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Fiber Optic Testing

OTDR
MPO Fiber Testing
Optical Power Meter
Optical Multimeter
Light Source
Optic Fiber Identifier
Fiber Cable Fault Locator
Insertion Loss & Return Loss Tester
Interferometer, VOA, OTS & PON Identifier

Sunma Fiber Technology Co.,LTD.

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Overview of SUNMA

"SUNMA FIBER TECHNOLOGY CO., LTD.", one of the leading fiber optic manufacturers in China, specialized in supplying fiber optic equipments, fiber test instruments and fiber optic network & telecom devices.



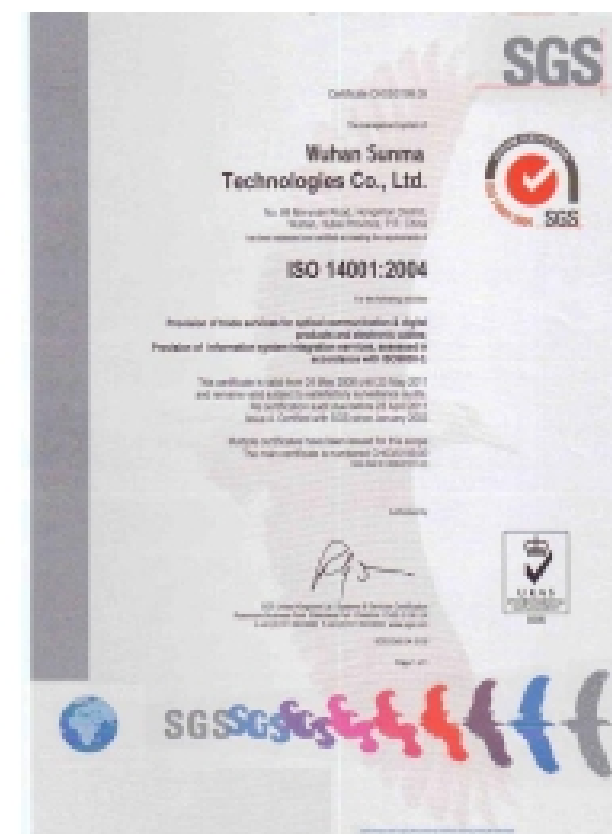
"SUNMA FIBER" was founded in 2002 by Mr. Sunder Ma. Our sales office locates at Shenzhen & Wuhan city, which is the Fiber Optic Valley in China. The manufacturing center locates at Shenzhen & Dongguan city in South China.



Equipped with advanced hi-tech producing & testing equipments, staffed with a team of highly competent talents for R&D and quality inspection, SUNMA devoted to the development and application research of fiber telecom products.



Administering the quality standard of CE, UL, FDA, SGS ISO9001/14001 strictly. With the excellent pre & after sales service, professional knowledge, talented team and superior product quality, SUNMA have won a great reputation from our worldwide users.



In recent years, we provide various fiber optic solutions such as fiber patch cord production line, fiber coupler & splitter production line, fiber testers, fiber passive component, fiber active modules, fiber tools and other fiber network devices to worldwide users. Till now, our products cover Fiber Optic Telecom, Fiber Optic Network, FTTx, 5G Wireless, Business Enterprise, Power, Cable TV and utilities already.

"Seeking Excellent Quality to Win Opportunities, Providing Professional Solutions to Improve Service, Keeping Sincerely Cooperation to Create Future", SUNMA expect the pure honest cooperation with much more peoples in the world!

ST-18001 Optical Testing System (MPO IL/RL Test)



Application

- ① Optical passive splitter, PLC test;
- ② MPO cable test;
- ③ Device aging monitoring;
- ④ Optical transceiver module test;
- ⑤ Lab testing of scientific research and institutions;
- ⑥ Laser and amplifier test;
- ⑦ AWG, multi-channel optical components test;

Application interface

- ① WINDOWS 7 operating system
- ② INTEL I5 processor
- ③ 4GB DDR3 memory
- ④ 128GB SSD hard disc
- ⑤ 4 USB
- ⑥ 1 RJ45 network port
- ⑦ 1 HDMI display

ST-18001 IL/RL Comprehensive Test Platform Case

Main Features

- 1: Multi-core No-mandrel return loss test without fiber matching cream;
- 2: Test 12/24/16/32/48/72 channel dual wavelength IL&RL automatically;
- 3: Adopt integrating sphere test scheme, meet the requirements of MTP/MPO optical devices;
- 4: Extend 48 channel ST-18000 optical power meter to support testing of MPO fan-out devices;
- 5: Configure a variety of special line through the software, cable test process, test mode diversification configuration, strong system compatibility;
- 6: Support aging monitoring test applications;
- 7: Support automatic test and single channel manual test;
- 8: EXCEL/database/XML and other data storage forms;
- 9: High performance, built-in PC, ensure system compatibility and operate fluency;

ST-18001 Optical Device Integrated Test System

ST-18001/ST-18000 application platform is an optimized testing and measuring platform. It can realize high efficiency development, testing and manufacturing of optical devices and optical modules.

With the rapid development of optical market, the optical device of multi-channel optical switch modules changes from traditional FBT splitters, CWDM to PLC, DWDM, MPO, AWG. Under such condition, ST-18001/ST-18000 test and extensible platform came into being. It can meet the needs of high efficiency production and testing in the optical device market. Compared with the previous generation of products, ST-18001/ST-18000 test system has the advantage of being able to integrate the most extensive and configurable modular product portfolio.

Two types of Configuration Scheme

Both ST-18001 and ST-18000 are 3U84 hole, 360 deep chassis. ST-18001 device contains a main unit of high-performance PC computers. The ST-18000 device does not contain a PC computer. Users can choose the relevant configuration according to their needs. A larger test system can be formed by cascaded combination of multiple devices when a device module is not enough to assemble.

Key Features / Advantages

- ① Provide two types of main unit configuration;
- ② ST-18001 integrated keyboard, mouse, multiple USB interface, display interface, etc.;
- ③ ST-18001 eliminates software installation compatibility issues;
- ④ Support multi-channel optical power meter module;
- ⑤ Support no-winding plug back loss module;
- ⑥ Support multi-channel optical switch;
- ⑦ Support high stability light source;
- ⑧ Support high-speed polarization controller;
- ⑨ Support VOA application;

ST-8204 MPO/MTP Polarity Tester (Cable Sequence Tester)



ST-8204 MPO/MTP Cable Sequence Tester

Specification

ST-8204 polarity tester is an intelligent product designed for polarity judgment and on-off analysis in the process of MPO/MTP cable production. Through one click automatic scanning operation, it can quickly indicate the state of cable on and off, polarity (line order) state, alarm and error analysis. ST-8204 provides a fast, accurate and efficient solution for MPO/MTP cable production, semi finished product testing and finished product inspection.

Product features

1. Compatible with 16 core, 32 core and other special core number test
2. Compatible with single mode 9/125, multimode 50/125, multimode 62.5/125 fiber core
3. Support custom polarity settings
4. Support learning model
5. Support error alarms
6. Support error polarity analysis
7. Support MPO connector quick-wear parts replaceable
8. One button operation
9. Support USB, RS232
10. Support PC software application

Specification

Specifications	SM	MM
Source Channels	24	24
Test Fiber Type	9/125	50/125 & 62.5/125
Optical Output Connector Type	MPO/PC	MPO/PC
Test Time	<3s	
Communication Interface	USB/RS232	
Display	4.3" TFT Color Monitor	
Operation Temperature	-5 ~ +40 ℃	
Storage Temperature	-25 ~ +70 ℃	
AC Power	AC180 ~ 240 (50Hz)	
Dimension (mm)	2U=235*380	



ST-3224 Handheld MPO Power Meter

Specification

ST-3224MPO Optical Power Meter and ST-3124MPO Optical Light Source is special for testing MPO fiber. At recent years, as the rapid development of data centre and cloud computing, also with rapid growth of multi fibers" (MPO) requirement. However, on the site of measurement process, traditional single channel Optical power meter with complex measurement and low credibility. Based on this, ST-3224&ST-3124 MPO products arises at this moment. The product can test the insertion loss of MPO fibers and polarity with only one key. And the integration of a variety of data storage, threshold analysis, data export and other applications. Compared with the traditional instrument, the test efficiency of ST-3224 & ST-3124 is more than 10 times. it is the best choice for field application of MPO room test, calibration of production line, Determination of polarity.

- ◆ 12 Specific Channels
- ◆ High Precision of color LCD display
- ◆ 100 history data reports
- ◆ If there is no operation in 5 mins, the screen will adjust the backlight automatically and enter the power saving mode
- ◆ Switch 4 functions interface with one key (single channel optical power meter, 12 channels Optical power meter, MPO testing, Column interface)
- ◆ Copy the data to the computer directly with USB interface, which is convenient for user.
- ◆ The user can customize the threshold to test
- ◆ Built-in 3500 Ma high-capacity lithium battery, work time more than 10 hours
- ◆ Humanized operation shape, easy to use.

ST-3124 Technical Specification

Laser Type	FP LD
Wavelength	850 or 1300 .1310 or 1550nm
Frequency	0 Hz 270Hz 1KHz 2KHz
Fiber type	9/125 50/125 or 62.5/125
Interface Type	SM/MM MPO/PC 12 core
Output Power	> -10dBm
Stability	±0.2(15min.) ±0.5(8hours)

ST-3224 Technical Specification

Detector	InGaAs
Wavelength Range	850-1700nm
Calibration Wavelength	850 1300 1310 1550nm
Optical Power Meter Range	+3--50 dBm
Insertion Loss Accuracy	< 0.2s/channel
Resolution	0.01dB
Linearity	±0.2dB(+5--50dBm)
System Control	USB
Interface Type	SM/MM MPO/PC 12 core
Working Temperature	-5℃ -- +40℃
Continuons Working Hours	> 10hours
Weight	< 850g
Channels	12
Outline Dimension	220x110x70mm

Standard Ordering information:

SM OLS 12 core 1310nm	1pc
SM OLS 12 core 1550nm	1pc
MM OLS 12 core 850nm	1pc
MM OLS 12 core 1300nm	1pc
MPO Power Meter	1pc



SUNMA-MT MPO Fiber Interferometer



SUNMA-MT Fiber Connector Optical Interferometer is a high precision instrument developed and manufactured by SUNMA, to measure the end face geometry of optical fiber connectors. It can supply the 3D topology image combining the newest high-speed computer and powerful software system.

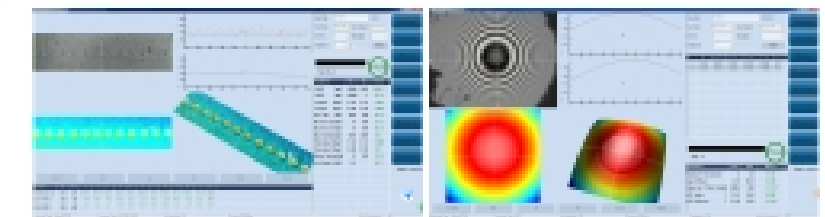
Information:

SUNMA-MT interferometer use white light and red light combined with the measurement of multi-fiber connector, the use of red light to measure single fiber connectors. Single and multi fiber measurement use the same software design, a key switching. The process of focusing, calibration, and measurement is completed automatically by software. SUNMA-MT single - and multi - fiber interferometer is mainly divided into two parts, the host computer and the special measuring software. The equipment is mainly composed of the following

Key Features and Benefits:

1. No-contact white light and fast response of measurement.
2. Precise data processing, with high accuracy measurement results.
3. Novel robust algorithm, accurate results even with contaminated ferrule surface
4. High-precision and long life fiber clamp.
5. Automatically generate three-dimensional map, fitting map which directly reflect the details of the optical fiber connector;
6. Automatically generate test reports and test data in Excel format, which is easy to manage and print;

(2)Simple and user friendly software interface



	Measure Item	Measurement Range	Repeatability	Reproducibility
Multi-Fiber	X/Y Ferrule Radius (mm)	3-∞	1%	3%
	X/Y Ferrule Angle (°)	0 or 8	0.01	0.02
	Fiber Height (um)	0-8	0.015	0.025
	Test Speed(Second)	MT-12 5s (Without Auto Focusing)		
Single-Fiber	Radius Of (mm)	3-∞	0.1%	0.2%
	Fiber Height (nm)	-150~+150	1	2
	Appex offset (um)	0-500	1.0	1.5
	APC Angle (°)	0 or 8	0.01	0.015
	Test Speed(Second)	0.5s		
Objective Zoom Time			2X	
Resolution Ratio			2.6um	
Light Source			Red and White	
Power Supply			220V 50Hz	

FHO5000 Multi-wavelength OTDR



FEATURES

- Integrated design, smart and rugged
- IP65 protection level, outdoor enhanced
- 7-inch anti-reflection LCD screen PON online test module (1625nm) is optional
- MMF test module (850/1300nm) is optional
- Support multi-language display and input

APPLICATIONS

- FTTH test with PON networks
- CATV network testing
- Access network testing
- LAN network testing
- Metro network testing
- Lab and Factory testing
- Live fiber troubleshooting

Description:

FHO5000 series Optical Time Domain Reflectometer (OTDR) is an intelligent meter of a new generation for the detection of fiber communications systems. With the popularization of optical network construction in cities and countrysides, the measurement of optical network becomes short and disperse; FHO5000 is specially designed for that kind of application. It's economic, having outstanding performance.

FHO5000 is manufactured with patience and carefulness, following the national standards to combine the rich experience and modern technology, subject to stringent mechanical, electronic and optical testing and quality assurance; in the other way, the new design makes FHO5000 more smart and compact and multi-purpose.

Whether you want to detect link layer in the construction and installation of optical network or proceed efficient maintenance and trouble shooting, FHO5000 can be your best assistant.

Ready for all kinds of environment

FHO5000 series OTDR is specially designed for tough outdoor jobs. IP65 protection level, lightweight, easy operation, low-reflection LCD and more than 12 hours working period make it perfect in field testing. Meanwhile, optional PCB board with water-proof coating helps FHO5000 series OTDR get better protection performance.

What you need is all-in-one!

FHO5000 series OTDR is a highly integrated platform that features with four module slots, with a large 7-inch color screen (with a touchscreen option), a high-capacity Lithium-Ion battery, an optional microscope (through universal serial bus [USB] port), and built-in optical test functions, such as PON test module, visual fault locator (VFL), optional power meter and laser source, making it qualified in the installation, turn-up, and maintenance of FTTH/Access optical networks.

Main functions Multi-mode OTDR

Besides standard single mode (1310/1550nm), FHO5000 series OTDR supports multi-mode (850/1300nm) test mode for option to analyze multi-mode fiber network.

VFL (visual fault locator)

The VFL, available as a standard module in FHO5000 series OTDR, offers built-in 650nm visual fault location on a FC/UPC connector.

PON ONLINE TEST

FHO5000 series OTDR uses 1625nm wavelength to scan and analyze the access point and proceed online testing with optical filter, and will not disturb the service.

PM (power meter)

FHO5000 series OTDR comes with optional built-in power meter that let technicians easily verify the presence of a signal.

LS (laser source)

FHO5000 series OTDR comes with optional built-in laser source through OTDR1 Port that let technicians easily verify the total loss of the local network with a power meter.

FM (fiber microscope)

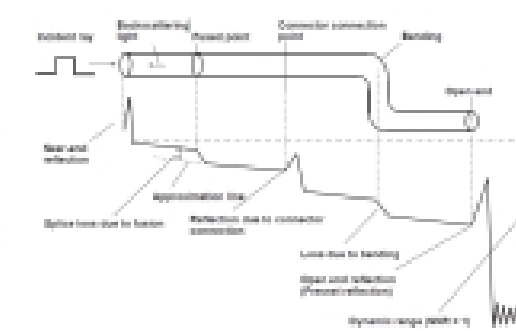
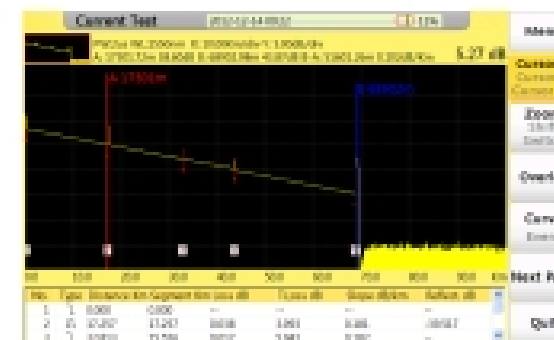
The optional fiber inspection probe facilitates the inspection before the connection. FHO5000 series OTDR offers this capability through a USB port connection, which allows quick and easy inspection of connector end faces for contamination and also enables it capture and store the image.

Humanized Test Interface

FHO5000 series OTDR could display Splice loss, Connector loss, Fiber attenuation, Reflection of points, Link optical return loss and distance to fiber events etc. With test information in a smart way, user could get detailed information immediately.

Quick fit in short time

Simplified display style and structured menus help effective in reducing the time of study.

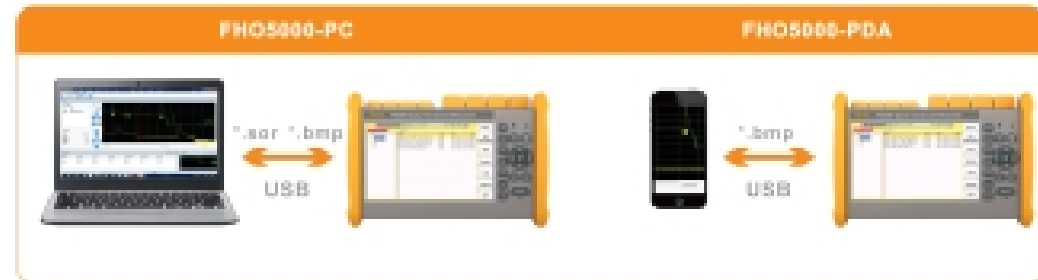


Result transfer

Check test results on PC or PDA through USB; 4GB large internal memory space could store more than 40,000 groups of results.

Link in line

- Download reference traces and settings from database
- Send measurement results via email
- Ask for remote help



Data Manager

Use Data Manager to elaborate and print out result files on upper computer within a few steps.

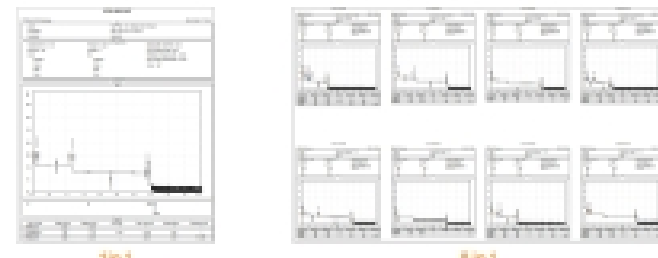
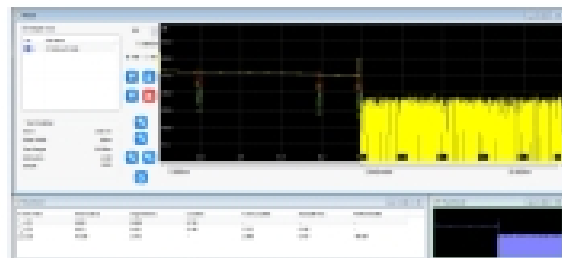
High Compatibility

•Support:

- Windows 7/8(32/64 bit system)
- Microsoft Office Excel 2007/2010/2013

• Delicate Report

- Simplified display style easy to read, support multi-result printing.



Specification

General

Dimension	253×168×73.6mm 1.5kg (battery included)
Display	7 inch TFT-LCD with LED backlight (touch screen function is optional)
Interface	1×RJ45 port, 3×USB port (USB 2.0, Type A USB×2, Type B USB×1)
Power Supply	10V(dc), 100V(ac) to 240V(ac), 50–60Hz
Battery	7.4V(dc)/4.4Ah lithium battery (with air traffic certification) Operating time: 12 hours①, Telcordia GR-196-CORE Charging time: <4 hours (power off)
Power Saving	Backlight off: Disable/1 to 99 minutes Auto shutdown: Disable/1 to 99 minutes
Data Storage	Internal memory: 4GB (about 40,000 groups of curves)
Language	User selectable (English, Simplified Chinese, traditional Chinese, French, Korean, Russian, Spanish and Portuguese-contact us for availability of others)
Environmental Conditions	Operating temperature and humidity: -10℃ – +50℃, ≤95% (non-condensation) Storage temperature and humidity: -20℃ – +75℃, ≤95% (non-condensation) Proof: IP65 (IEC60529)
Accessories	Standard: Main unit, power adapter, Lithium battery, FC adapter, USB cord, User guide, CD disk, carrying case Optional: SC/ST/LC adapter, Bare fiber adapter

Technical parameter

Type②	Testing Wavelength (MM: ±20nm, SM: ±10nm)	Dynamic Range (dB)③	Event/Attenuation Dead-zone (m)④
FHO5000-M21	850/1300	19/21	0.8/4
FHO5000-MD21	850/1300 1310/1550	19/21 35/33	0.8/4 1/4
FHO5000-MD22	850/1300 1310/1550	19/21 40/38	0.8/4 1/4
FHO5000-D26	1310/1550	26/24	0.8/4
FHO5000-D32	1310/1550	32/30	0.8/4
FHO5000-D35	1310/1550	35/33	0.8/4
FHO5000-D40	1310/1550	40/38	1/4
FHO5000-D43	1310/1550	43/41	1/5
FHO5000-D45	1310/1550	45/43	1/5
FHO5000-T40F	1310/1550/1625	40/38/38	1/4
FHO5000-T43F	1310/1550/1625	43/41/41	1/5
FHO5000-T45F	1310/1550/1625	45/43/43	1/5
FHO5000-TC35F	1310/1550/1650	35/33/31	0.8/4
FHO5000-TP35	1310/1490/1550	35/33/33	0.8/4

Test parameter

Pulse Width	Single mode: 3ns, 5ns, 10ns, 20ns, 50ns, 100ns, 200ns, 500ns, 1μs, 2μs, 5μs, 10μs, 20μs Multi-mode: 3ns, 5ns, 10ns, 20ns, 50ns, 100ns, 200ns, 500ns, 1μs, 2μs
Testing Distance	Single mode: 100m, 500m, 2km, 5km, 10km, 20km, 40km, 80km, 120km, 160km, 240km Multi-mode: 500m, 2km, 5km, 10km, 20km, 40km
Sampling Resolution	Minimum 5cm
Sampling Point	Maximum 128,000 points
Linearity	≤0.05dB/dB
scale Indication	X axis: 4m~70m/div, Y axis: Minimum 0.09dB/div
Distance Resolution	0.01m
Distance Accuracy	±(1m+measuring distance×3×10-5+sampling resolution) (excluding IOR uncertainty)
Reflectance Accuracy	Single mode: ±2dB, multi-mode: ±4dB
IOR Setting	1.4000–1.7000, 0.0001 step
Units	Km, miles, feet
OTDR Trace Format	Telcordia universal, SOR, issue 2 (SR-4731) OTDR: User selectable automatic or manual set-up
Testing Modes	Visual fault locator: Visible red light for fiber identification and troubleshooting Light source: Stabilized Light Source (CW, 270Hz, 1kHz, 2kHz output) Field microscope probe
Fiber Event Analysis	-Reflective and non-reflective events: 0.01 to 1.99dB (0.01dB steps) -Reflective: 0.01 to 32dB (0.01dB steps) -Fiber end/break: 3 to 20dB (1dB steps)
Other Functions	Real time sweep: 1Hz Averaging modes: Timed (1 to 3600 sec.) Live Fiber detect: Verifies presence communication light in optical fiber Trace overlay and comparison

VFL Module
(Visual Fault Locator, as standard function):

Wavelength (±20nm)	650nm
Power	10mw, CLASS III B
Range	12km
Connector	FC/UPC
Launching Mode	CW/2Hz

LS Module
(Laser Source, as optional function):

Working Wavelength (±20nm)	1310/1550/1625nm ^⑤
Output Power	Adjustable -25~0dBm
Accuracy	±0.5dB
Connector	FC/UPC

PM Module
(Power Meter, as optional function):

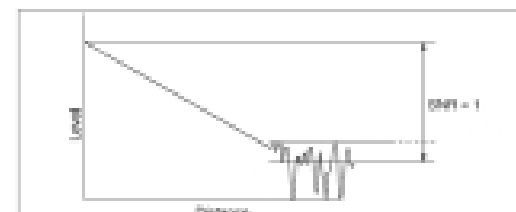
Wavelength Range (±20nm)	800~1700nm
Calibrated Wavelength	850/1300/1310/1490/1550/1625/1650nm
Test Range	Type A: -65~+5dBm (standard); Type B: -40~+23dBm (optional)
Resolution	0.01dB
Accuracy	±0.35dB±1nW
Modulation Identification	270/1k/2kHz, Pinup ≥ -40dBm
Connector	FC/UPC

FM Module
(Fiber Microscope, as optional function):

Magnification	400X
Resolution	1.0μm
View of Field	0.40×0.31mm
Storage/working Condition	-18℃~35℃
Dimension	235×95×30mm
Sensor	1/3 inch 2 million of pixel
Weight	150g
USB	1.1/2.0
Adapter ^⑥	SC-PC-F (For SC/PC adapter) FC-PC-F (For FC/PC adapter) LC-PC-F (For LC/PC adapter) 2.5PC-M (For 2.5mm connector, SC/PC, FC/PC, ST/PC)

Notes:

- ①Typical, backlight off, sweeping halted at 25℃, 12 hours typical continuous testing.
- ② Model T40F/T43F/T45F are integrated with optical filter, which allow them to test PON network online (by using 1625nm wavelength) and will not interrupt the fiber signal.
- ③Dynamic range is measured with maximum pulse width, averaging time is 3 minutes, SNR=1; The level difference between the RMS noise level and the level where near end back-scattering occurs.



- ④Event dead zone is measured with pulse width of 3ns; attenuation dead zone is measured with pulse width of 5ns.

- ⑤1310/1550nm laser source uses OTDR1 port, and 1625nm or 850/1300nm uses OTDR2 port.
- ⑥For more adapters, please contact us.

OTDR Launch Cable



Description

OTDR Launch cable is designed to aid in the testing of fiber optic cable when using an OTDR. The OTDR Launch Fiber box is used with Optical Time Domain Reflect meters (OTDR's) to help minimize the effects of the OTDR's launch pulse on measurement uncertainty. Available in different configurations and fiber lengths.

Complied with or exceeds Standard

- ITU-T G652.D, G656.A
- ITU-T G651.1 OM1 OM2 OM3 OM4
- IEC60793-2-10 type A1a.1/A1b OM1/OM2, type A1a.2 OM3, type A1a.3 OM4
- Telcordia (formerly Bellcore) GR-326-CORE
- RoHS Compliant Directive 2011/65/EU

Applications

- Use as OTDR launch/receive cable.
- Test link loss with an OTDR.
- Measure insertion loss and reflectance of near/far end connector.
- Pulse suppressor for the first reflection at the beginning of a fiber.

Features

- Standard boxes along with custom configurations for OTDR applications. Compact and rugged packaging. Portable for field use.
- Prevents fiber damage and ensures accurate results.
- Pulse suppressor, Launch Box, Delay Line, Installation/Testing, Training, Calibration.
- Compound latch for positive seal and easy opening with locking feature.
- Water and dust prove allowing the unit to be taken into almost any environment.
- Case can house up to 2,000 meters of fiber. Auto Purge Valve for changes in altitude and temperature.

Specifications Mechanical & Environmental Characteristics

Dimension	L 9.37" x W 5.56" x H 2.62"
Material	SR Polypropylene
Color	Yellow
Weight	0.75kg without fiber
Packaging	Rugged, hard-shell transit case
Storage Temperature	-40O to +85O C
Operating Temperature	-40O to +85O C
Humidity	0 to 95%, non-condensing

Fiber & Connector Characteristics

Fiber Types	G652D, G657A, OM1, OM2, OM3, OM4
Fiber Length (m)	100 up to 2000 (max)
Lead Length	2 Meters, 3mm buffer
Typical Loss	<1dB @ 1310 for 1000 meters
Connector Type	SC/LC/FC/ST
Polish	PC, UPC, APC
Return Loss*	UPC >= 50dB, APC >= 60dB, PC >= 35dB
Repeatability (dB)	<= 0.2 (1000 times)
Exchangeability (dB)	<= 0.2

Ordering information: OTDR-A-B-C-D

A for Input connector;	B for Output connector;
C for Fiber Mode;	D for Length;
For Example: OTDR-SC-FCA-5M-1KM; 1KM 5M, SC on I/P lead, FC/APC on O/P lead	



ST-3216 New Optical Power Meter

ST-3216 Handheld Optical Power Meter is SUNMA newly designed fiber optic tester, it aims at fiber network installation, fiber network engineering acceptance and fiber network maintenance. Combined usage with ST-3116 handheld optical light source, it offers a quick and accurate testing solution on both SM and MM fibers. Compared with usual power meters, the ST-3216 has more great functions/features of automatic wavelength identification and switching and intelligent backlight control. Also the ST-3216 features good appearance, good touch feeling and considerate humanity design.

Specifications

Model	ST-3216A	ST-3216C
Calibrated (nm)	850, 1300, 1310, 1490, 1550, 1625	
Detector type	InGaAs	
Measurement Range (dBm)	-70~+6	-50~+26
Uncertainty (dB)	±0.15 (3.5%)	
linearity (dB)	±0.02	
Display resolution(dB)	0.01	
Frequency ID (Hz)	270, 330, 1K, 2K	
Wave Id (nm)	1310, 1490, 1550, 1625	
Date storage capacity	1000	
Communication Port	USB	
Optical Connector type	FC, SC, ST interchangeable	
Alkaline battery	3*AA, 1.5V	
Power Supply Adaptor(V)	8.4	
Battery Operating time (h)	200	
Operation Temperature(°C)	-10~+60	
Storage Temperature(°C)	-25~+70	
Outline size (mm) /weight	180*90*45(250g)	

Standard Packages

MODEL	INCLUDES
All ST-3216 Models	ST-3216 Optical Power Meter, 3pcs 1.5V batteries, AC Adaptor, User Manual, Cotton swabs and Soft carrying case.

Features

- Wave ID—Automatic wavelength identification and switching (when used with ST-3116 handheld light source)
- Frequency ID/Tone detection--- Automatic frequency identification
- Intelligent backlight control (light intensity can be adjusted properly according to ambient light, which greatly reduced power consumption)
- Data storage function, up to 1000 test records
- USB communication port for saved testing records download
- Reference power level can be set up and stored
- User self calibration function
- Auto-off function can be activated or deactivated.
- AA alkaline and AC adaptor for power supply
- Low battery indication



ST-3223 Optical Power Meter(VFL)

ST-3223 Power meter and VFL integrated in one unit, this tester allows to perform both optical power/loss measurements and Fiber faults tracing visually.

- optical connectors
- Maintenance in Telecom Maintenance CATV
- Fiber Optic Lab Testing
- Other Fiber Optic Measurements

Specifications

Model	ST-3223
Operating wavelength (PowerMeter Module)	850/1300/1310/1490/1550/1625
Detector Type	InGaAs
Out put power(VFL module)	1mW or 10mW
Power Measurement Range	-70~ +6dBm / -50~ +26dBm
Uncertainty	±0.5dB
Resolution	0.01
Operation temperature	-10~ +60 °C
Storage Temperature	-25~ +70 °C
Auto-off function	Yes, Auto-off after 10minutes idle time
Battery Life @ OPM	180 hours
Battery Life @ VFL	60 hours
Power Supply	3pcs AA Batteries
Weight	700g (including batteries)
Size	240*160*80mm

Standard Packages

MODEL	INCLUDES
All 3223 Models	VFL Power Meter, 3pcs alkaline batteries, User Manual and Soft carrying case.



Features:

- * It can experiment at Voice, data and video signal synchronous measurement and display on BPON/EPON/GPON.
- * Providing simultaneous measurement for all three wavelengths on the fiber (1490nm, 1550nm, 1310nm). * Used in Burst mode measurement of 1310nm upstream.
- * Use the software connect with PC, setting the threshold, data transfer, and calibration the wavelength.
- * USB communication port enables data transfer to a PC. 1000 measurement items can be saved in 3213 PON power meter or computer for data review.
- * With optical power meter modul, include 850、1300、1310、1490、1550、1625sxs (3213AP, 3213A without 850nm wavelength) ; With visual fault locator modul (3213and3213AV)
- * Optical power meter and VFL with one port. (only 3213A)
- * Optional Chinese/English display.
- * Offers up to 10 different threshold sets in total, Three status LEDs represent different optical signal conditions of Pass, Warn and Fail respectively.
- * 10 minutes Auto-off function can be activated or deactivated
- * Good key design, high sensitivity, greatly reducing the volume and weight of the tester.
- * Different models corresponding to different function, according to own use to choose .

ST-3213(N) PON Power Meter

ST-3213 Series PON Optical Power Meter target at the FTTx application and maintenance. This power meter is able to simultaneously test and estimate the signals of the voice, data and video. It is an essential and ideal tool for the construction and maintenance of the PON

Specifications:

PON module:	3213	3213A	3213AV	3213AP
1310 upstream measurement				
Pass Zone(nm)	1260nm ~ 1360nm			
Measurement Range(dBm)	-40dBm ~ +10dBm			
Output power(max)	15dBm			
Isolation@1490/1550(dB)	> 40dB			
Burst mode measurement error	< ±0.5dB			
1490 downstream measurement				
Pass Zone(nm)	1470nm ~ 1505nm			
Measurement Range(dBm)	-40dBm ~ +10dBm			
Output power(max)	15dBm			
Isolation@1310/1550(dB)	> 40dB			
1550 downstream measurement				
Pass Zone(nm)	1535nm ~ 1570nm			
Measurement Range(dBm)	-40dBm ~ +10dBm			
Output power(max)	25dBm			
Isolation@ (1310/1490nm)	> 40dB			
Measurement Accuracy				
Connatural uncertainty(dB)	±0.5dB			
Linearity(dB)	±0.1dB			
Passing through insertion Loss(dB)	< 1.5dB			
General Information				
Detector Type	InGaAs			
Optical Connector	FC/SC/ST Interchangeable/2.5 univesal adapter			
Fiber Type	SM 9/125um			
Measurement Unit	dB/dBm/xW			
Resolution (dB)	0.01dB			
Operation Voltage(V)	DC 3.3V~5.5V			
Power Supply	3pc 1.5V battery			
Continuously Operation time(h)	PON: 90h	PON:90h OPM:100h VFL:50h	PON:90h VFL:50h	PON:90h OPM:100h
Operation Temperature(°C)	-10°C ~ 60°C			
Storage temperature(°C)	-25°C ~ 70°C			
Weight(kg)	650g	650g	650g	650g

Note: The operation time of the battery are all for the instrument that do not turn on back light, if the back light turn on the operation time will be shorted.

Normal Optical Power Meter Module:

Normal Optical Power Meter	ST-3213②	3213A	3213AP
Measurement Accuracy			
Connatural uncertainty(dB)	None	±0.5dB	
Linearity(dB)		±0.1dB	
Measurement Range(dBm)		-70dBm ~ +6dBm	
General Information			
Measurement Unit	None	dB/dBm	
Resolution (dB)		0.01dB	
Calibration Wavelength(nm)		1310/ 1490/1550/1625	1310/ 1490/1550/1625
Detector Type		InGaAs	
Optical Connector		FC/SC/ST Interchangeable/2.5 universal adapter	

② : ST-3213-do not have the OPM Module :

VFL	ST-3213③	3213A	3213AV
Output power	None	> 0.5mW	
Wavelength		650nm	
Optical Connector		FC/SC/ST Interchangeable/2.5 universal adapter	
Fiber Type		SM/MM	

③ : ST-3213 without VFL Module.

Model	ST-3213 Series PON Optical Power Meter	
Items	Title	Quantity
1	3213	tester 1 unit
2	User Manual	1 pc
3	USB	1 pc
4	Soft CD	1 pc
5	1.5VAA Battery	3pc



ST-3211 Optical Power Meter

It is a handheld optical power meter, newly released in 2007, which can be used for absolute optical power measurements as well as for relative loss measurements in optical fibers. A $\varnothing 1.0\text{mm}$ photosensitive area photodiode is used to significantly improve the stability and the reliability. It features ingenious appearance, a wide range of power measurement, high accuracy, an user self-calibration function and a reference power level storage.

Specifications

MODEL	ST-3211A	ST-3211C
Wavelength(nm)	800–1700nm	
Detector Type	InGaAs	
Detector Size	$\varnothing 1.0\text{mm}$	
Measurement Range (dBm)	-70–+10	-50–+30
Uncertainty	$\pm 5\%$	
Calibrated Wavelength (nm)	850,1300,1310,1490,1550,1625	
Resolution(dB)	0.01	
Optical Connector	FC(Interchangeable SC, ST) / as well as 2.5mm universal	
Power Supply	Alkaline Battery(3 AA 1.5V batteries); AC Adaptor(9V)	
Battery Operating Time	140 h with 1.5V Battery(3pcs)	
Operating Temperature (°C)	-10 ~ +60	
Storage Temperature (°C)	-25 – +70	
Relative Humidity	0 to 95% (non-condensing)	
Dimension(mm)	190X100X50	
Weight(g)	370	

Standard Packages

MODEL	INCLUDES
All ST-3211 Models	ST-3211 Optical Power Meter, 3pcs 1.5V batteries, AC Adaptor, Instruction Manual, Cotton Tampon and Soft carrying case.

Features

- Reference power level storage (Ref Setting)
- User self-calibration function
- Comfortable LCD display and backlight LCD display supports night operation.
- Power measurements in dBm or mw and insertion loss in dB
- Optional 10 minutes Auto-off function
- AA alkaline batteries can last more than 140 hours, AC adaptor also available
- Low battery power indication

Applications

- Maintenance in Telecom
- Maintenance CATV
- Test Lab of Optical Fibers
- Other Fiber Optic Measurements



ST-3208 Optical Power Meter

It is a compact and an easy-to-use testing instrument for optical fiber networks, which can be used for absolute optical power measurements as well as for relative loss measurements in optical fibers. It features ingenious appearance, wide range of power measurement, high accuracy and user self-calibration function with high performance-to-price ratio.

Specifications

Type	ST-3208A	ST-3208C
Wavelength(nm)	800–1700nm	
Detector	InGaAs	
Measurement Range (dBm)	-70–+3	-50–+26
Uncertainty	$\pm 5\%$	
Calibrated Wavelength (nm)	850,980,1300,1310,1490,1550	
Resolution(dB)	0.01	
Optical Connector	FC(interchangeable SC, ST) / as well as 2.5mm universal	
Power Supply	Alkaline Battery(3 AA 1.5V batteries)	
Battery Operating Time	240 h with 1.5V Battery(3)	
Operating Temperature (°C)	-10 – +60	
Storage Temperature (°C)	-25 – +70	
Relative Humidity	0 to 95% (non-condensing)	
Dimension(mm)	175x82x33	
Weight(g)	310	

Standard Packages

MODEL	INCLUDES
All ST-3208 Models	ST-3208 Optical Power Meter, Protective Rubber Boot, 3pcs 1.5V batteries, Instruction Manual, Cotton Tampon and Soft carrying case.

Features

- User self calibration function
- Comfortable LCD display and optional backlight LCD display supports night operation
- Power measurements in dB or mw and insertion loss in dB
- Low battery consumption, more than 240 hours continual operation time for three 1.5V alkaline batteries
- Optional 10 minutes Auto-off function

Applications

- Maintenance in Telecom
- Maintenance CATV
- Test Lab of optical fibers
- Other Fiber Optic Measurements



ST-3205 Mini Handheld Optical Power Meter

It is the most lightweight and compact in size testing instrument. It features ease-of-use and economy advantages and can be used for absolute power measurement in optical fibers. ST-3205 in combination with the ST-3110 mini handheld light source become the most portable and advantageous testing pair.

Specifications

Type	ST-3205A	ST-3205B	ST-3205C	ST-3205D
Wavelength(nm)	800~1700nm			
Detector	InGaAs			
Measurement Range (dBm)	-60~+3	-50~+10	-40~+20	-30~+30
Uncertainty	±5%			
Calibrated Wavelength(nm)	850,980,1310,1550nm			
Resolution(dB)	0.01			
Optical Connector	FC(Interchangeable SC,ST) / as well as 2.5mm universal			
Power Supply	Alkaline Battery			
Battery Operating Time	360 hours with three 1.5V batteries			
Operating Temperature(°C)	-10 ~ +60			
Storage Temperature(°C)	-25 ~ +70			
Relative Humidity	0 to 95% (non-condensing)			
Dimension(mm)	115X60X20			
Weight(g)	105			

Features

- The most compact in size, ideal for field operation
- Power measurements in dBm and mW.
- 10 minutes Auto-off function conserving battery life

Applications

- Maintenance in Telecom
- Maintenance CATV
- Fiber Optic Lab Testing
- Other Fiber Optic Measurements

Standard Packages

MODEL	INCLUDES
All ST-3205 Models	ST-3205 Optical Power Meter, Alkaline battery, Instruction Manul, Cotton swabs and Protective Holster.



ST-3402 Mini Optical Power Meter

ST-3402 Optical Power Meter is a highly cost-effective portable power meter and it's newly launched by SUNMA. It can be used for the optical power measurement within the wavelength 800~1700nm. ST-3402 also has a wide measurement range which is more than 70dB. It's designed with the common wavelength calibration points, such as 850nm, 1300nm, 1310nm, 1490nm, 1550nm, 1625nm. The instrument is widely used in fiber-optic link construction, testing and maintenance.

Specification

Type	ST-3402A	ST-3402C
Wavelength(nm)	800~1700nm	
Detector	InGaAs	
Measurement Range (dBm)	-70~+6	-50~+26
Uncertainty(dB)	≤ ±0.25	
Calibrated Wavelength(nm)	850,980,1310,1550nm	
linearity(dB)	≤ ±0.1	
Power supply	AAA 1.5V battery(3pcs)	
Auto-off time	10mins	
Battery continuous operation time(h)	300	
Working temperature(°C)	-10 ~ +60	
Storage Temperature(°C)	-25 ~ +70	
Dimension(mm)	166*106*20	
Weight(g)	90	



ST-3234 Pocket Optical Power Meter

1. Overview

This series optical power meter is a high precision, mini type optical fiber engineering application instrument.

2. Product Features

- ① High precision , low error , large dynamic range
- ② Mini type ergonomic design , single hand operation , flexible and convenient to use.
- ③ LED HD full view display screen
- ④ Universal adapter FC/SC/ST
- ⑤ Wavelength memory function
- ⑥ Micro-USB power supply
- ⑦ Auto-off function , energy-saving
- ⑧ calibrated wavelength
- ⑨ Support lanyard , falling/losing-proof
- ⑩ Support dBm, dB , W unit switching

3. Application Range

- ① Optical fiber CATV network
- ② Optical fiber communication engineering
- ③ Research on optical fiber sensing
- ④ Optical devices manufacturing

4. Specifications

Model	A	C
Wavelength Range (nm)	850-1700	
Detector Type	InGaAs	
Measurement Range (dBm)	-70~+6	-50~+26
Uncertainty (dB)	±0.3	
Calibrated Wavelength (nm)	850,1300,1310,1490,1550,1625	
Display Resolution (dB)	0.05	
Operating Temperature (°C)	-10~+60	
Optical Connector	FC Only	
Storage Temperature (°C)	-25~+70	
Auto-off Time (min)	10	
Battery Operating Time (h)	≥130	
Power Supply	3*AA 1.5V/micro USB	
Weight (g)	70 (without battery)	
Dimensions (mm)	128x52x22	

Note:

- ① Wavelength range: specify a standard operating wavelength range from λ_{min} to λ_{max} , and the optical power meter designed in this wavelength range works well within specified parameters.
- ② Power measurement range: the range of the maximum optical power can be measured according to the specified index.
- ③ Uncertainty: The error between the measured results of a certain optical power and the standard optical power test results.



ST-3233 Plastic-Fiber Power Meter

ST-3233 Handheld Plastic Optical Power meter is the newest product of our company, which is used for testing the Optical power with the wavelength range 600-1000nm, the unit is W, dBm, with high resolution. There are 5 calibration wavelengths 635nm, 650nm, 780nm, 850nm, 980nm, both Linearity or nonlinearity could show the optical power, it can be used for testing Optical power of short wavelength.

The instrument is small size, light weight, it is convenient to take as low power consume, LCD Display, which make the testing more convenient and faster.

Calibration wavelength: 635nm, 650nm, 780nm, 850nm, 980nm

Measurement Range: -60~+10dBm

2. Specification

Model	ST-3233
Wavelength range	600-1000nm
Detector Type	Si(about 4X4mm)
Measurement Range(dBm)	-60~+10
	±5%
Calibration wavelength	635,650,780,850,980
Resolution	Linearity:0.1%; logarithmic display:0.01dBm
Operating Temperature(°C)	-10~+60
Storage Temperature (°C)	-25~+70
Auto-shut off time (min)	10
Battery work time (h)	60
Power supply	3pcs AAA1.5V
Weight (g)	200
Dimension (mm)	150x74x26

Notes:

- 1 Wavelength range: There is a standard work wavelength range , which is from λ_{min} to λ_{max} . The power meter could work as the Specification under the standard wavelength range.
- 2 Measurement Range: Test the maximum Optical power value as the specified requirement.
- 3 Sensitivity: It can show the minimum optical power under the specified wavelength and measurement range.
- 4 Uncertainty: the error between the test result of optical power value and standard optical power value.



ST-3226A CWDM Optical Power Meter

ST-3226A Power Meter is specially designed for system, covering wavelength from 1270~1610nm. It measures and All calibrated wavelengths will be tested simultaneously and all test results will show in the LCD screen. This power meter features simple operation, quick response and high measurement accuracy which make it an ideal tester in system installation and maintenance. monitors optical power and attenuation value of 18 channels from wavelength 1270nm to 1610nm wavelength.

Features

- * Simultaneously test and show 18 wavelengths
- * Friendly interface and easy operation
- * Save and upload test results via USB port
- * 1000 records
- * Columnar graphics or list mode to show test data
- * Color TFT-LCD display, high resolution 320*240
- * Built-in clock and can edit test fiber number
- * Quick start operation, requiring no warm-up time * Light weight

Specifications

Model	ST-3226A Optical Power Meter
Wavelength Range	1270 – 1610 nm
Number of Channels	18
Wavelength resolution	20nm
Measuring Wavelength (nm)	1270/1290/1310/1330/1350/1370/1390/1410/1430 1450/1470/1490/1510/1530/1550/1570/1590/1610
Dynamic range	+10 to -40dBm
Resolution	0.01dB
Optical interface	FC/PC(FC, LC, ST available)
Operating Temperature	-10 to +60℃
Power supply	Rechargeable Battery/AC power adapter
Time of Operating	10h
Dimension	410cm*210cm*250cm
Weight	2.6kg

Standard Packages

MODEL	INCLUDES
ST-3226A	3226A, USB cable, AC Adapter, User Manual, CD, Cotton swabs and Soft carrying case.



ST-8101 Desk-top Optical Power Meter

Features

- * Optical power meter can be configured for external probe or panel mounting.
- * Intelligent alarm and threshold allocation.
- * Buzzer alarm and font color alarm setting.
- * PDL function Test.
- * Spectroscopic ratio, additional loss, uniformity testing function
- * English and Chinese configuration function.
- * Provide RS232 communication function, realize the power monitoring under no one guard, automatically store the data

Specifications

Wavelength Range(nm)	850---1700
Measurement Range (dBm)	+5 --- -75
Linearity (dB)	±0.04 (+5 --- -50dB)
	±0.08 (+5 --- -50dB)
Dimensions (mm)	235x300x96



ST-8102 4-Channel Optical Power Meter

Summary

ST-8102 Four-Channel Optical Power Meter provide superior dynamic range and Linearity technical index . It adopts RS232-C and RS485 communication interface, can communicate directly with PC, and communication protocol is compatible with standard instruction. The reduced instruction can greatly increase the communication rate with the PC, and the standard instruction can greatly improve the reliability of the communication with the PCB.

Features

- 1) optical power meter can be configured as an external probe or panel mount
- 2) Provide Rs232 Communication function
- 3) Configure five adapter connector type
- 4) 1-4 Channel Optical Power Meter can be optional

The user can carry on the secondary development according to the application demand. Detachable external optical power meter probe, can meet the majority of optical device manufacturers, scientific research institutions, colleges and universities application needs.

ST-8103 Dual-Channel High Speed Power Meter

Features

- 1: Wavelength can be adjustable every 5pm
- 2: Highest sampling rate: 50KSPS
- 3: Highest external rate: 10KHz
- 4: Provides external synchronous trigger and single trigger sampling function (PDL mode).
- 5: Provides maximum automatic search work mode (PDL mode)
- 6: Provides dual-channel automatic ratio calculation. (UNI mode)
- 7: More than 30 user calibration wavelengths
- 8: More menu settings, more comprehensive system function
- 9: Optical power detection can be low to -85dBm

Specifications

Wavelength test range	850nm ---- 1700nm
Measurement Range	+5dBm ---- -85dBm
Linearity	±0.15dB (-65 --- -75dBm)
	±0.3dB (-75 --- -85dBm)
Total uncertainty	±3%
Dimensions (mm)	235x380x96

ST-8104 LAN-WDM Optical Power Meter

Data traffic is in a rapid growth trend at recent years, the global mobile network data traffic compound annual growth rate of 57%. The annual compound growth rate of Internet of things IOT investment has reached more than 30 percent in the Chinese Market. According to statistics, the annual compound growth rate of investment in the global three-network-in-one broadband network has reached about 15 percent. The rapid development of the multifaceted applications mentioned above depends on the support of data center network technology. All these promote the urgency and necessity of data center 100G network application. FiberHome, Foxconn, Huawei, and Shijia introduce AWG-based LAN_WDM transceiver modules. With the rapid growth in a number of tested pieces of (DUT), it is urgent to solve problems such as detection efficiency, setting costs, etc. ST-8104 is an optical and electromechanical integrated product, which can detect LAN-WDM transceiver modules of passive component of optical communication efficiently. It is a highly integrated inspection device.



Features

- High detection efficiency
- High accurate result with less insertion error.
- Easy operation with one key automatic inspection.
- Alarm of testing result and visual judgement of qualified products.



ST-3201N Bench-top New Optical Power Meter

It is a test instrument developed by SUNMA with a high precision and a wide measurement range. It features intelligent micro-processing control and automatic switch of the measurement range. The ST-3201 Single Channel Benchtop Power Meter divides the whole measurement range into 8 sections of the linear process. It eliminates the non-linearity differences caused by the PIN detector under the same wavelength and different power. It greatly improves the accuracy and stability.

Specifications

Type	ST-3201
Wavelength Range	800-1700nm (in 1nm increments)
Calibrated Wavelength (nm)	850nm, 980nm, 1310nm, 1480nm, 1550nm, 1625nm (Other wavelengths can be optional)
Photo Detector	InGaAs Ø 2mm (Optional Si Detector for Short Wavelength)
Measurement Range (dBm)	-70~+6 (other measurement range can be customized)
Intrinsic Uncertainty	±3%
Communication interface	Rs232
Resolution (dB)	0.01dB
Optical Connector	FC (SC, ST interchangeable) 2.5mm universal / 1.25mm universal
Power Supply	AC 220V (50Hz)
Operating Temperature (°C)	-10~+60
Storage Temperature (°C)	-25~+70
Dimension (mm)	290*260*120
Weight (kg)	3

Features

- 800-1700nm wide wavelength range, in 1nm increments
- R232 computer interface, for custom applications
- User self-calibration function
- Set "Ref" function, to enable the user to retrieve and display the measurement that has been stored as a reference. Link loss test result obtained automatically without any manual calculation
- Uses the new Data Acquisition technology to ensure optimum signal-noise ratio and larger detection range
- In small signal operation, using shield technology in internal circuit to ensure higher sensitivity, power display can reach -70dBm

Applications

- Teaching and studying of the fiber optic telecommunication
- Producing and researching of the optical components
- Maintenance of the telecom
- Maintenance CATV
- Other Fiber Optic Measurement

Standard Packages

MODEL	INCLUDES
ST-3201 all models	ST-3201 Optical Power Meter, Power Supply Cord, RS232 Cable, PC software disk, Fuse, Instruction Manual and Cotton tampon.



ST-3209 Handheld Optical Multi-meter

ST-3209 Handheld Optical Multi-meter integrates the functions of an intelligent optical power meter module and of a highly stable light source module in one unit. It can also provide data storage and upload functions. It is widely used in installation, measurement and maintenance of DDN, Telecom and CATV networks.

Specifications

Type	ST-3209A	ST-3209C
Optical Power Meter Module		
Detector Type	InGaAs	
Measurement Range(dBm)	-70~+6	-50~+26
Resolution(dB)	0.01	
Uncertainty	≤ ±0.25	
linearity (dB)	≤ ±0.1	
Frequency ID Range (Hz)	< 10K	
Optical Light Source Module		
Wavelengths(nm)	1310/1550(Other wavelengths can be optional)	
Typical Output Power(dBm)	-5	
Output Stability	≤0.1	
Modulation Frequencies(Hz)	CW,270, 1K, 2K	
General Specifications of Multi Meter		
Power Supply	3 pcs 1.5V Alkaline Batteries/Mini USB 5V Adapter	
Battery Operating Time(h)	≥50 (Both Power Meter and Light Source are working) ≥200 (Only Power Meter is working)	
Auto-off time (min)	10	
Communication Port	Mini USB	
Operate Temperature	-10~+60	
Storage Temperature (℃)	-25~+70	
Dimension	240X160X80mm	
Weight (g,without batteries)	675g	

Standard Packages

MODEL	INCLUDES
ST-3209	Multimeter, Mini USB cable, 5V USB Adapter, 3pcs 1.5V Alkaline Batteries, CD, User Manual, Cotton swabs and Soft carrying case.

Features

- * Users could write their own software by the communication protocol provided
- * Automatic wavelength of light source switching
- * Frequency identification.
- * Simple function mode switching
- * High stability of the output power
- * Data storage function, up to 1000 test records
- * USB communication port for saved testing records download
- * Alkaline Battery and Mini USB Adapter for power supply

Applications

- Telecom Maintenance
- CATV Maintenance
- DDN Maintenance
- Fiber Optic lab testing
- Other Fiber Optic Measurements



ST-3210 Economy Optical Multi-meter

ST-3210 is the company high availability, highly cost-effective optical multimeter. It's the integration of power meter and light source, user can operate the two function together or separately, which improves his work efficiency greatly. Moreover, ST-3210 is widely used in the fiber-optic line project construction, testing and maintenance, such as digital data network, telecommunication network and cable television.

Technical Specifications

Instrument model	ST-3210A	ST-3210C
Power meter		
Calibration wavelength(nm)	850, 1300, 1310, 1490, 1550, 1625 (Wavelength is optional)	
Testing range(dBm)	-70~+6	-50~+26
Display resolution(dB)	0.01	
Uncertainty(dB)	≤ ±0.25	
linearity(dB)	≤ ±0.1	
Connector type	FC(Optional)	
Source		
Working wavelength (nm)	1310/1550(±20)(customizable)	
Typical Output Power(dBm)	-5(customizable)	
Stability (dB,30min,20℃)	≤0.1 dB	
Connector type	FC/PC(customizable)	
Modulation frequency (Hz)	CW,270Hz, 1KHz, 2KHz	
Other parts		
Power supply	3*AA 1.5Vbattery / Mini USB 5Vadapter	
Auto-off time (min)	10	
Battery continuous operation time ⁽⁵⁾ (h)	Source ON ≥50, source off ≥200	
Working temperature (℃)	-10~+60	
Storage temperature (℃)	-25~+70	
size(mm)	171×73×26	
weight[g,not including battery]	175	

Features:

- *Great LED display,easy to operate
- *Automatic switching function of the internal source wavelength
- *Detection of the frequency light
- *Power measurement in dBm and mw
- *Wide-range detection zone
- Battery indication

Applications:

- Maintenance of telecommunication project
- CATV project maintenance
- Digital data network project maintenance
- Teaching and research in optical communications
- Other fiber-optic projects



ST-3235 Pocket Optical Multi-meter(VFL)

Specifications

Model	A	C
Wavelength range(nm)* 1	850~1700	
Detector Type	InGaAs	
Power Measurement Range(dBm)* 2	-70~+6	-50~+26
Power Uncertainty(dB) * 3	±0.3	
Calibrated Wavelength(nm)	850,1300,1310,1490,1550,1625	
Display Resolution(dB)	0.05	
red light Output Power(mW)	1 or 10	
transmission distance(km)	5 or 10	
Operating frequency(Hz)	CW/2Hz	
Operating Temperature (°C)	-10~+60	
Storage Temperature (°C)	-25~+70	
Power Saving time (min)	10/no power off	
Optical Connector	FC Only	
Battery Life(h)	≥ 130 (OPM model)	
Power Supply	3 battery of the 7 AAA 1.5V/micro USB power supply	
Weight (g)	70 (no battery)	
Dimensions	128x52x22mm	

Features

- ① High accuracy, low error, large dynamic range
- ② Mini ergonomic design, one-hand operation, flexible and convenient
- ③ OLED high-definition screen
- ④ Universal interface, support FC/SC/ST
- ⑤ Wavelength memory function
- ⑥ Micro-USB Power Supply
- ⑦ Support automatic shutdown and energy conservation
- ⑧ Six calibration wavelengths
- ⑨ Support hang by rope and anti-lost
- ⑩ dBm, dB and mW switching

Application

- ① Fiber-optic CATV projects
- ② Fiber-optic communication projects
- ③ Fiber Optical Sensors research
- ④ Optical device manufacturing

Explanation :

- ① Wavelength range :
A standard working wavelength λ is defined from λ_{min} to λ_{max} , and the light power meter designed in this wavelength range can work under specified parameters.
- ② Power Measurement Range :
The range of maximum light power can be measured according to the specified index
- ③ Power Uncertainty :
The error between the test result of a certain light power and the standard optical power test



ST-3116 Handheld Adjustable Light Source

ST-3116 Handheld Adjustable Light Source is SUNMA newly designed fiber optic tester. It aims at fiber network installation, fiber network engineering acceptance and fiber network maintenance. Combined usage with ST-3216 handheld optical power meter, it offers a quick and accurate testing solution on both SM and MM fibers. The ST-3116 provides 1 to 4 wavelengths and output power can be adjustable on customer requests. Also the ST-3116 features good appearance, good touch feeling and considerate humanity design.

Specifications

Model	ST-3116
Operating wavelength (nm)	1310/1550;1310/1490/1550/1625 (others specify on requests)
Applicable fiber	SM, MM
Laser type	FP-LD(others specify on requests)
Output Power (dBm)	-7 (can be adjustable)
Adjustable step size (dBm)	<0.5
Stability(dB, 30min, 20°C)	0.15
Modulation (Hz)	CW, 270, 330, 1K, 2K
Fiber Port	FC/PC
Alkaline Battery	3*AA, 1.5V
Power Supply Adaptor(V)	8.4
Battery Operating time(h)	45
Operation Temperature(°C)	-10~+60
Storage Temperature(°C)	-25~+70
Outline size (mm) /weight	180*90*45(250g)

Features

- Wave ID information can be transmitted when used with ST-3216 Optical Power
- Meter, Tone generation, 270HZ, 330HZ, 1KHZ, 2KHZ Output
- Output power can be adjustable Output power value is shown on LCD display
- Intelligent backlight control (light intensity can be adjusted properly according to ambient light, which greatly reduced power consumption)
- AA alkaline and AC adaptor for power supply
- Low battery indication

Standard Package

MODEL	INCLUDES
All ST-3116 Models	ST-3116 Optical Light Source, 3pcs 1.5V batteries, AC Adaptor, User Manual, Cotton swabs and Soft carrying case.



ST-3111 Optic Light Source

It is a handheld optical light source, newly released in 2007. It can provide 1 to 6 wavelengths output to satisfy specific requirements including the 650nm visible light source and the 1310/1550nm wavelengths for single mode fiber or the 850/1300nm wavelengths for multimode fiber, as well as other wavelengths according to customer's needs. Together with the ST-3211 optical power meter, it is a perfect solution for fiber optic network applications.

Specifications

Type	ST-3111
Wavelengths(nm)	Provides 1-6 Wavelengths according to needs.
Emitter Type	FP-LD,LED
Typical Output Power(dBm)	0-650nm / -7 -1310nm,1550nm, -20dBm for LED
Spectral Width(nm)	≤10
Output Stability	±0.05dB/15mins; ±0.1dB/ 8hours
Modulation Frequencies	CW,270Hz -650nm / CW,270Hz, 1KHz,2KHz 1310nm,1550nm
Optical Connector	FC/PC(Other type adapters can be required)
Power Supply	Alkaline Battery(3 AA 1.5V batteries); AC Adaptor(9V)
Battery Operating Time(hour)	45
Operating Temperature(°C)	-10- +60
Storage Temperature(°C)	-25- +70
Dimension(mm)	190X100X50
Weight(g)	370

SUNMA Recommendation

ST-3111 Handheld Light Source is designed for optimal use with ST-3211 Optical Power Meter for measuring optical loss on both single mode and multimode fiber cable.

Standard Package

MODEL	INCLUDES
All ST-3111 Models	ST-3111 Optical Light Source, 3pcs 1.5V batteries, AC Adaptor, Instruction Manual, Cotton Tampon and Soft carrying case.

Features

- Provides 1-6 wavelengths output which can be optional according to customers' needs
- CW, 2Hz modulation output at 650nm, and CW, 270Hz,1KHz, 2KHz modulation output at other wavelengths.
- High stability of the output power
- Stable output wavelength
- Backlight LCD display supports night operation
- Low battery power indication

Applications

- Maintenance in Telecom
- Maintenance CATV
- Test Lab of optical fibers
- Other Fiber Optic Measurements



ST-3110 Mini Laser light source

Is the most rugged small size instrument in the industry. It integrates super small size and strong function in one unit. With 3 pieces of 1.5V alkaline batteries, it can work continuously for more than 40 hours. The total weight is only 110g. Together with the ST-3205 Mini optical power meter, it provides an excellent solution for fiber optic network and for field work.

Specifications

Type	ST-3110
Wavelengths(nm)	1310 or 1550
Emitter Type	FP-LD
Output Power(dBm)	-7~-6
Spectral Width(nm)	≤10
Output Stability	±0.05dB/15mins; ±0.1dB/ 8hours
Optical Connector	FC/PC
Power Supply	3pcs 1.5V alkaline batteries
Battery operating time(hour)	40
Operating Temperature(°C)	-10- +60
Storage Temperature(°C)	-25- +70
Dimension(mm)	115X60X20
Weight (g)	110

SUNMA Recommendation

ST-3110 Handheld Light Source is designed for mini portfolio with ST-3205 Optical Power Meter for measuring optical loss on both single mode and multi mode fiber cable.

Standard Packages

MODEL	INCLUDES
All ST-3110 Models	ST-3110 Optical Light Source, Alkaline battery, Instruction Manual, Cotton Tampon and Protective Holster.

Features

- High stability of the output power
- Economic type, easy to use
- Matched with the ST-3205 mini power meter, it constitutes the smallest optical loss test kit, perfect for field testing

Applications

- Maintenance in Telecom
- Maintenance CATV
- Test Lab of optical fibers
- Other Fiber Optic Measurements



ST-3109 Optic Light Source

ST-3109 optical light source can provide 1 to 4 output wavelengths to meet specific requirements, including the 650nm red source and the 1310/1550nm wavelengths for single mode fiber or the 850/1300nm wavelengths for multimode fiber, as well as other wavelengths according to customer needs. Together with the ST-3208 optical power meter, it is a perfect solution for the fiber optic network characterization.

Specifications

Type	ST-3109			
Wavelengths(nm)	650	1310/1550	850/1300	850/1300/ 1310/1550
Emitter Type	FP-LD, LED or others please specify			
Typical Output Power (dBm)	0	-7dBm for LD, -20dBm for LED		
Spectral Width(nm)	≤ 10			
Output Stability	±0.05dB/15mins; ±0.1dB/ 8hours			
Modulation Frequencies	CW, 2Hz	CW, 270Hz, 1KHz, 2KHz		
Optical Connector	FC/ universal adaptor	FC/PC		
Power Supply	Alkaline Battery(3 AA 1.5V batteries)			
Battery Operating Time(hour)	45			
Operating Temperature(°C)	-10~ +60			
Storage Temperature(°C)	-25~ +70			
Dimension(mm)	175x82x33			
Weight (g)	295			
SUNMA Recommendation				
ST-3109 Handheld Light Source is designed for optimal use with ST-3208 Optical Power Meter for measuring optical loss on both single mode and multimode fiber cable.				

Standard Packages

MODEL	INCLUDES
All ST-3109 Models	ST-3109 Optical Light Source, Protective Rubber Boot, 3pcs 1.5V batteries, Instruction Manual, Cotton Tampon and Soft carrying case.

Features

- Provides 1 ~4 output wavelengths which can be optional according to customer's needs
- CW, 2Hz modulation output at 650nm, and CW, 270Hz, 1KHz, 2KHz modulation output at other wavelengths.
- High stability of the output power
- Stable output wavelength
- Backlight LCD display supports night operation
- Compact size and decent appearance
- Large LCD, easy operation

Applications

- Maintenance in Telecom
- Maintenance CATV
- Test Lab of optical fibers
- Other Fiber Optic Measurements



ST-8001 Desk-top Stabilized Laser Source

Features

1. High output power stability: up to 0.005dB;
2. Adjustable Output Power ;
3. Good wavelength stability;
4. High Precision APC and ATC Circuits;
5. LCD status display full Parameter;
6. Optional CWDM or DWDM or any other wavelength;
7. Built-in 1 / 4 wavelengths and optional 4 ports

Specifications

Supported Channel	1/2/3/4
Maximum Output Power (mW)	2/5/10/*
Output power stability (dB)	±0.005 (15min/10mW)
	±0.005 (8Hour/10mW)
Dimension (mm)	235x380x140

ST-8002 Stabilized Laser Source

ST-8002 Bench-top stabilized laser source is a new instrument with high output stability and good wavelength stability, which is developed by SUNMA using automatic optical power control (APC) technology and automatic temperature control (ATC) technology. ST-8002 is an ideal instrument for measuring optical device characteristics, device aging, monitoring, experiment, etc. ST-8002 is simple in application and design, easy to use and maintain. Widely used in optical communication, optical transmission, optical fiber sensing and other fields of scientific research, production and engineering.

Features

- High output power stability: up to 0.01dB
- One-button startup
- Good wavelength stability
- High Precision APC and ATC Circuits
- Wavelength can be customized
- Support for 1-4 wavelength output
- Low Influence Return Loss



ST-8006 Series SLED Optical Source



Application

1. Optical Fiber Sensor
2. Optical Fiber Gyroscope
3. Defense and Military Affairs Research
4. Scientific Research and Teaching

Description

SLED(Super luminescent light-emitting diode) is a super broadband optical source which is designed for fiber sensor; optical fiber gyroscope, lab application field. It has the feature as broaden bandwidth, customizable center wave length, high output power, etc. Benchtop (for lab), standard module(150*125*20mm, with modulation function) and mini module(90*70*15mm) is available. The key component is employed the FWHM bandwidth up to 40nm high power

SLEDs to ensure the spectrum performance. Stability is ensured by unique ATC and APC circuit. The output power is adjustable by RS232 or RS485 port. Comparing to ASE broadband optical source, it is more flexible wavelength optional and wider wavelength which can cover from 600nm~1700nm random wavelength. Standard product integrated 1~4 SLEDs randomly, with uniquely SLED software to design spectrum. High and low polarization is optional.

Feature

- Module, Benchtop, 1U Rack is available
- High output power: Up to 20mW
- Broad operations waveband: 600nm~1700nm is available
- Excellent flatness in spectrum range
- Uniquely designed with several SLEDs
- High stability and reliability
- High precise ATC and APC control circuit
- LCD display



Features

- Easy-to-use with "ONE KEY" operation.
- Efficiently identifies the traffic direction and frequency tone (270Hz, 1KHz, 2KHz) with audible warning.
- Displays the relative core power
- More accurate test with Sunshade
- Easy-to-replace adaptors
- Durable metal housing and quality construction
- Lower power indication

Applications

- Maintenance in Telecom
- Maintenance CATV
- Test Lab of optical fibers
- Other Fiber Optic Measurements

ST-3306B Optical Fiber Identifier

It can quickly identify the direction of transmitted fiber and display the relative core power without any damages to the bended fiber. When the traffic is present, the intermittently audible tone is activated.

The ST-3306B optical fiber identifier also recognize the modulation like, 270Hz, 1kHz and 2kHz. When they are used to detect the frequency, the continuously audible tone is activated. There are four adapter heads available: Ø0.25, Ø0.9, Ø2.0 and Ø3.0. The JW3306A optical fiber identifier is powered by a 9V alkaline battery.

Specifications

Type	ST-3306B	
Identified Wavelength Range	800-1700 nm	
Identified Signal Type	CW, 270Hz±5%, 1kHz±5%, 2kHz±5%	
Detector Type	Ø1 mm InGaAs 2pcs	
Adapter Type	Ø0.25 (Applicable for Bare Fiber)	
	Ø0.9 (Applicable for Ø0.9 Cable)	
	Ø2.0 (Applicable for Ø2.0 Cable)	
	Ø3.0 (Applicable for Ø3.0 Cable)	
Signal Direction	Left & Right LED	
Single Direction Test Range (dBm, CW/0.9mm bare fiber)	-46~ -10(1310nm)	
	-50~ -10(1550nm)	
Signal Power Test Range (dBm, CW/0.9mm bare fiber)	-50~ +10	
Signal Frequency Display (Hz)	270, 1k, 2k	
Frequency Test Range(dBm, Average Value)	Ø0.9, Ø2.0, Ø3.0	-30~-0 (270Hz, 1KHz)
		-25~-0 (2KHz)
	Ø0.25	-25~-0 (1KHz, 2KHz)
		-20~-0 (2KHz)
Insertion Loss(dB, Typical Value) Alkaline Battery(V)	0.8 (1310nm)	
	2.5 (1550nm)	
Operating	9	
Temperature(°C)	-10~ +60	
Storage Temperature(°C)	-25~ +70	
Dimension (mm)	196X30.5X27	
Weight (g)	200	

Standard Packages

MODEL	INCLUDES
ST-3306B	ST-3306B Optical Fiber Identifier, 4pcs adapter heads, Sunshade, Alkaline battery, User Manual, Cotton Stick and Soft Carrying case.



ST-3306D Optical Fiber Identifier

Is an essential installation and maintenance instrument. By inserting the fiber into its adapter head, it can identify SM optical fibers without any damage by detecting the optical signals being transmitted through them so as to avoid the opening of the fiber at the splice point for identification and thus avoids the interruption of the service. In the presence of traffic, the intermittently audible tone is activated. The ST-3306A optical fiber identifier also allows relative core power display and identification of the 270Hz, 1kHz and 2kHz frequencies. When they are used to detect the frequency, the continuously audible tone is activated. There are four types of adapter heads available: Ø0.25, Ø0.9, Ø2.0 and Ø3.0. The ST-3306A optical fiber identifier is powered by a 9V alkaline battery.

Features

- Efficiently identifies the traffic direction and frequency tone (270Hz, 1KHz, 2KHz) without any damage of the fibers.
- Displays the core power of the fibers (-50~+0dBm)
- Low bending loss and highly efficient output
- Easy-to-replace adaptors (Ø0.25, Ø0.9, Ø2.0, Ø3.0 to match various optical cables)
- Mechanical damp design of adapter heads to ensure the fiber without damage.
- "ONE KEY" operation design, easy-to-use

Applications

- Maintenance in Telecom
- Maintenance CATV
- Test Lab of optical fibers
- Other Fiber Optic Measurements

Specifications

Type	ST-3306D
Identified Wavelength Range	800-1700 nm
Identified Signal Type	CW, 270Hz±5%, 1kHz±5%, 2kHz±5%
Detector Type	Ø1mm InGaAs 2pcs
Adapter Type	Ø0.25 (Applicable for Bare Fiber) Ø0.9 (Applicable for Ø0.9 Cable) Ø2.0 (Applicable for Ø2.0 Cable) Ø3.0 (Applicable for Ø3.0 Cable)
Signal Direction	Left & Right LED
Optical Power Reading	-50~+0dBm
Signal Frequency	270Hz, 1kHz, 2kHz
Power Supply	One 9V Alkaline battery
Operating Temperature	-10~+60°C
Storage Temperature	-25~+70°C
Dimension (mm)	195X30X27
Weight (g)	235

Standard Packages

MODEL	INCLUDES
ST-3306D	ST-3306D Optical Fiber Identifier, 4pcs adapter heads, Alkaline battery, Instruction Manual, Cotton Tampon and Soft Carrying case.



ST-3306C/CT Optical Fiber Identifier

ST-3306C Optical Fiber Identifier is an important tool for optical maintenance, which is used for nondestructive fiber identification work, can be detect in any location of both SM and MM fiber. Meanwhile when you combined with ST-3306CT Optical Signal Generator, which can realize low-frequency signal online injection, and also realize to find a particular fiber online without modulation signal in optical fiber signal. This tester is designed for machine room complex optical patch cords provides a good solution.

Features:

- Low-frequency signal online injection
- Do not interfere with the online optical fiber
- Support a variety of optical fiber diameter
- Identify the signal automatically

Applications:

- Maintenance in Telecom
- Maintenance CATV
- Premise Distribution System
- Machine room cable maintenance
- Equipped for scientific, laboratory, teaching instrument, etc

Standard Packages:

MODEL	INCLUDES
ST-3306C/CT	ST-3306C/CT Optical Fiber Identifier; Alkaline battery, User Manual, Soft Carrying case

Specifications

Type	ST-3306C	
Identified Wavelength Range	800~1700nm	
Detector Type	InGaAs	
Adapter Type	Ø0.25 (Applicable for Bare Fiber); Ø0.9 (Applicable for Ø0.9 Cable); Ø2.0 (Applicable for Ø2.0 Cable); Ø3.0 (Applicable for Ø3.0 Cable)	
Identified Signal Type(Hz)	CW,270,1K,2K	
Signal Direction	Left & Right LED	
Signal Direction Test Range (dBm, CW/3mm bare fiber)	-20~+10 (1310nm) -30~+10 (1550nm)	
Signal Power Test Range (dBm, CW/3mm bare fiber)	-30~+10	
Signal Frequency Display (Hz)	270, 1K, 2K	
Frequency Test Range (dBm, Average Value)	Ø0.9, Ø2.0	-30~0
	Ø0.9, Ø2.0	-25~0
	Ø3.0	270Hz, 1KHz
	Ø3.0	2KHz
Frequency Test Range (dBm, Average Value)	0.8 (1310nm)	
	2.5 (1550nm)	
battery electric power display	Power double color LED	
Weight (without batteries)	<210g	
ST-3306CT		
Signal types	1Hz low-frequency signal	
Signal mode	Mechanical vibration	
Insertion Loss	<1dB (1310nm)	
Fiber Type	G657A1, G657A2, G655, G652D	
fiber diameterØ.9/2/3	Weight (without batteries)<230g	
Other		
Alkaline Battery(V)	9V	
Operating Temperature(C)	0~+50	
Storage Temperature(C)	-10~+70	
Dimension (mm)	209X33X31	



ST-3305A New Fiber Ranger(Mini OTDR)

Mini OTDR is the most portable test instrument in the industry. It adopts the OTDR technical principles and integrates the powerful analysis software, which enables the ST-3304N fiber ranger detect fiber faults location more accurate and easy.

Applications

Testing the distance of the fiber and identify the faults location in the fiber link. Locates reflective and non-reflective breaks in the fiber network.
Inspection of fiber repair and maintenance.

ST-3305A Fiber Ranger is ideal to be used in FTTx network installation and maintenance.

Specifications

Model		ST-3305A
Operating Wavelength		1550nm (1310nm Optional)
Fiber Type		9/125um SM Fiber
Optical Connector Type		FC/PC
Detector Type		InGaAs
Peak Power of laser		≥60mW
Max. Displaying Distance	Reflection Event	60km (≥1dB)
	Non-reflection Event	20km (≥2.5dB)
Measurement Unit		m
Reflection Event Dead Zone		15m
Distance Accuracy (Reflection Event)		±(2m+2*10 ⁻⁴ *Distance)
Wavelength of VFL Option		650nm
Output Power of VFL Option		≥1mW
Power Supply		Alkaline Battery (3pcs AA 4.5V Batteries)
Battery Operating Time		≥5000 measurements
Working Temperature		-5~40℃
Storage Temperature		-10~60℃
Humidity		0~85% (Non-condensation)
Dimensions		190*100*50mm
Weight(g)		450

Standard Packages

MODEL	INCLUDES
ST-3305A	ST-3305A Fiber Ranger, 3pcs 1.5V batteries, User Manual, Cotton swabs and Soft carrying case.

Main Features

- *Portable, rugged, lightweight; Easy to use.
- *More accurate testing results and better repeatability.
- *Automatic Pulse Width Control design to ensure a convenient operation.
- *Easy to identify the faults location.
- *Built-in visual fault locator (VFL), conveniently to find the faults in dead zone.
- *Dust, water and shock proof, designed for field use
- *Long battery life, up to 5000 measurements operation.
- *2.6 inch screen, data saves in SOR format.



ST-3304N Fiber Cable Fault Locator

ST-3304N Optical Fiber Ranger is the most portable test instrument in the industry. It adopts the OTDR technical principles and integrates the powerful analysis software, which enables the ST-3304N fiber ranger detect fiber faults location more accurate and easy.

ST-3304N Fiber Ranger is ideal to be used in FTTx network installation and maintenance.

Specifications

Model		ST-3304N
Operating Wavelength		1550nm (1310nm Optional)
Fiber Type		9/125um SM Fiber
Optical Connector Type		FC/PC
Detector Type		InGaAs
Peak Power of laser		≥60mW
Max. Displaying Distance	Reflection Event	60km (≥1dB)
	Non-reflection Event	20km (≥2.5dB)
Measurement Unit		m
Reflection Event Dead Zone		15m
Distance Accuracy (Reflection Event)		±(2m+2*10 ⁻⁴ *Distance)
Wavelength of VFL Option		650nm
Output Power of VFL Option		≥1mW
Power Supply		Alkaline Battery (3pcs AA 4.5V Batteries)
Battery Operating Time		≥5000 measurements
Working Temperature		-5~40℃
Storage Temperature		-10~60℃
Humidity		0~85% (Non-condensation)
Dimensions		190*100*50mm
Weight (g)		450

Main Features

- Portable, rugged, lightweight; Easy to use.
- More accurate testing results and better repeatability.
- Up to 8 fiber faults can be detected in each measurement.
- Automatic Pulse Width Control design to ensure a convenient operation.
- Easy to identify the faults location.
- Built-in visual fault locator (VFL), conveniently to find the faults in dead zone.
- Dust, water and shock proof, designed for field use
- Long battery life, up to 5000 measurements operation.

Applications

- Testing the distance of the fiber and identify the faults location in the fiber link.
- Locates reflective and non-reflective breaks in the fiber network.
- Inspection of fiber repair and maintenance.

Standard Packages

MODEL	INCLUDES
ST-3304N	ST-3304N Fiber Ranger, 3pcs 1.5V batteries, User Manual, Cotton swabs and Soft carrying case.



ST-3105P/A Pen-type VFL

The ST-3105 Pen-type VFL is specially designed for field personnel who need an efficient and economical tool for fiber tracing, fiber routing and continuity checking in optical network. It includes:

- Finding the breakpoint, poor connections, bending or cracking in fiber optic cables.
- Finding the faults of OTDR dead zone
- End-to-end visual fiber identification

Specifications

Type	ST-3105 Pen-type Visual Fault Finder
Central Wavelength	650nm ± 10nm
Wavelength	(635nm can be required on request)
Emitter Type	FP-LD
Output Power	Optional choice for 1mw, 3mw, 5mw, 10mw on actual needs
Optical Connector	2.5mm universal connector For 1.25mm connectors, FC (Male)-LC (Female) converter can be optional on customer requests
Operating Model	Both CW and Pulse available
Pulse Frequency	2~3Hz
Power Supply	2 AA alkaline batteries
Battery Operating Time	650nm@1mw ≥65hour 650nm@3mw ≥50hour 650nm@10mw ≥15hour Test with Panasonic LR6 AA ALKALINE battery
Operating Temperature	-10~ +45 (°C)
Storage Temperature	-40~ +70 (°C)
Dimension (mm)	∅15X180
Weight	120g(Without battery)

Remark: Colors can be customized on request when meets certain qty!

Standard Packages

MODEL	INCLUDES
ST-3105P	Main Unit (Original color), 2pcs Alkaline battery, User Manual, Cotton swabs and Soft Carrying case.

Features

- 2.5mm universal connector, for 1.25mm connectors.
- FC (Male)-LC (Female) converter can be provided on requests.
- Operates either in CW or Pulsed
- Constant output power
- Lower Battery warning
- Long battery life (up to 60 hours)
- Crash-proof and dust-proof design for laser head
- Laser case ground design prevents ESD damage
- Burning testing to ensure the reliability.
- Portable and rugged, easy to use
- Guarantee to CE standards include EMC, EMI, ROHS



ST-3105N Visual Fault Locator

Features

- * Constant & stable output power
- * Special laser driver circuit design, to make sure the laser output power remains a constant power level as long as in an available battery voltage.
- * Low battery warning, reminds users to change the battery timely.
- * Long battery life(up to 40 hours with AAA batteries)
- * Operates either in CW or Pulsed
- * Pocket size and light weight, easy to use

Specification

Type	ST-3105N Economical VFL
Central Wavelength	650nm ± 10nm
Emitter Type	FP-LD
Output Power	1mw or 10mw
Optical Connector	FC/2.5mm universal connector For 1.25mm connectors, FC (Male)-LC (Female) converter can be optional on customer requests
Operating Model	Both CW and Pulse(2Hz) available
Power Supply	Two AAA alkaline batteries
Battery Operating Time	40hoursTest with Panasonic LR6 AAA ALKALINE battery
Operating Temperature	-10~ +60 (°C)
Storage Temperature	-25~ +70 (°C)
Dimension (mm)	100*30*18
Weight	37g

Applications

- Maintenance in Telecom
- Maintenance CATV
- Fiber Optic Lab Testing
- Other Fiber Optic Measurements



ST-6120 TDR Cable Fault Locator

new portable TDR cable fault locator ST-6120, which is designed for ease of use. You'll spend less time operating the TDR and more time repairing faults.

Specifications

Max range	8 km
Highest resolution	1m
Dead Zone	0 m
Power consumption	1W
Weight(kg)	0.42kg
Dimension (mm)	200×90×43mm3
Working temperature	-15°C ~+45°C
Storage temperature	-20°C ~+55°C
USB storage (optional)	transmit wave form to U disk, and analyze the wave form on computer

Supplied complete with

- 1) Carry case.
- 2) Re-chargeable battery and charger/adaptor.
- 3) Test Line
- 4) User Manual
- 5) CD(Just for USB function)
- 6) U-disk(Just for USB function)

Features

1. No test dead zone
2. Fast test speed and accurate test distance
3. Portable and easy to carry
4. Large colorful LCD display;
5. humanized operation interface; six function keys can do all the tests.
6. High-energy Li battery, continuous work 10 hours



ST-336 Pipeline & Cable Locator

The ST-336 Pipeline & Cable Locator is designed for the underground utilities route locating, the depth measuring and distance tracing.

The multi-coil electromagnetism technology is adopted to enhance the capability of pipeline/cable locating, depth measurement and recognition. A distance trace of the pipeline/cable can be recorded to spot the pipeline/cable from the crowded complex. It is widely used in the telecommunication, electric, tap water, natural gas and physical prospecting.

Transmitter

Technical specification of Transmitter:

Signal frequency	
Router and depth mode	480Hz, 30.72 KHz
Induct mode	30.72 KHz
Output Pressure	0-500 VP-P automatic/manual adjustment due to the insulated instance
Output wave shape	sine wave
Power source	12 VDC 4.5 AH in the Ni-MH cell
Peak output power	10W
Inductive clamp	30.72 KHz

Receiver

Technical specification of Receiver:

Power loss	<1W
Power source	12VDC 1.5AH in the Ni-MH cell or 10 alkaline/battery batteries
Biggest test burying depth	4.5 meters(normal instance)
The best burying depth error	≤0.05h±5cm("h" is pipeline depth)
The test route error	≤5cm(normal condition)
The test insulated error	≤25M Ω
Test the route and the efficient depth with Inject method ≥20Km(normal instance)	
Test the route and the efficient depth with Induct method ≥3Km(normal instance)	

Note:

The objective pipeline has no insulated failure or other interruption in the above-mentioned range in the normal instances.

ST-8307 No-Wrapping Insertion Loss & Return Loss Test Station



Features

- 1.Real no-mandrel RL test, no matching gel;
- 2.Automatic IL&RL test;
- 3.Concurrent dual wavelength IL and RL Display;
- 4.Provides different working modes as OPM, IL, RL, ILRL, IL2, ILRL2;
- 5.High-precision optical power meter mode, wide measurement range (up to +5dBm~-75dBm) ;
- 6.USB and RS-232 interface to satisfy different needs;
7. Abundant threshold settings and warning function;
- 8.Integrating sphere configuration is available in OPM section ;
9. Powerful optical device applications;

Specifications

OPM detection range	+5dBm ---- -85dBm
Linearity	$\pm 0.04\text{dB}$ (+5 --- -55dBm) $\pm 0.08\text{dB}$ (-55 --- -65dBm) $\pm 0.2\text{dB}$ (-65 --- -75dBm)
Wavelength	SM 1310/1550/ MM 850/1300
Light Source Stability	0.01dB/15min 0.03dB/8hour
Dimension (mm)	235x380x96

ST-3327 Insertion Loss & Return Loss Tester



Features

- 1)Built-in high stability light source
- 2)Large size color screen display
- 3)Threshold setting configuration;
- 4)Dual wavelength IL/RL simultaneous testing
- 5)Multiple COM interface compatible application
- 6)Add 850 wavelength to detect multimode Patch cord loss
- 7)Built-in VFL function can easy to find the other end of the patch cord to increase test speed

Specifications

Test wavelength	1310/1550
Measurement range (dBm)	+3dBm---- -75dBm
Output Stability (dB)	$\pm 0.005\text{dBm}$
Output Power(dBm)	> -5
Display Screen	3.5-inch TFT color screen
Dimensions (mm)	280x260x120



ST-3317 Insertion Loss & Return Loss Tester

Specifications

Electrical characteristics:	
AC power supply	220VAC 50~60HZ@100mA Max.
Operating temperature	10℃ - 40℃
Storage temperature	-5℃ ~60℃

Optical Performance:

Wavelength (nm)		1310/1490/1550/ 850 /650
Laser Source	Laser Type	F-P
	stability(dB)	0.03
Insertion Loss	Input range (dBm)	+3 ~ -75
	Test Uncertainty (dB)	0.03 (0~ -60dBm) 0.3 (-60~-75dBm)
	Interface	FC/SC /LC /Universe interface
Return Loss	Detect Range(dB)	0~75
	Test Accuracy(dB)	0.25
	Output interface	FC/APC
Control interface		RS232/ GPIB
Power Supply		110VAC/220VAC 50HZ
Storage temperature (℃)		-25 - +70
Weight (kg)		3
Dimension(mm)		265*260*120

Features:

built in 1310nm ,1490nm and 1550 nm lasers
850nm Output 50/125um for Multimode test ,Optional 650nm VFL 10mW;
built-in high precision with low power loss tests architecture, detection range up to 80dB;
dynamic adjustable LCD refresh rate, digital fonts are displayed;
built-in optical power meter, synchronous wavelength switching;
small-signal measurements (1nW input), accuracy up to 0.1dB;
serial R232 control provides serial commands, and automatically stored data;



ST-3308A Handheld IL/RL Test Meter

ST-3308 handheld return loss tester is used to measure the return loss in the field fiber optic linking, in order to adjust the quality of the optic fiber end-face, and to make sure the fiber optic communication is in good condition. This 3308 handheld return loss tester can realize measurement of Return Loss, Insertion Loss, Output power, and also can be used as the laser source. Moreover, it has the data storage function of 500 measurement items.

Technical Specification

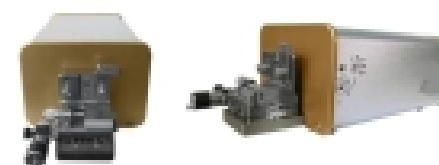
Model	Handheld Return Loss Tester 3308
Return Loss Testing	
Wavelength(nm)	1310/1550
Plus Width(nm)	<5
Displaying range(dB)	-70~+0
Accuracy(dB)	±0.5
Optical Connector	FC/APC
Resolution(dB)	0.01
Power Meter	
Wavelength(nm)	800~1700
Calibrated wavelength(nm)	850,1300,1310,1490,1550,1625
Connatural uncertainty(dB)	±0.25
Displaying Range(dBm)	-70~+6
Communication Port	USB
Alkaline battery	3*AA,1.5V
Display	LCD
Operation Temperature(°C)	-10~+60
Storage Temperature(°C)	-25~+70
G.W.	380G
Packing sizes	180mm(L)*90mm(W)*36.5mm(H)

Function

1. A variety of functional test pattern (RL,IL,OPM,OLS)
2. The test data uploading is stored.
3. Support USB power supply function.
4. Interface simple, easy to operate.



SunmaFiber-ML Manual Focus Fiber Connector Optical Interferometer



SunmaFiber-AT Auto Focus Fiber Connector Optical Interferometer



SUNMA-ML/AT Fiber Interferometer

SunmaFiber-ML and SunmaFiber-AT Fiber Connector Optical Interferometer is a high precision instrument developed and manufactured by Wuhan Sunma Technology Co., Ltd. to measure the end face geometry of optical fiber connectors. It is used to measure standard fiber optic connectors such as SC/PC, SC/APC, FC/PC, FC/APC, ST, LC/PC, LC/APC, MU/PC connectors with diameter of 1.25mm or 2.5mm. Output parameters include Radius of Curvature (ROC), Fiber Height, Apex Offset, APC Angle and Key Angle, etc., which help to improve the end face polishing of fiber optic connectors, and lead to perfect transmission.

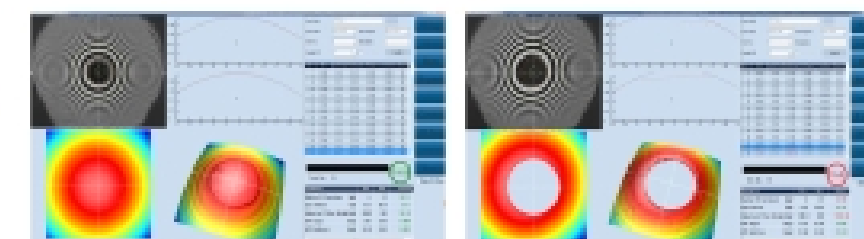
Specification:

Measure Item	Measurement Range	Repeatability	Reproducibility
ROC (mm)	3~∞	±0.03	±0.05
Fiber Height (nm)	-160~160	±2.0	±3.0
Apex-Offset (um)	0~500	±1.0	±2.0
APC Angle (deg)	7~9*	±0.01	±0.02
APC Key Angle (deg)		±1	±0.02 ±0.03

Key Features and Benefits:

1. Test result maintains a high degree of consistency to all other brand equipment.
2. Fast response of measurement in 0.5 second.
3. Precise data processing, with high accuracy measurement results.
4. Novel robust algorithm, accurate results even with contaminated ferrule surface
5. High-precision and long life fiber clamp.
6. Automatically generate three-dimensional map, fitting map which directly reflect the details of the optical fiber connector;
7. Automatically generate test reports and test data in Excel format, which is easy to manage and print;

Software Interface In 3D Mode Concentricity test: And Interferogram Mode:





ST-3318 PON Termination Identifier

With the development of FTTH, the cost of investment is getting higher and higher in maintaining huge network. In the last mile of optical network, the operators need to know the situation of optical port occupied by idle resources to reduce the waste of resources. However, the artificial methods is extremely complicated and inefficient, and may cause great trouble and complaints. To solve the problem, we invented ST-3318 PON terminal tester with its own independent invention patent. The tester can check the terminal state of optical network resources and analyze the ONT and OLT state in PON network without maintenance personnel being into the user's home. At the same time, ST-3318 PON terminal tester can integrate full-function PON power meter, visual fault locator, return loss tester, standard optical power meter, standard light source and some other modules. It is a versatile helper in current PON network maintenance and terminal resources inventory field.

Features

- * The independent invention patent will be used in the analysis and investigation of PON network terminal;
- * Checking the occupation and idle condition of optical network terminal resources;
- * Judging whether the fiber optic modem is no power, the fiber falls off or the fiber is not connected with fiber optic modem intelligently.
- * Supporting return loss testing, qualitative judgment of optical path, installation quality of optical connector to make sure highspeed optical communication;
- * Fully support the PON optical power meter function;
- * Supporting 1310nm and 1550nm stable light output mode;
- * Supporting standard optical power meter mode;
- * Supporting visual fault location mode;

Applications

- Maintenance in Telecom
- Maintenance CATV
- Fiber Optic Lab Testing
- Other Fiber Optic Measurements

ST-3318 PON Terminal Tester can judge 7 state of ONT, OLT intelligently

1) Terminal is Online
The LED display device shows that the connection between OLT, the terminal tester and ONT is green, the color of the word "Online" in the LED display devices is green.

2) Fiber Breaking
The LED display device shows that the connection line between OLT and the terminal tester is red. The connection line between the terminal tester and OLT is gray. The color of the word "Break" on the screen is red.

3) ONT Fatal
The LED display device shows that the connection line between OLT and the terminal tester is gray. The connection line between the terminal tester and ONT is green. The color of the word "ONT Fatal" in the LED display screen is red. It means that something is wrong with the optic modem in ONT end and need to be repaired. The optic modem shows in red.

4) ONT BAD
The LED display device shows that the connection line between OLT and the terminal tester is green. The connection line between the terminal tester and ONT is yellow. The color of the word "ONT BAD" in the LED display screen is yellow.

5) Cut
The LED display device shows that the connection line between OLT and the terminal tester is green. The connection line between the terminal tester and ONT breaks and in the color of orange. The word "Cut" in the LED display screen is red.

6) No Power
The LED display device shows that the connection line between OLT and the terminal tester is green. The connection line between the terminal tester and ONT is green. The word "No Power" in the LED display screen is red. The optic modem shows in red.

7) Fall off
The LED display device shows that the connection line between OLT and the terminal tester is green. The connection line between the terminal tester and ONT breaks and shows in red. The word "Fall Off" in the LED display screen is red.

Specifications

PON Terminal Module	
PON Terminal State	Online, Break, ONT Fatal, ONT BAD, No Power, Fall off
Insertion loss(dB)	≤1.5
Optical port	(FC/SC/ST)PC
PON power meter module	1310 upstream 1490 downstream 1550 downstream
Detection range(dBm)	+10~-35
OPM uncertainty(dB)	≤0.5
Calibrated wavelength(nm)	1310/1490/1550/1625
Accuracy(dB)	0.01
OPM Module	
Calibrated wavelength(nm)	1310/1490/1550/1625
Detector type	InGaAs
Detection range(dBm)	+6~-70
Uncertainty(dB)	±0.5
VFL Module	
Wavelength(nm)	650±20
Output power(mW)	≥1
OLS Module	
Wavelength(nm)	1310±20 & 1550±20
Output power(dBm)	0~±0.5
Other Index	
Display Screen	TFT colorful screen
Power Supply	Standard configuration: 3 pcs AA 1.5V Alkaline battery Customized: Rechargeable Battery DC 5V adapter
Communication port	Mini USB
Battery operating time(h)	≥10
Operating temperature℃	-5~40
Storage temperature℃	-10~70
Relative humidity	0~95%(No condensation)
Weight (.No battery and protective cover)	423g
Size(mm)	192×102×50



ST-3303 Handheld Optic Variable Attenuator

ST-3303 handheld optical variable attenuator is used for continuously variable optical signal attenuation. As the attenuator is used in the laser system for the on-line testing, therefore, ST-3303 can be used in the digital system of communication devices (such as: PHD, SDH) and also in the system of adopting analog modulation (CATV)

Specifications

Type	ST-3303
Attenuating wavelength Range	1260~1650nm
Fiber Model	9/125um SM
Optical Connector	FC/PC
Calibrated wavelengths	1310/1490/1550/1625nm
Measurement Range	2~60dB
Resolution	0.05dB
Minimize Insertion Loss	<2.0dB
Linearity	±0.5dB
Repeating	±0.2dB
Attenuating Accuracy	±0.8dB
Return Loss at Input/ Output	>35dB (typical value40dB)
Max input	+20dBm
Displaying type	lattice 128*64 black and white, white back ground light
Rechargeable batteries	7.4V
Power supply adaptor	7~8.5V
Operation temperature	0~40℃
Storage temperature	-10~60℃
humidity	0~85% (non-condensation)
Dimensions	210X115X55
Weight	450g

Standard Packages

MODEL	INCLUDES
ST-3303	ST-3303 Main Body, Protective Rubber Boot, Rechargeable battery, Power Supply Adaptor, Instruction Manual and Cotton Swabs and Rigid hard carrying case.

Main Features

- stepwise attenuating by
- circumgyrated dial: attenuating step 0.05dB
- Provide with the function of displaying dB and dBm attenuating value
- 10 minutes Auto-off function can be activate and deactivate with keypad operation.
- After off the instruments, the system will have the memorizing of the attenuating value and the attenuating step, in order to restore the system back to the previous shut down state when open the instruments next time
- Portable, rugged, lightweight; Easy to use.

Applications

- Telecom Maintenance
- CATV Maintenance
- Comprehensive cable construction system
- Optical instruments research and development
- Optical communication education and lab testing
- Other optical project



ST-4103N Optical Talk Set

ST-4103N Optical Talk Set is an intelligent and efficient instrument that combines in one set the functions of both a digital optical phone and a stabilized light source. It is widely used in operations of installation, optical testing, maintenance and fiber attenuation value testing in data network, CATV and Telecommunication network. The 4103N Talk Set can carry out

Specifications

Type	4103N
Wavelength(nm)	1310/1550
Emitter Type	FP-LD
Transmission Distance(KM)	≥100
Dynamic Range(dB)	≥33
Output Power(dB)	-5~-7
Modulation(Hz)	CW,270,1K,2K
Output Stability (dB,30min,20 °C)	≤0.1
Power Supply	3 pcs 1.5V Alkaline Batteries/8.4V Power Supply Adaptor
Battery Operating Time	5 hours
Optical Connector	FC/PC
Operating Temperature(°C)	-10 ~ +60
Storage Temperature(°C)	-25 ~ +70
Dimension(mm)	298X220X85
Weight(g)	980g
Remark: provides Fiber Optic Clipon Coupler device according to customers needs	

Standard Packages

MODEL	INCLUDES
ST-4103N	Optical Talk Set (pair), Headset, 3 pcs 1.5V Alkaline Batteries, 8.4V Power Supply Adaptor, User Manual, Cotton swabs and soft carrying case.

Features

- *Full-duplex digital communication with high quality conversation connection and low background noise
 - *Together with Optical Clip-on Coupler, enables on line communications available
 - * Combining functions of both a digital optical phone call and a stabilized light source.
 - * Large LCD display with backlight
 - * Low battery power indication
- Applications Maintenance in Telecom
Maintenance CATV
Fiber Optic Lab Testing
Other Fiber Optic Measurements