SmartClass™ and SmartPocket™ Optical Handhelds

Portfolio of Optical Handhelds for Fiber Field Test

JDSU

Optical Handhelds

JDSU offers the worldwide largest portfolio of power meters, wavelength selective power meters, return loss meters, light sources, loss test sets, variable attenuators, talk sets, tunable laser sources, and optical channel checkers.

A pioneer in optical handheld instrumentation for more than 25 years, JDSU has more than 150,000 optical handhelds already in use and has developed products that are recognized worldwide for their quality, reliability, ease-of-use, and low cost of ownership.

The comprehensive line of JDSU SmartClass optical handheld instruments and accessories offers a complete solution for optical field testing. The product line includes light sources, tunable laser sources, power meters, attenuators, loss test sets, return loss meters, channel checkers, talk sets, and complete test kits for various fiber and passive optical networks (FTTx/PON), dense (DWDM) and coarse (CWDM) wavelength division multiplexing, 40 Gbps, Ethernet, and Gigabit Ethernet multimode and single-mode applications. A line of accessories, including adapters, cleaning tools, and inspection microscopes, is also available.

SmartClass Optical Handhelds

The high performance SmartClass optical handhelds combine high functionality with straightforward operation and compact design to provide a complete line of optical power meters, light sources, optical attenuators, test kits, loss test sets, return loss meters, channel checkers, tunable laser sources, and optical talk sets for every field application in fiber optic networks.

SmartPocket™ Optical Handhelds

The pocket-sized, cost-effective optical power meters and light sources are ideal for the installation and maintenance of single-mode and multimode fiber optic networks, because they offer ergonomic design with large displays and straightforward user interfaces.

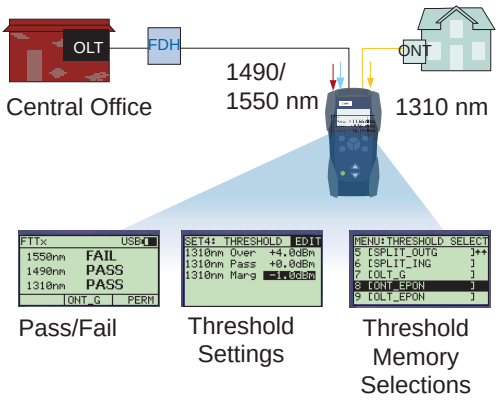
Optical Test Kits

JDSU offers a complete line of optical test kits that contain all of the instruments and accessories necessary to perform professional-grade power and loss testing in the field. Different optical test kits are available: compact and economical solution or high-performance solution for both multimode and single-mode.

The Right Tool for the Right Application

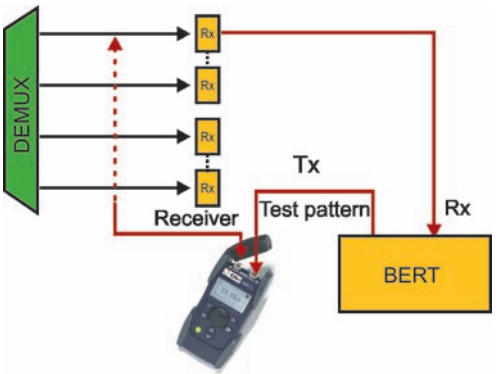
FTTx / PON Testing

The JDSU SmartClass OLP-57 (Selective Optical Power Meter) is designed for use during turn-up and maintenance of FTTx/PON networks. Its Through mode allows simultaneous measurement at 1490 and 1550 nm downstream and 1310 nm upstream.

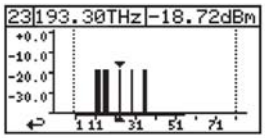


Optical Power Adjustment

The JDSU SmartClass OLA-55 (Optical Level Attenuator) is ideal for simulating a optical attenuation on a span of fiber or for system verification testing such as "receiver sensitivity" (see adjoining graphic). Due to the minimized differential group delay (DGD), the SmartClass OLA-55 is also suitable for systems up to 40 Gbps.



New Turn-up and Maintenance Tools for CWDM Networks



Graphical display

CH	λ/nm	Lev/dBm
11	1471	LOW
12	1491	–2.12
13	1511	–11.20
14	1531	–13.56

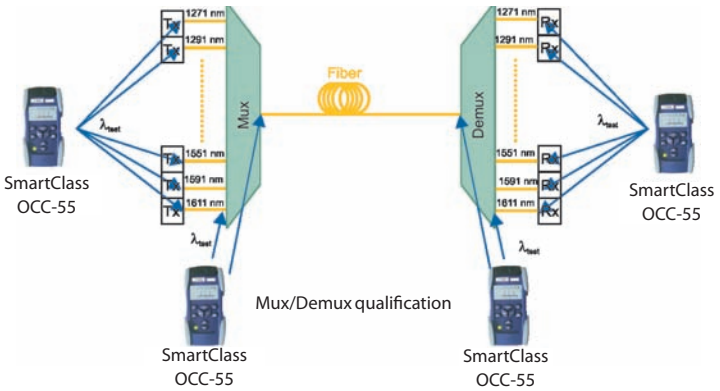
Tabular display

Laser ON

Service channel ON

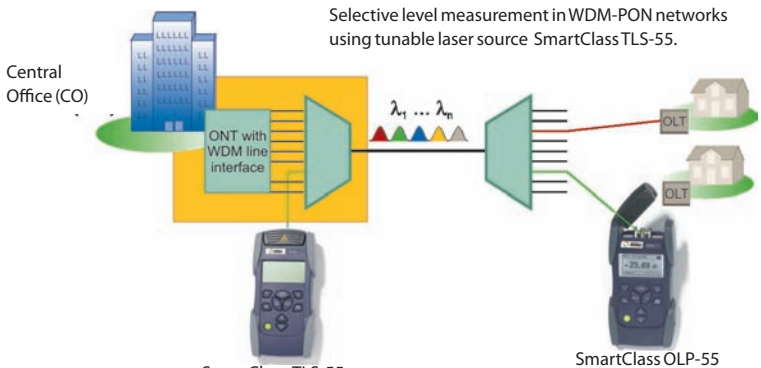
Channel Checking

The JDSU SmartClass OCC-55 is a battery-operated CWDM Channel Checker that is ideal for field service groups who install, maintain and upgrade CWDM systems. The SmartClass OCC-55 scans the CWDM system and automatically records all channels with the wavelength and the related power level.



DWDM Tunable Light Source

The JDSU SmartClass TLS-55 (Optical Light Source) covers all ITU-T frequencies needed for wavelength multiplexing systems. Together with a power meter it is the ideal set for testing WDM systems and ROADM networks.



SmartClass Optical Handhelds
High Performance and Future-Proof

Field Dedicated

- Robust, shock-proof, and splash proof
- Backlight for indoor and outdoor use
- Dust cap for optical interfaces
- Quick start operation with no warm-up time

Lightweight

- 500 g / 1.1 lb

High-performance Instrument

- Set individual wavelengths in 1-nm steps
- 1000 results storage capability
- Test up to 3 wavelengths simultaneously
- Highest accuracy
- Power the unit 4 ways
- USB port for remote operation and report generation

High Flexibility and Compatibility

- Universal push/pull interface (1.25 or 2.5 mm)
- Compatible with all JDSU optical handhelds, T-BERD/MTS platforms and OTDR modules

SmartPocket Optical Handhelds
New Compact and Economical

Field Dedicated

- Robust, shock-proof, and splash proof
- Dust cap for optical interfaces
- Easy to use, straightforward operation
- Quick-start operation with no warm-up time

Lightweight and Handy

- 200g / 0.45 lb
- 30 x 80 x150 mm / 1.2 x 3.1 x 5.9 in

High-performance Instrument

- Set individual wavelengths in 1-nm steps
- 100 results storage capability
- Test up to 2 wavelengths
- High accuracy
- Power the unit 3 ways
- USB for report generation

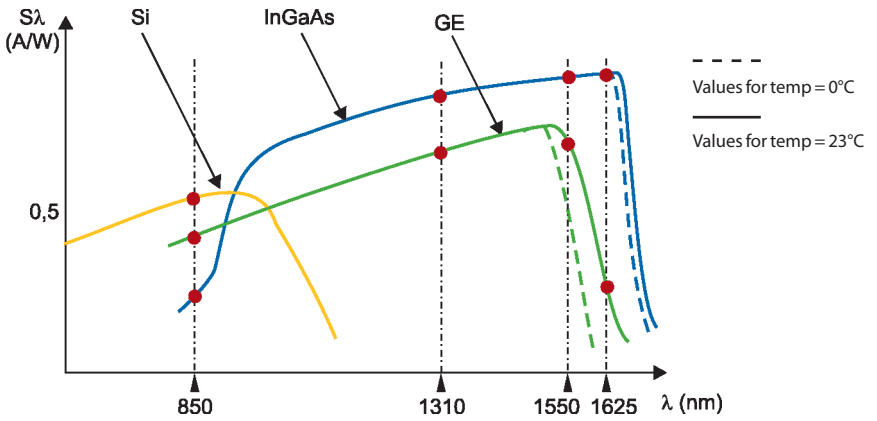
High Flexibility and Compatibility

- Universal push-pull interface on power meters
- Interchangeable adapters on sources
- Compatible with all JDSU optical handhelds, T-BERD/MTS platforms, and OTDR modules

Set-up a Loss Testing Solution

Choosing a Power Meter

Power meters use photodiodes as detectors, and depending on the type of semiconductor used, the spectral response of the photodiode can vary.



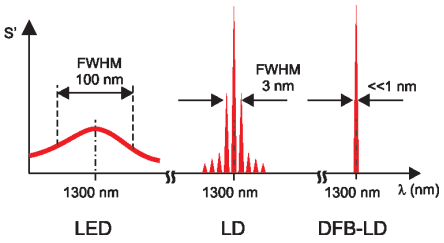
	Si	GE	InGaAs
Meas. range	600 to 1000 nm	850 to 1550 nm	1000 to 1650 nm
Characteristics	Only for MM fibers	For general use	Recommended for 1625 nm

InGaAs diodes provide more accurate results for higher wavelengths and are less sensitive to temperature variations. Therefore, InGaAs are more suitable for high sensitivity and high power applications. Germanium photodiodes are suitable for single-mode applications.

Choosing a Light Source

Various types of light diodes exist that offer different characteristics especially in terms of spectral width. Lasers provide better accuracy as they show a narrower spectrum than LED sources, which means that the emitted light is more monochromatic and thus the wavelength is more precise.

- LEDs are cheaper than lasers but they offer larger spectrum and are used in multimode applications
- The FP lasers use Fabry-Perot cavity which folds the beam due to interferometric phenomenon generating a gain by stimulated emission. The beam quality is sufficient for various single-mode applications.
- The DFB laser is a type of laser diode where the active region of the device is periodically structured as a diffraction grating. The structure builds a one dimensional interference grating (Bragg scattering) that provides optical feedback for the laser. DFB lasers are often used in sensing applications where extreme narrow line width is required such as in DWDM systems.



FWHM: full width at half maximum

LED: light emitting diode

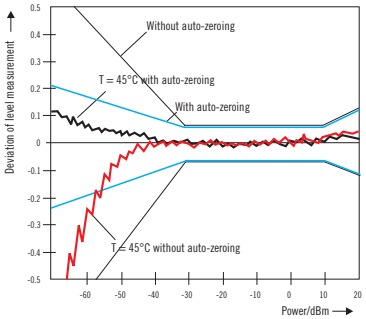
LD: laser diode (Fabry-Perot)

DFB-LD: distributed feedback laser diode

Innovative Features for SmartClass and SmartPocket Optical Handhelds

Rugged and Reliable

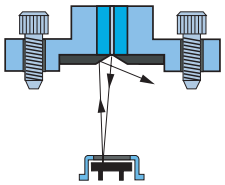
The rugged, shock-resistant, and splash-proof design of the JDSU optical handhelds protect the instruments from damage in the field and is designed to withstand even the harshest conditions. Moreover, a 1-year warranty protects the instruments from any manufacturing defects. All JDSU optical handhelds are calibrated to traceable national standards, and although a 3-year calibration interval is recommended under normal operation conditions, no recalibration is necessary.



Auto-zeroing function enables constant measurement accuracy over the entire level range and for the full temperature range.

Highest Accuracy Available

In every power meter, regardless of photodiode type used, a reduction in measurement accuracy occurs for low power levels and high temperatures. The auto-zeroing function for SmartClass optical power meters automatically compensates for all errors that the photodiode itself and its temperature dependence causes. This process is quick and performed automatically between each measurement. The auto-zeroing function enables constant measurement accuracy over the entire power level and temperature range. It offers much easier handling and higher accuracy than standard manual zeroing.



The reflection trap prevents multiple reflections

Launching without Multiple Reflections

The test adapters for JDSU optical power meters are based on the common "fiber-air-sensor interface" principle. A reflection trap in the adapter prevents falsified measurement results from possible multiple reflections between the reflective plug end surface and the photodiode. Therefore, constant measurement accuracy is guaranteed regardless of the reflectivity of the plug end surface (material or surface quality).

USB port

Optimized Power Supply

The SmartClass optical handhelds enable operating cost reductions through the use of universal standard batteries. They also offer greater flexibility in the field due to their versatile powering system

All JDSU optical handhelds offer versatile methods for powering the units: dry cell or rechargeable batteries, AC line, or via the USB interface, which also serves as an alternative method for powering the unit when connected to a PC/notebook.

The integrated fast battery charging function in the SmartClass optical handhelds enables recharging the batteries when the instrument is connected to an AC line or to a PC through the USB interface.

Advanced Features for Improved Productivity

Auto-λ recognition for error free testing

Set Wavelengths Error-free

The JDSU optical power meters and optical light sources enable error-free testing due to their auto-lambda function. The light source sends an identification signal to the power meter that enables synchronization between the two instruments. The auto-lambda function automatically detects and sets the wavelength, preventing the possibility of measurement errors caused by incorrect manual settings.

The TRIPLEtest function enables simultaneous measurement and display at three wavelengths

Test Multiple Wavelengths Simultaneously

The JDSU TWINtest and TRIPLEtest features increase the measuring speed for two-wavelength testing by up to 50 percent and up to 66 percent for three-wavelength testing. With the appropriate optical light source, the optical power meter can perform real-time loss measurements at two or three wavelengths. The unit can automatically detect the wavelengths, measure, and display the results in less than one second.

Set Individual Wavelengths in 1 nm Steps

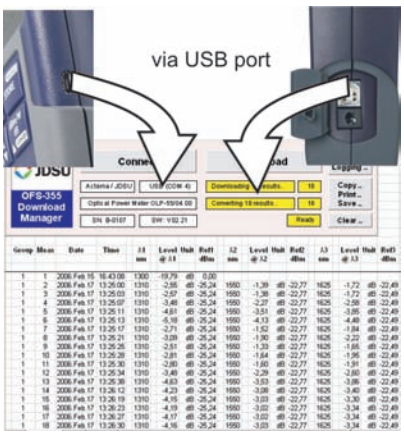
The JDSU optical power meters allow setting any single wavelength for the highest performance range in the industry. With SmartClass optical power meters, technicians can select every operating wavelength from 800 to 1700 nm in 1 nm increments, and they can select wavelengths from 780 to 1650 nm in 1 nm increments with SmartPocket optical power meters. The wavelength table allows technicians to store up to 10 user-defined wavelengths. Technicians can decide whether or not to display each wavelength selected.


Simply close the dust cap for referencing the optical return loss tester

Advanced Reference Technology

The JDSU advanced reference technology simplifies referencing for ORL measurements. With this improved function, there is no need to apply a mandrel to perform a zero ORL adjustment of the SmartClass optical return loss tester. Technicians can simply close the dust cap and wait a few seconds for referencing at each wavelength.

Data Management and Error-free Professional Report



The OFS-355 freeware can analyze every result for the complete line of SmartClass and SmartPocket Handhelds

Ample Storage Capacity

The abundant memory storage capacity of each SmartClass optical handheld can store up to 1000 results. A SmartPocket optical handheld can store up to 100 results. Moreover, each result is stored based on the cable/fiber, including information about the date and time of the measurement. The USB interface makes it easy to transfer all of the test results to a PC for easy documentation and test report generation. Therefore, the generous data memory capacity of the JDSU optical handhelds provides a high degree of flexibility for measurements in the field and for post analysis of the results.

Professional Report Generation in Record Time

JDSU OFS-355 software is an all-in-one solution that allows for the remote control of the SmartClass optical handhelds and enables the transfer of test results to a PC via USB interface. This software can analyze every result for the complete line of smart optical handhelds regardless of the type of measurement performed. With its intuitive interface and simple operating steps, OFS-355 software saves time and costs during the post analysis of field test results.

JDSU Fiber Characterization Suite

Cost-effective Light Source

JDSU optical light sources enable testing of multiple wavelengths by combining multimode and single-mode lasers in a single unit. This cost-effective solution allows technicians to fully test and qualify any type of fiber network without having to carry additional instruments in the field.

Flexible and Compatible

The SmartClass optical handhelds meet all of your testing needs with their numerous configurations. Use them together to perform power and loss testing or return loss measurement. More importantly, their flexibility makes them compatible with the JDSU fiber characterization platforms, including the T-BERD/MTS platforms and OTDR modules.

JDSU Optical Handhelds Portfolio

SmartPocket OLP-34/OLP-35/OLP-38 (Optical Power Meters)

The SmartPocket OLP-34, OLP-35, and OLP-38 offer an excellent price/performance ratio in a rugged and pocket-sized housing for straightforward use in the field. Mainly used to measure optical power level in premises, telco, or CATV fiber optic networks, they also can be combined with LED or laser light sources.

SmartPocket OLS -34/OLS-35/OLS-36 (Optical Light Sources)

The SmartPocket OLS-34, OLS-35, and OLS-36 are the ideal tools for measuring the insertion loss and testing the continuity in multimode datacom and local area networks (LANs) as well as in single-mode telecommunication and CATV-multimedia networks.

SmartClass OLP-55/OLP-57 (Optical Power Meters)

The SmartClass OLP-55 and OLP-57 are designed for installing, testing, and maintaining single-mode and multimode networks and cables for the industry's newest applications.

SmartClass OLS-55/OLS-56 (Optical Light Sources)

The SmartClass OLS-55 and OLS-56 offer the flexibility to test, install, and maintain single-mode and multimode fiber optic networks.

SmartClass OLA-54/OLA-55/OLA-55M (Optical Level Attenuators)

The SmartClass OLA-54 and OLA-55 are future-proof, improved instruments for system verification testing and production use. These instruments are 40 Gbps ready due to their low DGD. SmartClass OLA-55M is the motorized version of the OLA-55. Level mode controller allows to automatically compensated variations in input power

SmartClass ORL-55 (Optical Return Loss Meter)

The SmartClass ORL-55 is a high performance instrument for field, production, and laboratory use. It can function as a return loss meter, an optical power and loss meter, and a laser source.

SmartClass OLT-55 (Optical Loss Test Set)

The SmartClass OLT-55 is a universal instrument for the installation, maintenance, and troubleshooting of single-mode fiber and for patch cord testing. It can also be used as a stand-alone power meter or laser source.

SmartClass OTS-55 (Optical Talk Set)

The SmartClass OTS-55 is an ideal piece of ancillary equipment that can be used to create a communication mechanism between two terminal fiber ends in order to give instructions to the technician at the far end of the fiber network.

SmartClass TLS-55 (Optical Tunable Laser Source)

The SmartClass TLS-55 is the first battery-operated tunable laser source for C or L-band DWDM testing. It also designed to support ROADM network channel routing applications.

SmartClass OCC-55/OCC-56 (Optical Channel Checkers)

The SmartClass OCC-55 and OCC-56 are innovative selective power meters for CWDM or DWDM applications that provide a low-cost alternative solution to optical spectrum analyzers. They scan WDM systems and automatically record all channel key measurements.

SmartPocket OMK-34/OMK-35/OMK-36/OMK-38 (Optical Test Kits)

The SmartPocket OMK-3x include a SmartPocket OLS-3x (light source), a SmartPocket OLP-3x (power meter) and other accessories perfectly suitable for power measurement, insertion loss testing, and continuity checks in multimode and single-mode networks for any kind of enterprise or service provider applications.

SmartClass OMK-55 (Optical Test Kit)

The SmartClass OMK-55 contains all of the tools, including two or three instruments as well as the accessories, necessary to perform professional-grade power or loss testing in the field. Purchase the SmartClass OMK-55 with the combination of instruments and accessories that meets your specific testing needs.

A SmartClass Optical Handheld for all Classes of Applications

	FTTx/Access Networks	Backhaul / Metro / Long-haul Networks	LAN / WAN and Premises	Fault Finding	ROADM Testing / WDM Analysis	Loss Budget Measurement	Link Characterization	40 Gbps Characterization	ORL Testing	Power Measurement	Fiber Identification
Optical Power Meters											
SmartClass OLP-55	✓	✓	✓			✓	✓			✓	✓
SmartClass OLP-57	✓			✓		✓	✓			✓	✓
SmartPocket OLP-34	✓		✓			✓	✓			✓	✓
SmartPocket OLP-35	✓		✓			✓	✓			✓	✓
SmartPocket OLP-38	✓	✓	✓			✓	✓			✓	✓
Optical Light Sources											
SmartClass OLS-55	✓	✓	✓			✓	✓				✓
SmartClass OLS-56	✓	✓	✓			✓					✓
SmartPocket OLS-34	✓		✓			✓	✓				✓
SmartPocket OLS-35	✓	✓				✓	✓				✓
SmartPocket OLS-36	✓	✓	✓			✓	✓				✓
SmartClass TLS-55		✓			✓	✓	✓				
Optical Channel Checkers											
SmartClass OCC-55			✓		✓					✓	
SmartClass OCC-56		✓			✓					✓	
Optical Loss Test Sets											
SmartClass ORL-55	✓	✓	✓			✓	✓		✓	✓	✓
SmartClass OLT-55	✓	✓	✓			✓	✓			✓	✓
Optical Variable Attenuator											
SmartClass OLA-54			✓				✓				
SmartClass OLA-55/OLA-55M	✓	✓					✓	✓			
Optical Talk Set											
SmartClass OTS-55	✓	✓	✓			✓	✓				

JDSU

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