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Fiber Optic Test & Inspection

OTDRs

Optic Power Meters

Optic Loss Test Sets

Light Sources

Cable Fault Locators

Wuhan Sunma Technologies Co., LTD.

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Fiber Optic Test & Inspection

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Overview of SUNMA

"WUHAN SUNMA TECHNOLOGIES CO., LTD.", one of the leading fiber optic product manufacturers in China, specialized in supplying fiber optic equipments, fiber optic test instruments and other data network & telecom products.

"SUNMA TECHNOLOGIES" was founded in 2002 by Mr. Sunder Ma. Our sale and manufacture center is located at Wuhan city, which is the only Fiber Optic Valley of China. The producing department locates at Guanshan District, and our sales office locates at Hongshan District of Wuhan.

Equipped with advanced hi-tech producing and 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 hi-tech products.

Administering the quality standard of CE, UL, 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 are distributing the products of many renowned foreign test and measurement companies including Fujikura, EXFO, Agilent, JDSU, Furukawa, Anritsu, Sumitomo, Dilithium and Spotwave. Till now, our products cover Fiber Optic Telecommunication, Wireless, Datacom, Power, Cable TV measurement 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 of the world

ST-6418 High Performance OTDR

ST-6418 OTDR is a high performance measuring instrument with multifunction designed for testing FTTx network. It's mainly used to measure the physical characteristics of optical fiber under test, such as the length、the transmission loss and the splice loss etc.. It can also locate the faults or breaks of optical fiber. It's widely applied in the manufacture, construction and maintenance in optical fiber communication system.

General Specifications	
Dynamic range	Please refer to "OTDR modules specifications"
Distance uncertainty	$\pm(0.75m + sample\ space + measurement\ distance \times 0.003\%)$ [1]
Sampling resolution	0.05,0.1,0.2,0.5,1,2,4,8,16m
Distance range	0.4,0.8,1.6,3.2,6.4,16,32,64,128,256,512km(SMF)
Pulse width	0.4,0.8,1.6,3.2,6.4,16,32 (MMF of 850nm)
Loss threshold	5,10,30,80,160,320,640,1280,5120,10240,20480ns
Sampling points	5,10,30,80,160,320,640,1280 (MMF of 850nm)
Linearity	0.01dB
Loss resolution	Up to 128k
Memory capacity	0.05dB/dB
Group refractive index setting	0.001dB
Distance unit	≥800traces(build-in), ≥65500traces(2GB SD storage)
Display	640×480, 6.5 inch TFT-LCD (touch screen)
Interface	USB, Min-USB, Ethernet, earphone, SD
Optical connector	FC/SC/ST (universal connector)
VFL	650nm±10nm,2mW(typical);CW/1Hz
Optical Power Meter	Wavelength range: 1270nm to 1700nm Measurement range: -60 to +3dBm Measurement accuracy: 5% (-10dBm, CW)
Power supply	AC adapter 100 to 240V, 50/60Hz, 1.5A DC:19V±2V(2A) Built-in Lithium battery: 4400mAh, operating time ≥8 hours [2]
Language	User selectable: simplified Chinese, English, Russian, Korean etc.. (please contact CETC 41st for others)
Environment	Operating temperature: -10 to 50℃œ℃œ Storage temperature: -40 to 70℃œBattery: -20 to 60℃œ Relative humidity: 5% to 95%, non-condensing
Dimensions	295×186×75(mm)
Weight	2.5kg Approx.

Note1: Does not include uncertainty due to fiber index
Note2: Low brightness, exclude measuring.

ST-6418 high performance OTDR

Features:

- Handheld、lightweight and convenience for carrying
- 45dB high dynamic range
- ≤1m extra-short event dead zone
- 0.05m high distance resolution,128k sampling points
- Fast auto measurement,one-button operating
- Test up to four wavelengths with a single unit
- Communication light check automatically
- Remote function via Ethernet
- Double USB interfaces, supporting USB stick and printer and direct cable download to PC via ActiveSync
- Supporting Bellcore GR196 file format in writing or reading
- Built-in lithium battery with high capacity for over 8 hours of operating life
- Visible fault locating (VFL) and optical power meter
- Universal FC/PC,FC/SC,FC/ST connector type, it's convenient for surface cleaning
- Unique function of updating application software on-line, returning to factory is unnecessary

Ordering information:

Specify base unit	
Ordering NO.	Description
ST-6418-SS	ST-6418 base unit with standard display brightness
ST-6418-HS	ST-6418 base unit with enhanced display brightness

Note: the standard OTDR interface type is FC/UPC,type of FC/APC is optional.

Standard accessories:

No.	Name	No.
1	Power line	1
2	AC/DC adapter	2
3	Quality certification	3
4	User manual	4
5	Trace analyzing software(CD)	5
6	Hard Carrying case(including gallus)	6
7	Special gallus of instrument	7

ST-6416 Advanced Palm OTDR

ST-6416 Palm OTDR is the newest instrument designed for testing FTTx network. Its mainly used to measure the physical characteristics of optical fiber under test, such as the length、the transmission loss and the splice loss etc.. It can also locate the faults or breaks of optical fiber. Its widely applied in the manufacture, construction and maintenance in optical fiber communication system.

ST-6416 palm OTDR has the most advanced technology of double-color & material integrative mould, which is novel and beautiful in appearance.ST6416 offers three wavelengths and VLF in one handheld unit, especially for testing passive optical network (PON) in FTTx. In addition, its equipped with comfortable gallus for carrying conveniently.

Features:

- Handheld、lightweight and convenience for carrying
- The most advanced technology of double-color & material integrative mould in trade
- Advanced anti-reflective TFT LCD,visible clearly in field
- 1.6m extra-short event dead zone
- 0.25m high resolution, 65535 sampling points
- Fast auto measurement,one-button operating
- Double USB interfaces, supporting USB stick and direct cable download to PC via ActiveSync
- Supporting Bellcore GR196 file format in writing or reading
- Function of intelligent indicating of remaining capacity of battery and warning if the voltage of battery is low.
- WinCE operation system, double operating interface of Chinese and English
- Built-in lithium battery with high capacity for over 10 hours of operating life
- Visible fault locating (VFL)
- Universal FC/PC,FC/SC,FC/ST connector type, its convenient for surface cleaning
- Unique function of updating system on-line, returning to factory is unnecessary
- **Extra-short Event Dead Zone**
  ST-6416 palm OTDR has extra-short event dead zone, which is suitable for testing short optical fiber and pigtail optical fiber.
- **High-speed auto measurement**
  The function of auto measurement of ST6416 palm OTDR makes it unnecessary to operator to know about the further details of operating. Simply connect the fiber, press [Start],then the result is displayed in a few seconds, you can view the trace and event table.

ST-6416 Advanced Palm OTDR

Features:

- **Strong file management**
  ST-6416 offers powerful function of file management. Besides saving、browsing or deleting files to or from USB stick and built-in memory, it can be connected to laser or inkjet printer based on PCL language, and the testing report can be printed rapidly and easily. In addition, ST-6416 can communicate with PC using ActiveSync via USB cable, through which the files can be translated rapidly.
- **Convenient VFL**
  The built-in 650nm visual fault location is ideal for easily identifying bad splice, bad connector, break or macro bend.

Specifications:

MODULE	3528	5626	3428
Wavelength	1310nm/1550nm ±20nm	1550nm/1625nm ±20nm	1310nm/1550nm/1490nm ±20nm
Applicable Fiber	Single-mode		
Dynamic Range[1]	28/26dB	26/24dB	28/26/24dB
Distance Measurement Accuracy	(1m + sample space + 0.003% * measurement distance)		
Event Dead Zone[2]	1.6m		
Sampling Resolution	0.25, 0.5, 1, 2, 4, 8, 16m		
Distance Range	4, 8, 16, 32, 64, 128, 256km		
Pulse width	10, 30, 80, 160, 320, 640, 1280, 5120, 10240ns		
Loss threshold	0.01dB		
Sampling points	65534		
Linearity	0.05dB/dB		
Memory capacity	800 Traces		
IOR setting	1.00000…2.00000		
Display	Color LCD (touch screen)		
Interface	USB 2.0 , Min-USB		
VFL	650nm ±10nm, 2mW(typical); CW/1Hz		
Language	Simple Chinese/English		
Optical Connector	FC/UPC (universal connector)		
Power Supply	DC:15V…20V(3A), (AC adapter 100…240V,50/60Hz,1.5A), Built-in Lithium battery：4400mAh,7.4V,operating time：Ã[3]		
Dimensions	210mm*100mm*60mm		
Weight	about 1kg		

Note1：pulse width 10240ns, average times：300，SNR=1，23∩±2∩；
Note2：Pulse width:10 ns, terminal reflection loss：:40dB, typical；
Note3：Low brightness, exclude measuring.

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ST-6416 Advanced Palm OTDR

Ordering information

Main frame: ST-6416 Palm OTDR
Standard accessories:

NO.	Name	Quantity
1	Power line	1
2	AC/DC adapter	1
3	Quality certification	1
4	User manual	1
5	Trace analyzing software (CD)	1
6	Hard Carrying case (Including gallus)	1
7	Special gallus of instrument	1

Standard module: The available modules of ST6416 palm OTDR are shown as following：

Ordering number	Operating wavelength	Optical fiber type	Dynamic range
ST-6416-5626	(1550nm/1625nm) ±20nm	SMF	26/26dB
ST-6416-3528	(1310nm/1550nm) ±20nm	SMF	28/26dB
ST-6416-3428	(1310nm/1550nm/1490nm) ±20nm	SMF	28/26/24dB

Note：One and only one module of above must be selected.

Options

No.	Name	Type	Note
1	USB stick		Saving measuring data
2	Printer	Hp LJ P2015d or Hp LJ 1022	Printing traces
3	USB cable		Communicating with PC
4	Soft carrying case with nylon material		Carrying case
5	Standby battery pack	Special battery pack for St6416 palm OTDR	Standby battery
6	FC/SC，FC/STconnectors		

Note：For the necessity of improvement, the material contained in this document is subject to change without notice.

Detailed operation manual book could be offered in advance.

Shineway S20 palm OTDR

S20 palmOTDR series handheld OTDR supports averaging and real-time tests featuring compact design, excellent stability, user-friendliness and cost-effectiveness. The hotkeys enable convenient events review and analysis. A variety of models are available for singlemode/multimode fibers and LAN/WAN/FTTx applications. With TraceManager software, you can save and transfer test data from OTDR to PC for further analysis, reporting and printing.

Specifications

Model (1)	Wavelength (±20nm)	Dynamic Range(2)	Event DeadZone(m)	Attenuation DeadZone(m)
palmOTDR- M20A/N	850/1300	18/22dB	7(6)	20(6)
palmOTDR- S20A/N	1310/1550	24/24dB	10(5)	25(5)
palmOTDR- S20B/N	1310/1550	32/32dB	2.5	14
palmOTDR- S20C/N	1310/1550	38/37dB	2.5	14
palmOTDR- S20C/N+	1310/1550	45/43dB	2.5	14
palmOTDR- S16C/N	1625	37dB	1.5	10
palmOTDR- S20C/P	1310/1490/1550	38/37/37dB	2.5	14
palmOTDR- S20C/X	1310/1550/1625	38/37/37dB	1.5	10
Selectable Range (Km) (3)	0.1,0.3,0.5,1.3,2.5,5,10@850nm; 0.1,0.3,0.5,1.3,2.5,5,10,20,40,80@1300nm; 0.3,1.3,2.5,5,10,20,40,80,120,160,240@others			
Pulse Width (4)	12ns,30ns,100ns,275ns,1μs@850nm; 12ns,30ns,100ns,275ns,1μs,2.5μs@1300nm 5ns,10ns,12ns,30ns,100ns,275ns,300ns,1μs,2.5μs, 10μs,20μs@others			
Averaging Time	15s,30s,1min,2min,3min			
Distance Measure Accuracy	±(1 m + 5×10-5×distance + sampling space)			
Attenuation Detect Accuracy	±0.05 dB/ dB			
Reflection Detect Accuracy	±4 dB			
Data Storage	Type C: 1000 records; Type A/B: 300 records			
Connectivity	USB/RS-232			
Connector	FC/PC (Interchangeable SC, ST)			
Power Supply	NiMH Battery / AC Adapter			
Battery Life	8 hours continuous operation; 20 hours standby (on one charge)			
Operating Temperature	0℃ ~ 50℃			
Storage Temperature	-20℃ ~ 70℃			
Relative Humidity	0~95% (non-condensing)			
Weight	1kg (2.2 lbs)			
Dimensions (H×W×T)	220×110×70mm (8.7×4.3×2.7 inch)			
Visible Fault Locator (Only available with Type B/N and C/N)				
Output Power (dBm)	≥-3			
Max Measurement Range	5 Km			

Features

- Ideal for LAN/WAN/FTTx certification & trouble-shooting
- FTTx in-service testing/Testing through ≥1×64 splitter: Model S16C/N & S20C/X (1625nm with filter)
- Perfect MMI, handheld & lightweight (only 1kg)
- Overall fiber applications: SM: 1310/1490/1550/1625nm (with filter), up to 45dB MM: 850/1300nm, 18/22dB Value-added 650nm VFL
- Quick start: <5 seconds
- Hotkeys: Easiest operation in the world, push-and-test
- High precision measurement, large internal memory RS232/USB data interface
- Bellcore file format (.sor)
- PC software for traces batch editing & flexible printing
- Multilanguage: EN/DE/ES/PT/RU/KR/CN
- 8 hrs continuous operation/20 hrs standby
- Dust-shock proof (2m drop test)
- CE, FCC, FDA certificate

Applications

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

Standard Package Includes:

Instrument, FC/PC connector, NiMH battery, TraceManager software CD, Data cable(RS232/USB), AC adaptor, Soft carrying case, Warranty card, CE certificate, Certificate of calibration, Quick reference guide.

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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.

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 adapter for power supply
- Low battery indication

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(℃)	-10～+60	
Storage Temperature(℃)	-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.

ST-3212B PON Optical Power Meter

It Is an upgraded version of ST-3212B PON power meter, it aims at the FTTx application and maintenance which not only can be used to test and estimate the signals of the voice, data and video at the same time, but also can be used to test the continues wave light power. The calibrated wavelengths for CW light power measurements includes 850, 1300,1310,1490,1550,1625nm. It is an essential and ideal tester for the construction and maintenance of the PON projects.

Technical Specification

Model	ST-3212B
1310 upstream measurement	
Pass Zone(nm)	1260～1360
Isolation@1490/1550(dB)	>40
Measurement Range(dBm)	-40～+10
1490 downstream measurement	
Pass Zone(nm)	1470～1505
Isolation @ 1550nm(dB)	>30
Isolation@ 1310nm(dB)	>40
Measurement Range(dBm)	-40～+12
1550 downstream measurement	
Pass Zone(nm)	1535～1570
Isolation at 1490nm(dB)	>40
Isolation at 1310nm(dB)	>40
Measurement Range(dBm)	-40～+25
Measurement Accuracy	
Connatural uncertainty(dB)	±0.5
Linearity(dB)	±0.1
Passing through insertion Loss(dB)	<1.5
General Information	
Detector Type	InGaAs
Optical Connector	FC/SC/ST Interchangeable
Fiber Type	9/125um
Display	LCD:128*64
Measurement Unit	dB/dBm/xW
Resolution (dB)	0.01
Operation Voltage(V)	DC 3.3～5.5
Power Supply	3 AA1.5V battery
Continuously Operation time (h)	PON Power Meter Mode：90h Normal Optical Power Meter Mo:100h VFL Mode:50h
Operation Temperature(℃)	-10～60
Storage temperature(℃)	-25～70
Weight(kg)	500g

Features

- Providing simultaneous measurement at all three wavelengths on the fiber (1490nm, 1550nm, 1310nm)
- Used in Burst mode measurement of 1310nm upstream
- CW light power measurement is available with wavelengths of 850,1300,1310,1490,1550,1625nm.
- VFL Function for quick and efficient Visual Inspection
- USB communication port enables data transfer to a PC 1000 measurement items can be saved in ST-3212B PON power meter or computer for data review.
- ST-3212B PON power meter offers up to 10 different threshold sets in total; Three status LEDs represent different optical signal conditions of Pass, Warn and Fail respectively.
- User self-calibration can be performed and "Factory Default" mode can be retrieved in computer through the software.
- PON SC standard connector, easy to test, other type connector port can be required on customer requests.
- Backlight LCD display supports night operation.
- 10 minutes Auto-off function can be activated or deactivated with keypad operation.

Normal Optical Power Meter Module:

Measurement Accuracy	
Connatural uncertainty(dB)	±0.25
Linearity(dB)	±0.1
Measurement Range(dBm)	-70～+6 or -50～+26

VFL Module:

Output Power(mW)	1mw
Wavelength(nm)	650
Optical Connector	FC/2.5 universal connector

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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 Ø1.0mm 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.

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

Specifications

MODEL	ST-3211A	ST-3211C
Wavelength(nm)	800~1700nm	
Detector Type	InGaAs	
Detector Size	Ø1.0mm	
Measurement Range (dBm)	-70~+10	-50~+30
Uncertainty	±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 (℃)	-10 ~ +60	
Storage Temperature (℃)	-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.

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.

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

Specifications

Type	ST-3208A	ST-3208C
Wavelength(nm)	800~1700nm	
Detector	InGaAs	
Measurement Range (dBm)	-70~+3	-50~+26
Uncertainty	±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 (℃)	-10 ~ +60	
Storage Temperature (℃)	-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.

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.

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

Specifications

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

Standard Packages

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

STD-1000 Min USB Intelligent Power Meter

STD-1000 Min Series Power Meter equips with wide angle detector, replaceable attenuator and various fiber adapters, which can be connected directly with the computer with USB 2.0 or RS232 communication port. It is an intelligent but economical test device and very suitable for optical power measurements from Passive Components Producers, Research Lab and University Lab.

Product Features
Wide angle Si、Ge detectors can be alternative
The STD 1000 min series OPM can support the detector size up to 5mm for Ge detector and 10mm for Si detector.
The measurement wavelength range is from 400~1100nm for Si detector and 800~1600 for Ge detector, with dynamic ranger of 60dB.

Compensation of the detector temperature
STD1000min series OPM can calibrate the value of the testing result trough the detector temperature compensation; this will lessen the reading value offset caused by the external temperature change

Various Optical Fiber Adaptors can be required
STD1000min series OPM provide the FC, SC, ST, LC and other kind of changeable optical fiber adaptors, can adapt for all kinds of the need of the optical fiber connection.

Specification

Model	STD-1000 mini Series OPM
Wavelength (nm)	400~1100(Si); 800~1600(Ge)
Pre-determined calibrated wavelength (nm)	850/980/1300/1310/1490/1550/ 1625 （Ge Detector）；660/780/ 820/850 （Si Detector）
Self-calibration wavelength qty	9 Max
Uncertainty（Full rang）	5%
Dynamic Rang（dB）	70
Unit	Linear：nw、uw、mw、w Log：dB、dBm
Displaying speed（Data average）	SLOW：960ms（16 times on average）MEDIUM：480ms（8 times on average）FAST： 60ms（uneven）
Resolution	0.001
Communication Port	Standard RS232 Port or USB port
Cable length	1.5m（Standard）or Customized
Operation temperature (℃)	+10~+40
Storage temperature(℃)	-20~+60
AC adaptor	9V DC/RS232 or supply by USB cable
Warm-up time	20Min.
Weight(kg)	<200g
Dimensions(mm)	Ø45×40

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.

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

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	AC220V（50Hz）
Operating Temperature(℃)	-10~+60
Storage Temperature(℃)	-25~+70
Dimension(mm)	290*260*120
Weight(kg)	3

Standard Packages

MODEL	INCLUDES
ST-3201 all models	ST-3201 Optical Power Meter,Power Suppy Cord, RS232 Cable, PC software disk,Fuze, Instruction Manul and Cotton tampon.

ST-3207 Handheld Optical Multimeter

integrates the functions of an intelligent optical power meter module and of a highly stable light source module in one unit which can perform closed-loop tests by incorporating both modules. Individual regimes of operation can also be manually chosen using menu operation to switch functions. A perfect combination to make your optical fiber tests a lot more convenient.

Features

- Includes all the outstanding functions of handheld intelligent power meter(ST-3206)
- Includes all the outstanding functions of handheld stable light source(ST-3108)
- Switching of the power meter function and that of the light source by menu operation
- Different light sources and power meters can be built into ST-3207

Applications

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

Specifications

Type	ST-3207A	ST-3207C
Optical Power Meter Module		
Detector Type	IngaAs	
Measurement Range (dBm)	-70~+6	-50~+26
Uncertainty	5%	
Calibrated wavelengths (nm)	850,980,1300,1310,1490,1550	
Rosolution(dB)	0.01	
Data Storage Capacity	240 data items	
Identification Frequency Rang	10Hz~60KHz	
Optical Connector	FC(interchangeable SC,ST)	
Optical Light Source Module		
Emitter Type	FP-LD	
Wavelengths	1310/1550(other wavelengths can be optional)	
Ouput Power(dBm)	-7	
Spectral Width	≤10nm	
Output Stability	±0.05dB/15mins; ±0.1dB/ 8hours	
Modulation Frequencies	270Hz, 1KHz, 2KHz	
Optical Connector	FC/ PC	
General Specifications of Multi Meter		
Power Supply	Rechargeable Battery + Power Supply Adaptor	
Communication Interface	Rs232	
Battery Operating Time	≥6 hours(Both Power Meter and Ligh Source are working) ≥28hours(Only Power Meter is working)	
Auto-off time	10mins	
Operating Temperature(℃)	-10~+60	
Storage Temperature(℃)	-25~+70	
Dimension(mm)	210x115x55	
Weight (g)	540	

Standard Packages

MODEL	INCLUDES
ST-3207 Models	ST-3207 Multimeter Protective Rubber Rechargeable battery Power Supply Adaptor Software Disk Data upload Cable RS232 Instruction Manul Contton Tampon Rigid hard carrying case can be optional

OLT-50 Intelligent Optical Loss Tester

OLT-50 Intelligent Optical Loss Tester combines stabilized laser source and optical power meter which can perform automatic bidirectional loss test on single fiber with Pass/Fail assessment to offer user-friendly operation and avoid potential operational mistake.

The rugged and easy-to-use OLT-50 is the ideal optical loss tester for FTTx, LAN and CATV application.

- FTTx/PON applicable
- Optical power monitoring
- Bidirectional loss test on single fiber
- ORL test
- Pass/Fail assessment
- Automatic wavelength identification
- Remote reference value setting
- Internal clock & fiber S/N editable
- Storage of 1000 test records
- Data transfer to PC via USB
- USB power charging
- Over 50 hours continuous operation
- No warm-up, quick start
- Backlight
- Pocketsize, lightweight and easy-to-use
- CE, FCC, FDA certificates

Ordering Information

Standard Package Includes:
Instrument, Lithium battery, AC adapter/charger, USB cable, Software CD, Soft carrying case, Warranty card, CE certificate, Certificate of calibration, User manual.

Specifications

Model	OLT-50	
Stabilized Laser Source		
Wavelength (±20nm)	1310/1550nm	1310/1490/1550nm
Spectrum Width	≤5nm	
Emitter Type	FP-LD	
Output Power	>-4dBm	
Power Stability	±0.05dB/15min; ±0.10dB/8hr@1310/1490/1550nm	
Output Mode	CW, 270Hz, 1KHz, 2KHz	
Optical Power Meter		
Calibrated Wavelength(1)	850, 1300, 1310, 1490, 1550, 1625nm	
Power Range (dBm)	-70 ~ +10(2)-50 ~ +27	
Display Unit	W/mW/μW/nW/pW/dBm/dB(REF)	
Detector Type	InGaAs	
Accuracy	±5%±0.01nW (±0.5 dB@850nm)	±5% ±1nW (±0.5 dB@850nm)
Resolution	0.01dB	
Auto Wavelength Identification	Yes (With ShinewayTech specified Stabilized Laser Source)	
MOD Identification	270Hz, 1KHz, 2KHz	
Optical Loss Test		
Link Loss Range	50dB (1550nm, 200km)	
Link Loss Accuracy	±0.25dB	
Link Loss Test Time	< 2 seconds per wavelength	
ORL Test (Optional)		
ORL Range	0~60dB	
ORL Accuracy	±0.75dB@(0~50dB), ±1.5dB@(50~60dB)	
ORL Uncertainty	±0.5dB@20dB	
General Specifications		
Connector	FC (Interchangeable SC, ST)	
Data Storage	1000 records	
Data Interface	USB	
Backlight Display	Yes	
Auto Off	Yes (Auto-off after 5 minutes idle)	
Power Supply	Lithium Battery/ AC Adapter	
Battery Life	Continuous operation ≥50 hours	
Operating Temperature	0°C ~ 50°C	
Storage Temperature	-20°C ~ 70°C	
Relative Humidity	0 ~ 95% (Non-condensing)	
Weight	350g	
Dimensions (H × W × T)	177×80×44mm	

Note:(1) Other wavelengths are open for customization;
(2) At 850nm, the lower limit of measurement range is -60 dBm; Specifications subject to change without notice

ST-FHM USB Optical Loss Test Set(Multimeter)

The FHM2 series Optical Loss Test Set(Multimeter) combines a power meter and a 3-wavelength laser source, for optical fiber network installation and maintenance. With the large capacity of data storage, its very convenient for field testing and transfering the test results to PC through USB interface..

Features:

- Auto wavelength recognition
- Data storage up to 999 results
- USB interface and PC associated software available
- Interchangeable connectors available for both power meter and laser source.

Ordering Information:

Standard Accessories:
User Manual, Rechargeable Batteries, Carrying Soft Bag, Interchangeable FC/SC/ST connectors, AC /DC Power Adapter, PC software, USB Connecting Cable.

Optical Accessories:
LC/E2000 connectors for power meter port, Aluminium Carrying Box

Specifications:

		FHM2A02	FHM2B02
Power Meter	Calibration wavelength (nm)	850/1300/1310/1490/ 1550/1625	
	Connector	Interchangeable FC/SC/ ST for PC/APC	
	Data storage (items)	999	
	Ref. Value	Yes	
	Display Units	DB/dBm/mW/ μW	
	Display precision (dB)	0.01	
	Accuracy	± 5%±1nW	
	Wavelength Recognition	1310/1490/1550 (input power ≥-40dBm)	
	Tone Detection	270 Hz / 1KHz / 2KHz (input power ≥-40dBm)	
	Measuring Range dBm	-70 to +10	-50 to +26
Laser Source	Output wavelength (nm)	1310/1490/1550	
	Connector	Interchangeable FC/SC/ST for PC(APC is available at time of ordering)	
	Modulation frequencies	270/1K/2K Hz	
	Output Power	-5dBm±0.5dB	
	Stability	Long-term 8h	±0.1dB 1310/1550nm ±0.2dB 1490nm
		Short-term (15min)	±0.05dB 1310/1550nm ±0.1dB 1490nm
	Wavelength Recognizing Code	Yes	
General Specification	Auto Power off	√	
	Power Supply	2pcs *NiHM 1.2V, 2000mAh AC/DC Adaptor	
	PC interface	USB	
	Battery Life	> 100 Hours (laser off)	
	Storage Temperature	-20~+70℃	
	Operating Temperature	-10~+50℃	
	Relative Humidity	<90% (Non-condensing)	
	Dimension (mm)	168*76*43	
	Weight (Gram)	310	

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.

Features

- Wave ID information can be transmitted when used with ST-3216 Optical Power
- Meter.Tone generation, 270HZ,330HZ,1KHZ,2KHZOutput power can be adjustableOutput 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 adapter for power supply
- Low battery indication

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℃)	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(℃)	-10～+60
Storage Temperature(℃)	-25～+70
Outline size （mm）/weight	180*90*45(250g)

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

ST-3111 optical 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 Ouput 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(℃)	-10～+60
Storage Temperature(℃)	-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.	

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

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.

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.

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

Specifications

Type	ST-3110
Wavelengths(nm)	1310 or 1550
Emitter Type	FP-LD
Ouput 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(℃)	-10~+60
Storage Temperature(℃)	-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 Manul, Contton Tampon and Protective Holster.

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.

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, 2KHzmodulation 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

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(℃)	-10~+60			
Storage Temperature(℃)	-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.

ST-3306A 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)
- Ma chanical damp design of adapter heads to ensure the fiber without damage.
- "ONE KEY" operation design, easy-to-sue

Applications

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

Specifications

Type	ST-3306A
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℃
Storage Temperature	-25—+70℃
Dimension (mm)	195X30X27
Weighgt (g)	235

Standard Packages

MODEL	INCLUDES
ST-3306A	ST-3306A Optical Fiber Identifier, 4pcs adapter heads, Alkaline battery, Instruction Manul, Contton Tampon and Soft Carrying case.

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 traffice is present,the intermittently audible tone is activated.

The ST-3306B optical fiber identifier alsor recogize the modnulation like,270Hz,1kHz and 2kHz .When they are used to detect the frequency, the continuously audible tone is activated.

There are four core adapter heads available: Ø0.25, Ø0.9, Ø2.0 and Ø3.0. The JW3306A optical fiber identifier is powered by a 9V alkaline battery .

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

Specifications

Type		ST-3306BB	
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	
Singe 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 Temperature(℃)		9	
		-10—+60	
Storage Temperature(℃)		-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.

OFI-3 Optic Fiber Identifier

Introduction:

The Optical Fiber Identifier is a low cost, portable instrument designed to detect optical signals without disrupting traffic. Based on non-destructive macrobending technology, the OFI-3 doesn换 disrupt traffic, damage or overstress the fiber, enabling efficient, accurate and reliable data acquisition. During maintenance, installations, rerouting or restorations, it挺 often necessary to isolate a specific fiber. By simply clamping the OFI-3 onto a fiber, the OFI will indicate if there is a signal, a Modulated Signal, or traffic and show signal direction.

Features:

- SPAN> Detect a variety of optical tones, 270Hz, 1kHz and 2kHz
- SPAN> Powered by 2 units of 1.5V AA alkaline batteries
- SPAN> RB0.25mm, RB0.9mm, RB3.0mm plungers available

Specifications:

Recognizable Wavelength Range		900 to 1650nm
Recognizable signal type		CW, 2kHz, 1kHz, 270Hz
Detector Type		InGaAs 2pcs
Clamp Type		H0.9/0.25 for bare fibers ; H2.5 for jacketed fiber
Sensitivity	@ 1310nm	+11dB to-20 dBm (Continuous Wave) +11dB to-10 dBm (Modulated Signal)
	@ 1550nm	+11dB to-30 dBm (Continuous Wave) +11dB to-18 dBm (Modulated Signal)
LED Indicator		signal traffic; signal frequency(2kHz/1kHz/270Hz); signal intensity (5 grades) ; low battery
Operating temperature		-10 to +50℃
Storage temperature		-20 to+70℃
Power Supply		1.5V AA batteries*2pcs
Dimension (mm)		202L*62W*36H
Weight (g)		270

ST-33041 New Fiber Cable Fault Locator

ST-33041 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-33041 fiber ranger detect fiber faults location more accurate and easy.

ST-33041 Fiber Ranger is ideal to be used in FTTx network installation and maintenance.

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.

Specifications

Model		ST-33041
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-33041	ST-33041 Fiber Ranager, 3pcs 1.5V batteries, User Manual, Cotton swabs and Soft carrying case.

ST-3105P Pentype VFL

The ST-3105 Pentype 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

Features

- 2.5mm universal connector, for 1.25mm connectors,
- FC (Male)-LC (Female) convertor 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

Specifications

Type	ST-3105 Pen-type Visual Fault Finder
Central Wavelength	650nm±10nm (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) convertor 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	-10~+45 (℃)
Storage Temperature	-40~+70 (℃)
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.

ST-3105 Visiable Cable Fault Locator

Is used for the measurement in single-mode or multi-mode fibers. It features a rugged design, an universal connector and an accurate measurement. The ST-3105 visual fault locator easily identifies the cutting, micro-bending of the optic fiber, passes through the jacket fiber and performs an end-to-end fiber identification. Its measurement range is up to 5km. It is an ideal tool for the examination of all kinds of patch cords and ribbon or bunched pigtails in the installation and maintenance of fiber optic networks.

Standard Packages

Type	ST-3105
Wavelengths(nm)	650nm
Emitter Type	FP-LD
Ouput Power(SM)	1mw,3mw or 10mw(according to customer's requirement)
Operating model	Both CW and Pulse available
Optical Connector	Universal 2.5mm Connector (FC,SC,ST)
Power Supply	2 AAA alkaline batteries
Operating Time	>50 hours
Operating Temperature(℃)	-10~+50
Storage Temperature(℃)	-30~+60
Dimension(mm)	℃24X203
Weight（Including battery）	120g(Without battery)

Features

- 650nm Output wave lenght
- 2.5mm universal optical connector port
- High output power(Up to 10mw)
- Long time battery life(Up to 50hours with 2 pcs AA A batteries)
- Supports both CW and pulse working models
- Portable and rugged design, easy to use
- Finding the breakpoint, bending or cracking
- Finding the fault of OTDR dead zone
- Fiber Identification from one end to the other end

Applications

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

Standard Packages

MODEL	INCLUDES
ST-3105	ST-3105 VFL, Alkaline battery, Instruction Manul, Contton Tampon and Soft carrying pouch.

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

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

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.

ST-02 Variable optic Attenuator

ST-02 OVA

Fiber optic attenuator is a device used to reduce the power level of an optical signal. Our portable variable attenuator OVA-02 performs just as well in a laboratory environment as it does in the field.

Our Variable Fiber Attenuator is unique in the market, due to its special technique which make our instruments not need powring. It can complement the basic funtions of Multiple Applications at a low cost.

Features

- Operating by the single rotary knob, easy and fast;
- Reliable bi-directional attenuation
- Double scale indication
- Large attenuation range
- No powering system is needed

Specifications:

Operating wavelength	1310nm, 1550nm
Attenuating mode	Bi-directional and continuous
Adapter type	FC/PC
Insert Loss	<3dB
Signal type	CW
Attenuating range	60dB
Operating temperature	-10~+50℃
Storage temperature	-20~+70℃
Dimensions	150L*80W*28H (mm)

Ordering Informaiton:

Standard Accessories:
FC/PC connector, User Manual, Carrying Bag, Test Report

ST-04 Fiber Optic Talk Set

Features:

- Two pairs of OTS-4 supports tri-party communication via clip-on coupler device
- Hands-free(HF) speaker provides users with convenient operation
- Maximum dynamic range 50dB@1550nm for long distance communication

Main Features:

- Energy-saving design, long-time operation
- Can be used as a steady laser source
- Articulate voice, low background noise
- Judgmatical calling function
- 32 steps volume control
- Low-power alarm
- Maximum dynamic range 50dB for long distance communication

Specification:

	OTS-3	OTS-4
Wavelength	A:1310nm, B:1550nm (unit A works at 1310nm, unit B works at 1550nm)	
Telecommunication system	Full duplex communication	
Fiber Type	SM & MM (the dynamic range will shrink 20dB for MM fiber)	
Spectral Width	<15nm	
Adaptor type	FC/PC	FC/PC
Dynamic Range	40dB	50dB
Output Power	-3 dBm	
Power Supply	9V Laminated Battery &. AC/DC adaptor	Replaceable build-in Ni-MH Battery &. AC/DC adaptor
Operating Hours	10 hours (standard)	40 hours (standard)
	OTS-3	OTS-4
Tri-party communication	N/A	
Hands-free speaker	NO	YES
Dimension	160L*70W*20H	220L*110W*45H
Operating Temperature	-10~+50℃	
Storage Temperature	-20~+70℃	
Operating Humidity	<90% (Non-condensing)	
Net weight	200g (including battery)	550g (including battery)

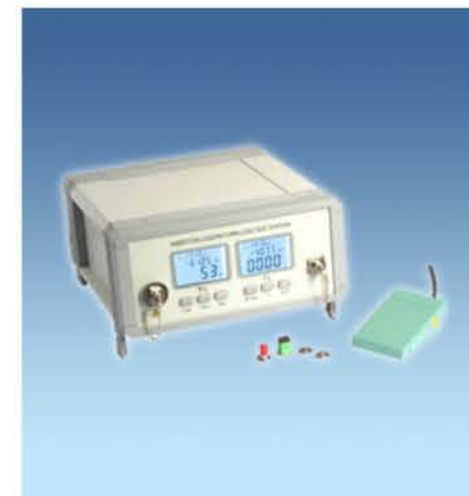@ 1550nm CW 23±3℃, Relative Humidity 70%, with FC connector

Ordering Information:

Standard Accessories:
Main uints (unit A and unit B), FC/PC connector, Carrying Bag, Manual, Battery, Headset, AC/DC Adaptor, Test Report

Optional Accessories:
Clip-on Device, ST/PC Connector, SC/PC Connector

ST-3307A/B Insertion Loss/Return Loss Test Station

Is a high performance loss test station that is designed specially for Optical Passive Components production Test and Lab Test. It combines three different working modes as a return loss meter, optical power and loss meter and a stable laser source in one test station.

Specifications

Model	ST-3307A
Optical Return Loss Test	
Wavelength	1310/1550nm
Optic Connector	FC/APC
Return Loss measurement Range	0 ~ 75dB
Calibrated wavelength	850/1300/1310/1550nm
Output Stability of laser source	0.05dB(1 hour@250C)
Measurement accuracy	0.25dB
Resolution	0.01dB
Optical Power and Loss Test	
Wavelength Range	800~1700nm
Calibrated wavelength	850/1300/1310/1550nm, more other wavelengths can be optional
Optic Connector（Power Meter）	Interchangeable FC/SC/ST/2.5mm Universal /1.25mm adaptors
Photo detector	InGaAs
Display modes	DBm/dB/xW
Measurement range	+3 ~ -80 dBm
Resolution	Non-linear 0.001dB；Linear：0.001nw/μW/mW
Measurement accuracy	0.25dB
Other Specification	
Communication Port	USB
Power Supply	AC 90-260V，50~60Hz
Operation Temperature	-5℃～+55℃
Storage Temperature	-25℃～+70℃
Dimensions	300X260X120mm
Weight(kg)	3

Features

- High measurement accuracy
- Accurate analysis to wide dynamic ranger and weak signal
- Two LCD displays used, efficiently reduced eye strain of operators
- Leakage design of optical power meter module and light source module, obviously reduced operation procedures.
- Movitable optical connector set design, easy to clean
- USB Port design, enables data trasfer to a PC via USB port .

Standard Packages

MODEL	INCLUDES
ST-3307A	ST-3307A Main Body, Power Supply Cord,FC Adaptor, SC Adaptor, ST Adaptor 25mm Universal, 1.25mm Universal Adaptor,Instruction Manual,FC/APC-FC/APC patch cord FC/APC-FC/PC patch cord, Cleaning Cotton Swab, Fuse, USB Cable(Optional) PC software (Optional), Foot Peda (Optional)

ST-2010 Fused Bi-conic Taper(FBT) System

Description

ST-2010 Fused Bi-conic Taper(FBT) System, is an automatic controlled coupler working station, which integrates Electronic, Precision Processing, as well as Computer technologies, can meet various function requirements: Manufacturing, Testing, Monitoring & controlling, With its easy-to-use character, 2010 FBT system were widely used for manufacturing splitters, couplers, WDMs, CWDMs and so on. As time goes by, FBT technology has become the basic technology for optic fiber coupler fabricating, higher and higher precision machine(coupler workstation) has emerged to deal with more and more demands on high quality, high precison and high stabilty optic fiber couplers. Such as dual-windows broadband fiber splitters, high isolation WDM units, and a lot of other new components.

Features

- High-capacity, high reliability, flexible Manufacturing
- High-precision, large-scale, multi-wavelength online measurement
- Real-time monitoring. East-and-quick positioning
- "nm" level breakdown of micro-level drive
- Mechanical precision, ultra-smooth operation, shock-proof design
- Modular design, easy maintenance and upgrade
- Additional low loss, good consistency of Products
- Windows-based software package, user-friendly, convenient operation, powerful The use of hydrogen generation device to eliminate potential safety problems High precision of splitting ratio, Good environmental stability

Application

- Fiber pull machine
- Optical power monitoring meter
- Hydrogen gas flow controlling devices
- Ultraviolet Light Solidified Device+Manual encapsulation
- Automatic encapsulation heating solidifying. Computer for controlling

Specification

Model	ST-2010
Application	Standard Coupler Wide-band Coupler WDM
Product Specifications	
Movement Resolution Of Fiber Chucks	0.001um/um/Step
Pulling speed(one side)	0-400um/sec
Stroke Length Of Fiber Chucks	25-100mm
Pre-Pulling	0.001-10mm
Movement Resolution Of Torch Unit	3 axes 1.5mm/step
Hydrogen Flow Control	0-300 sccm
Pre-Package Unit	Auto
Curing Temperature Of Pre-Package Unit	Continuous Adyustment
Photo Detectors	φ2mm InGaAs
WaveLength Range	850nm-1650nm
Power Meter Range	+3dBm - -70dBm
Power Meter Accuracy	±5%(-10dBm, 23℃)
Power Meter linearity	±0.02dB(+3dBm - -60dBm)
Elecrical and Mechanical Specifications	
Dimension(w×d×h)	558×398×250
Voltage Supply	110VAC or 220 VAC 50/60Hz
Power Consumption	320W

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