accessories
BN 2014/00.21	Optical adapter ST type
BN 2014/00.24	Optical adapter SC type
BN 2014/00.09	Optical adapter FC type
BN 2014/00.17	Optical adapter DIN type
BN 2014/00.26	Optical adapter E-2000 type
BN 2014/00.31	Universal push/pull adapter for DIN, FC, SC, ST
BN 2014/00.28	Universal push/pull adapter for LC, MU
BN 2150/00.32	Optical adapter ST type
BN 2150/00.58	Optical adapter SC type
BN 2150/00.51	Optical adapter FC type
BN 2150/00.50	Optical adapter DIN type
BN 2150/00.59	Optical adapter LC type
BN 2229/90.21	OCK-10 Optical connector cleaning kit
BN 2229/90.07	Optical cleaning tape
BN 2229/90.08	Spare tape for optical cleaning tape
BN 2237/90.02	NiMH cells, Mignon (AA) 1.2 V (4 required per instrument)
BN 2277/90.01	SNT-121A Worldwide-compatible AC adapter
K804	USB connection cable
BN 2277/90.02	MT-1S belt bag for one instrument
BN 2126/03	MT-2S soft bag for two instruments
BN 2126/04	MT-3S soft bag for three instruments
BN2093/31	MK-3S hard case for three instruments
BN 2286/90.01	Calibration report

Detailed information regarding test adapters, cables, and fiber-optic sleeves can be found in a separate datasheet entitled *JDSU Fiber-Optic Test Adapters and Cables*.

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