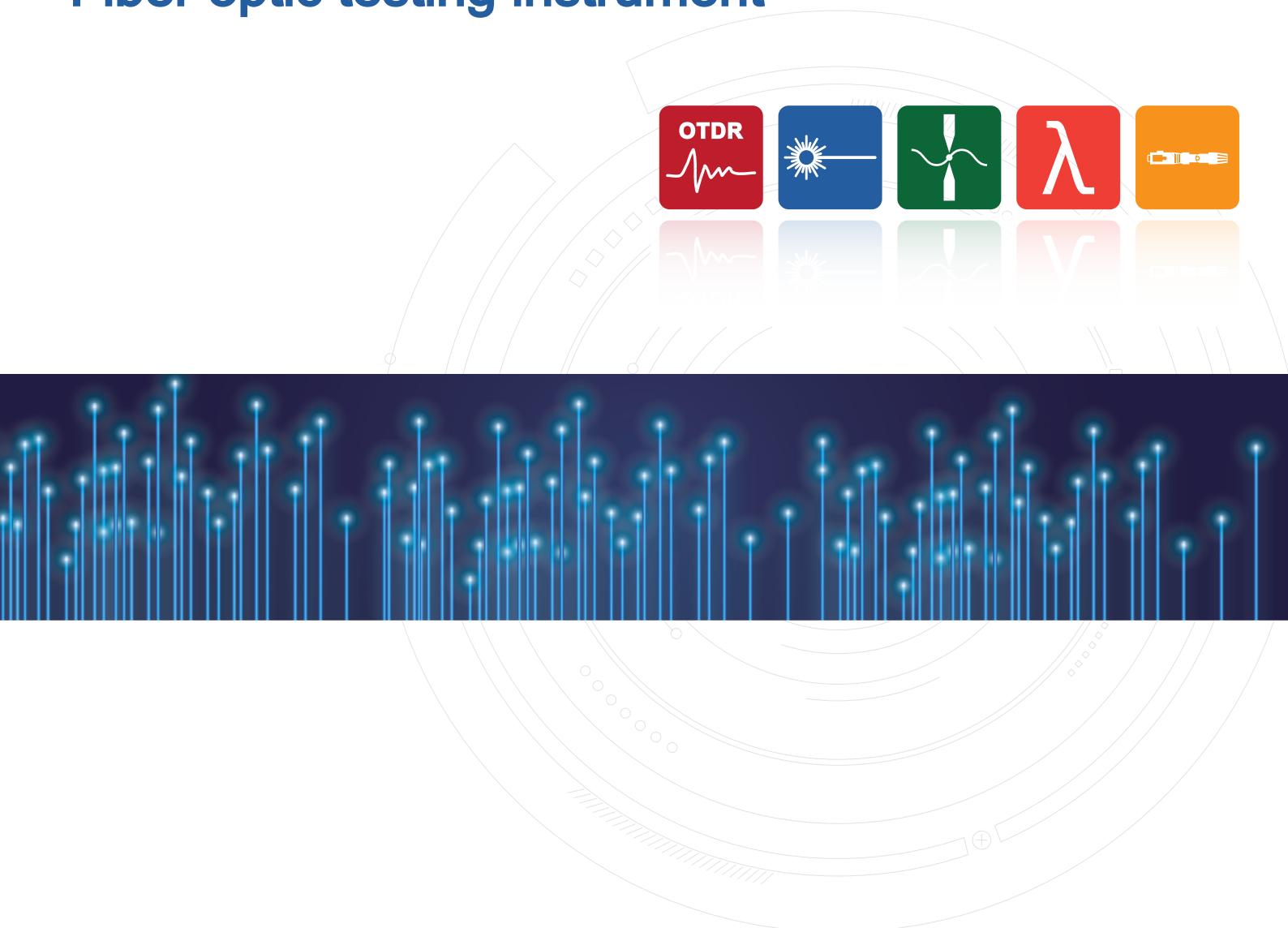


Grandway

Fiber optic testing instrument





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Shanghai Grandway Telecom Tech.Co.,Ltd

Note: Specifications Subject to change without notice



Established in 1994, Grandway Telecom Tech., has been focusing on telecom industry in the past 27 years.

Thanks to the efforts of each colleague, our instruments and FTTH ODN solutions are recognized by world's leading telecom operators, ISP, and telecom solution providers over 80 countries.

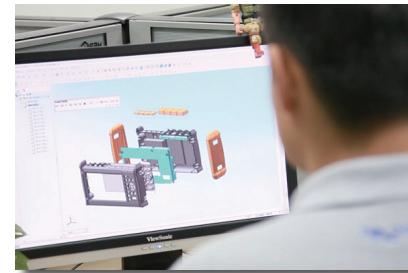
"Let's go in the Grandway!"

Located in Haining Science and Technology Oasis, Zhejiang Province, Grandway factory has a total area of 4559.05 square meters.

For the hardware, our production and testing lines are equipped with high accuracy process and test instruments, and our advanced warehouse management system also helps us to store and deliver the goods fast and well.

For the manufacture team, we have hundreds of experienced workers, whose average education level is above senior high school, and have worked in electronics areas for over 5 years.

All of these guarantee our production capacity to 300000-400000 sets/year with high quality, and easy to operate.





The core business of Grandway is to provide products and solutions for optical communication network , construction and maintenance.

According to different network structure and customer's personalized needs, we provide comprehensive and diversified test products and solutions with excellent performance and quality. Such as fusion splicer, OTDR, laser source, optical power meter, fiber finder and data testing instrument.

In order to effectively manage the user resources of fiber to the home, we have developed new generation products FOH-8 PRO and FOH-100 to help operators complete the user resource management.

Grandway is always committed to providing customers with the best optical communication network test solutions.



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Datacom Network Testing

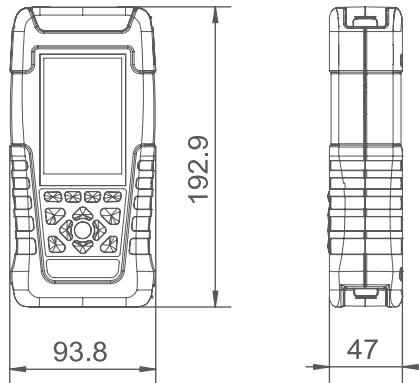
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FHO1000 Handheld OTDR



- **SHORT** event and attenuation dead zone
- Handheld design with 3.5-inch color LCD
- Support VFL/OPM/FLM test
- Support RJ45 network cable test

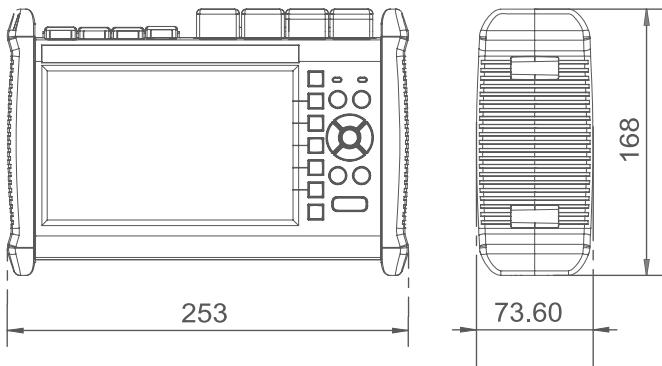


Items	Specifications
Wavelength	1310±20nm/1550±20nm
Dynamic Range	≥24dB
Event Dead-Zone	≤1m
Attenuation Dead-Zone	≤5m
IOR Setting	1.30000~1.70000
Pulse Width	3ns/5ns/10ns/20ns/50ns/100ns/200ns/500ns/1us/2us/5us/10us/20us
Sampling Points	64000
Sampling Resolution	Min 0.05m
Distance Accuracy	±0.5m
Loss Accuracy	0.1dB
Linearity	0.1dB
Reflectance Accuracy	±2dB
Optical Port	FC/UPC , SC/UPC
Working Humidity	0 ~85%(Non-Condensing)
Working Temp	-10~+50°C



FHO5000 Series OTDR

- Multiple dynamic range and wavelength combinations can be customized
- Support pass through 1x64 splitters
- With online light alarm function
- FLM (Fiber Link Map) function, icon display fiber events
- Remote control on PC software is available
- Multi languages selection



Items		Specifications
Pulse Width	SM	3ns, 5ns, 10ns, 20ns, 50ns, 100ns, 200ns, 500ns, 1μs, 2μs, 5μs, 10μs, 20μs
	MM	850nm: 3ns, 5ns, 10ns, 20ns, 50ns, 100ns, 200ns, 500ns, 1us 1300nm: 3ns, 5ns, 10ns, 20ns, 50ns, 100ns, 200ns, 500ns, 1us, 2us
Distance Range	SM	100m, 500m, 2km, 5km, 10km, 20km, 40km, 80km, 120km, 160km, 240km
	MM	850nm: 500m, 2km, 5km, 10km 1300nm: 500m, 2km, 5km, 10km, 20km, 40km, 80km
Sampling Resolution		Min 0.05m
Sampling Points		Max 128,000
Linearity		≤0.05dB/dB
Loss Threshold		0.01dB
Loss Resolution		0.001dB
Distance Resolution		0.01m
IOR Setting		1.2000~1.7000
Distance Accuracy		±(1m+test distance×3×10 ⁻⁵ +sampling resolution) (excluding IOR uncertainty)
Memory Capacity		80,000 groups curve



Items	Specifications
VFL	10mW, CW/2Hz
Interface	1*RJ-45, 3*USB (Type A×2, Type B×1)
Display	7-inch TFT-LCD (touch screen is optional)
Battery	7.4V/4.4Ah lithium battery (with air traffic certification)
Temperature	Working Temp: -10°C~+50°C; Storage Temp: -20°C~+70°C
Humidity	≤95% (No-condensation)
Dimension	253×168×73.5mm
Weight	1.5kg (with battery)
Accessories	Power adapter, Charge cord, Lithium battery, FC adapter, USB cable, Quick guide, Test report, CD, Carrying bag, Wrist strap
Optional	SC/LC adapter, Fiber microscope, Launch cable box

Model	Wavelength	Dynamic Range	Dead-zone
FHO5000-D26	1310/1550nm	26/24dB	0.8/4m
FHO5000-D35		35/33dB	0.8/4m
FHO5000-D40		40/38dB	1/4m
FHO5000-D43		43/41dB	1/5m
FHO5000-D45		45/43dB	0.8/3.6m
FHO5000-TP35	1310/1490/1550nm	35/33/33dB	0.8/4m
FHO5000-T40F	1310/1550/1625nm	40/38/38dB	1/4m
FHO5000-T43F		43/41/41dB	1/5m
FHO5000-TC35F	1310/1550/1650nm	35/33/31dB	1/5m
FHO5000-M21	850/1300nm	19/21dB	1.2/8m
FHO5000-MD21	850/1300nm	19/21dB	1.2/8m
	1310/1550nm	35/33dB	0.8/4m
FHO5000-MD22	850/1300nm	19/21dB	1.2/8m
	1310/1550nm	40/38dB	1/4m

Notes

- 1: Please consult us for more customized models
- 2: Model T40F/T43F/TC35F are integrated built-in filter
- 3: Dynamic range is measured with 20us pulse width, averaging time is 180s, SNR=1;
- 4: Event dead-zone is measured with 3ns pulse width
- 5: Attenuation dead-zone is measured with 5ns pulse width



Ordering Information

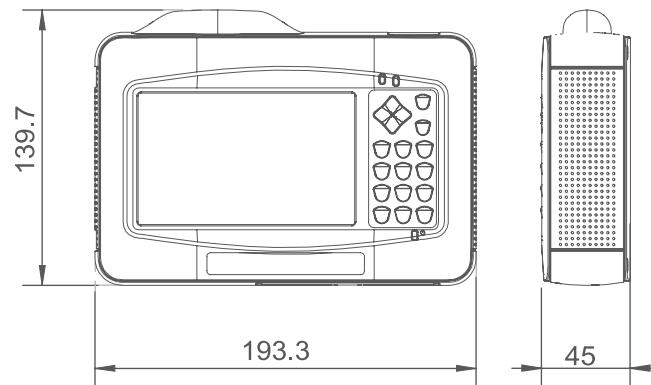
FHO5000-XX-XX-XX-XX-XX-XX-XX-XX	
Model	
M	850/1300nm
MD	850/1300/1310/1550nm
D	1310/1550nm
T	1310/1550/1625nm
TC	1310/1550/1650nm
TP	1310/1490/1550nm
P	1650nm
Dynamic Range	
21	19/21dB for Model M or 19/21/35/33dB for Model MD
22	19/21/40/38dB for Model MD
26	26/24dB for Model D
35	35/33dB for Model D or 35/33/33 for Model TP
40	40/38dB for Model D
43	43/41dB for Model D
45	45/43dB for Model D
35F	35/33/31dB for Model TC with filter
40F	40/38/38dB for Model T with filter
43F	43/41/41dB for Model T with filter
P26	26dB for Model P with filter
P38	38dB for Model P with filter
Laser Source	
/	Without laser source
LS	With laser source
	Connector
/	FC/UPC(default)
SC	SC/UPC
ST	ST/UPC
	Fiber Link Measurement
/	Without fiber link measurement
FLM	With fiber link measurement
	Fiber Microscope
/	Without fiber microscope
FM	With fiber microscope
	Touch Screen
/	Without touchscreen
TS	With touchscreen
	Power Meter
/	Without power meter
PMA	With power meter TYPE A
PMB	With power meter TYPE B





FHO3000 Mini Series OTDR

- High cost effective OTDR choice
- With online light alarm function
- 5-inch LCD touch screen
- FLM (Fiber Link Map) function, icon display fiber events
- Support customer customization needs
- One button screenshot function



Items	Specifications
Pulse Width	3ns, 5ns, 10ns, 20ns, 50ns, 100ns, 200ns, 500ns, 1μs, 2μs, 5μs, 10μs, 20μs
Sampling Resolution	Min 0.05m
Sampling Points	Max 128,000
Linearity	±0.03dB/dB
Loss Threshold	0.01dB
Loss Resolution	0.001dB
Distance Resolution	0.01m
IOR	1.2000~1.7000
Distance Accuracy	±(1m+test distance×3×10 ⁻⁵ +sampling resolution) (excluding IOR uncertainty)
Memory Capacity	80,000 groups curve
VFL	10mW, CW/2Hz
OPM	Calibrated wavelength: 850/1300/1310/1490/1550/1625/1650nm
	Test range: -60~+5dBm
Interface	3*USB port (Type A×2, micro USB×1)
Display	5-inch TFT-LCD touch screen



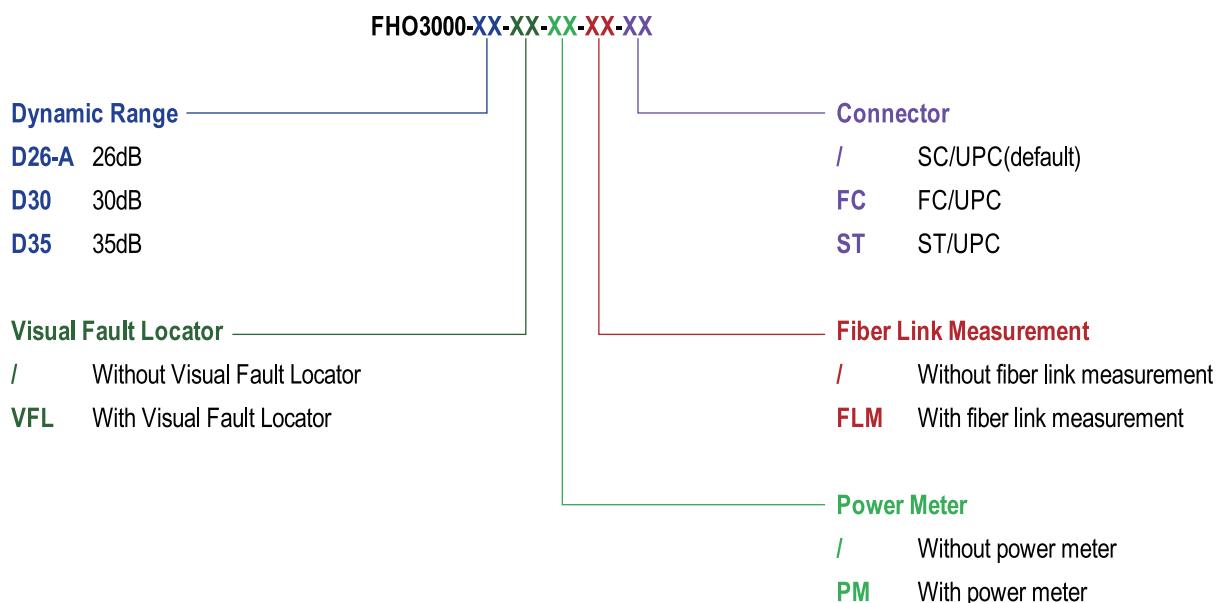
Items	Specifications
Battery	7.4V/3300mAh lithium battery, Continuous work: 6 hours(backlight off)
	Charge time: 3.5 hours
Temperature	Working temp: -10°C~+50°C; Storage temp: -20°C~+70°C
Dimension/Weight	195×141×44mm / 0.9kg(with battery)
Accessories	Power adapter, Charge cord, Lithium battery, FC adapter,USB cable,Quick guide, Test report, CD, Carrying bag, Wrist strap
Optional	SC/LC adapter, Launch cable box

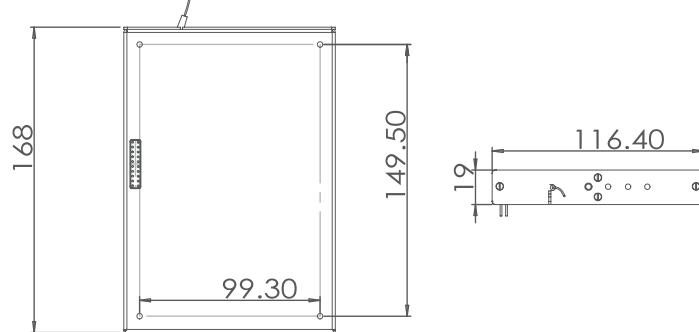
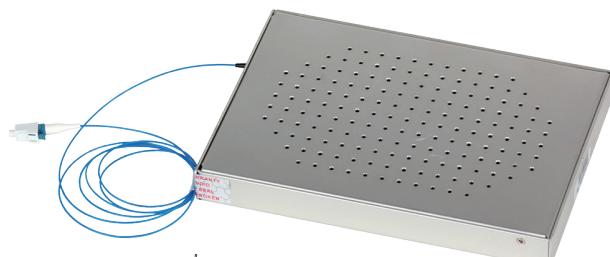
Model	Wavelength	Dynamic Range	Dead-zone
FHO3000-D26-A	1310/1550nm	26/24dB	3/8m
FHO3000-D30		30/28dB	1/5m
FHO3000-D35		35/33dB	1/5m

Notes

- 1: Please consult us for more customized models.
- 2: Dynamic range is measured with 20us pulse width, averaging time is 180s, SNR=1.
- 3: Event dead-zone is measured with 3ns pulse width.
- 4: Attenuation dead-zone is measured with 5ns pulse width.

Ordering Information





GW-4000 OTDR Module

- Small and high-performance mountable-type OTDR module
- Applicable to optical system monitoring

Items	Specifications		
Wavelength	1310nm±20nm	1550nm±20nm	1625nm±20nm
Fiber Type	0.9mm, SM		
Dynamic Range	40dB	38dB	38dB
Attenuation Deadzone	<12m	<10m	<10m
Event Deadzone	<1.5m		
Sampling Resolution	0.05m~4m		
Sampling Point	128,000		
Distance Accuracy	$\pm(1m + \text{measuring distance} \times 3 \times 10^{-5} + \text{sampling resolution})$		
Linearity	$\pm 0.05\text{dB}/\text{dB}$		
Laser Safety	IEC 60825-1:2007:CLASS 1		
Power Supply	DC 9~12V/2A		
Power Consumption	6W		
Interface	20PIN, 10/100M RJ45 port		
Serial Port	RS232C:115200bps		
Connector	FC, SC, ST, LC (Customized)		
Working Temp	-25°C~+60°C		
Storage Temp	-40°C~+70°C		
Humidity	0~95%		
Dimension/Weight	167L×115W×19H (mm) / 400g		



FHA3304 Fiber Ranger

- Easy to identify the faults location
- Max test distance: 60km
- Built-in 1mw VFL
- Memory capacity: up to 2500 measurement results

Items	Specifications
Wavelength	1550nm±20
Fiber Type	9/125 um
Fiber Connector	FC/PC
Pulse Width	Auto adjustment
Max Distance	60km
Distance Accuracy	$\pm(3m + \text{test distance} \times 2 \times 10^{-4})$ (excluding IOR uncertainty)
Memory Capacity	2500 results
VFL	1mw
Battery	3*AA battery
Temperature	Working Temp: -5°C~+40°C; Storage Temp: -10°C~+70°C
Dimension	175×90×44.5mm
Weight	278g



F2H-LFC Launch Fiber Cable

- Compact and ruggedized, easy to carry
- Excellent waterproof and dustproof performance
- Non-metal construction will not corrode or conduct electricity

Items	Specifications
Dimension	238(L) x 141(W) x 67(H)mm
Fiber Type	G.657A/G.652D (MM can be customized)
Typical Loss	<0.5dB @ 1310nm for 1,000 meters
Connector Type	FC/SC/LC selectable
Polishing Type	APC/UPC selectable
Box Material	Polypropylene
Color	yellow
Weight	0.75kg / 0.35kg (without fiber)
Operating Temperature	-40~+55°C
Ordering Information	
Name	LFC=Launch Fiber Cable
Connector 1	SC=SC/UPC; AS=SC/APC; FC=FC/UPC; AF=FC/APC; LC=LC/UPC; AL=LC/APC
Connector 2	SC=SC/UPC; AS=SC/APC; FC=FC/UPC; AF=FC/APC; LC=LC/UPC; AL=LC/APC
Fiber Type	7A1=SM G.657.A1; 2D=SM G.652.D; OM1=MM 62.5/125um; OM2=MM 50/125um
Cable Length	0.5=0.5km; 1=1km; 2=2km



FHO-LCB Launch Cable Box

- Compact, easy to carry
- Case can house up to 1,000 meters of fiber
- Attachable with FHO5000 Series OTDR

Items	Specifications
Dimension	206(L) x 122(W) x 23(H)mm
Fiber Type	SM G.652D
Adapter Type	Replaceable FC/SC/ST adapters
Polishing Type	APC or UPC
Color	black
Weight	1kg
Operating Temperature	-40~+55°C
Ordering Information	
Name	LCB=Launch Cable Box
Adapter 1	SC=SC/UPC; AS=SC/APC; FC=FC/UPC; AF=FC/APC; ST=ST/UPC; AT=ST/APC;
Adapter 2	SC=SC/UPC; AS=SC/APC; FC=FC/UPC; AF=FC/APC; ST=ST/UPC; AT=ST/APC;
Fiber Type	7A1=SM G.657.A1; 2D=SM G.652.D; OM1=MM 62.5/125um; OM2=MM 50/125um
Cable Length	500=500m; 1000=1000m



GS-60 Fusion Splicer

- Six motors accurate fiber core alignment technology
- Fast splice time: 9 seconds
- Auto splice, auto Arc optimization, auto heating
- 3 hours fast charge
- High precision 4-in-1 holder(250 μ m/900 μ m/3mm patchcord / FTTx indoor fiber), SOC holder

Items	Specifications
Alignment	6 motors core alignment
Fiber Type	SMF (G.652), MMF (G.651), DSF (G.653), NZ-DSF (G.655), BIF (G.657), EDF
Fiber Diameter	Cladding: 80~150μm, Coating: 100~1000μm
Cleave Length	8-16mm
Display	5 inches touch screen LCD
Splicing Loss	MMF ≤ 0.01dB (Typical); SMF/BIF ≤ 0.02dB (Typical); DSF/NZDSF/EDF ≤ 0.04dB (Typical)
Splicing Time	≤ 9s (SM Fast mode)
Heating Time	≤ 25s, adjustable
Return Loss	≥ 60dB
Data Storage	5000 splicing records, 100 screenshots
Tension Test	≥ 2N
Protection Sleeve	40mm - 60mm
Electrode Life	5000 splices
Imaging System	Dual CMOS cameras, 200X zoom
Power Supply	4400mAh lithium battery
Battery Life	≥200 splicing and heating cycle
Data Port	USB
Dimension	125x125x135mm (L x W x H)
Weight	1.7kg (with battery)
Working Condition	-25°C~+50°C / -30°C~+70°C (Working/Storage)
	Humidity:≤90% (Non-condensing)
	Altitude:0 m~5000 m, Wind Speed≤15 m/s



Fusion Splicer



Name	Quantity	Name	Quantity
GS-60 Splicer	1 set	Carrying Case	1 set
Cleaver	1 set	Cooling Tray	1 set
Fiber Holders	1 pair	CD(User Manual)	1 set
AC Adapter	1 set	Warranty Registration Card	1 copy
AC Power Line	1 set	Certificate of quality	1 copy
Battery Pack	1 pcs	Certificate of Calibration	1 copy
Data Transfer Cable	1 set		





GS-40 Fusion Splicer

- Four motors special precision-positioning technology
- Fast splice time: 9 seconds
- Auto splice, auto Arc optimization, auto heating
- 3 hours fast charge
- High precision 4-in-1 holder(250 μm/900 μm/3mm patchcord / FTTx indoor fiber), SOC holder

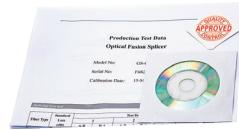
Items	Specifications
Alignment	4 motors cladding alignment
Fiber Type	SMF (G.652), MMF (G.651), DSF (G.653), NZ-DSF (G.655), BIF (G.657), EDF
Fiber Diameter	Cladding: 80~150μm, Coating: 100~1000μm
Cleave Length	8-16mm
Display	5 inches touch screen LCD
Splicing Loss	MMF ≤ 0.01dB (Typical); SMF/BIF ≤ 0.02dB (Typical);
	DSF/NZDSF/EDF ≤ 0.04dB (Typical)
Splicing Time	≤ 9s (SM Fast mode)
Heating Time	36s, adjustable
Return Loss	≥60dB
Data Storage	5000 splicing records, 100 screenshots
Tension Test	≥ 2N
Protection Sleeve	40mm - 60mm
Electrode Life	5000 splices
Imaging System	Dual CMOS cameras, 200X zoom
Power Supply	4400mAh lithium battery
Battery Life	≥200 splicing and heating cycle
Data Port	USB
Dimension	125x125x135mm (L x W x H)
Weight	1.5kg (with battery)
Working Condition	-25°C~+50°C / -30°C~+70°C(Working/Storage)
	Humidity:≤90% (Non-condensing)
	Altitude:0 m~5000 m, Wind Speed≤15 m/s



Fusion Splicer



Name	Quantity	Name	Quantity
GS-40 Splicer	1 set	Carrying Case	1 set
Cleaver	1 set	Cooling Tray	1 set
Fiber Holders	1 pair	CD(User Manual)	1 set
AC Adapter	1 set	Warranty Registration Card	1 copy
AC Power Line	1 set	Certificate of quality	1 copy
Battery Pack	1 pcs	Certificate of Calibration	1 copy
Data Transfer Cable	1 set		





GS-4015S Fusion Splicer

- Auto splice mode manifest user-friendly design.
- Dust-proof, water-proof, high-temperature resistance, adapting to various altitude and formidable nature conditions.
- 5 '' high resolution color LCD touch screen, 500X magnification, visible clearly with bare eyes.
- Packed with detachable 5200mAh battery, more than 280 times of splicing and heating.
- 3 high-power white LEDs and illuminated keypads simplifies your work at night.
- Detachable multifunction fixture, suitable for various fiber type.

Items	Specifications
Alignment	4 motors cladding alignment
Fiber Type	SM(G.652&G.657)/MM(G.651)/DS(G.653)/NZDS(G.655)
Compatible Fiber/Cable	0.25-3.0mm/Indoor Cable
Cleaved Length	Diameter: 0.125-1mm/Cleave length:8-16mm
Cladding Diameter	80-150um
Splicing Mode	Multiple splicing modes
Heating Mode	Multiple heating modes
Typical Splicing Loss	0.01dB-0.05dB
Return Loss	≥60dB
Lighting	3 White LEDS
Splicing Time	Quick mode:6-10s
Estimated Splicing Loss	Available
Heating Sleeve Length	20-60 mm
Heating Time	Typical heating time:30s, Quick heating time 15s
Results Storage	1000 records
Tension Test	1.5-2.0N
Display	90°bi-directional view,5 inches 800*480 high-resolution color capacitive touch-screen
Fiber View&Magnification	X,Y,X/Y;500X Magnification
Power Supply	AC input 100-240V, DC input 12-15V
Battery Life	5200mAh Battery Capacity, Typical 280 times(splice+heat)
Operating Methods	Button/Touch Screen
Automatic Calibration	Automatic ARC calibration by air pressure and temperature
Electrode Life	5000 splices



Items	Specifications
Terminal	Micro USB 2.0
Dimension	130W*165L*150H(excluding rubber bumper)
	140W*165L*160H(including rubber bumper)
Weight	2kg (including rubber bumper)
Working Condition	-10°C~+50°C / -40°C~+80°C(Working/Storage)
	Humidity: \leq 95% (Non-condensing)
	Altitude:0 m~5000 m, Wind Speed \leq 15 m/s

Name	Quantity	Name	Quantity
GS-4015S Fusion Splicer	1set	Alcohol bottle	1set
Fiber Cleaver	1set	Brush	1set
Battery	1pcs	Screw driver	1set
Power Adapter	1set	User manual	1copy
Electrode Bar	1pair	Splicing test report	1copy
Fiber Tray	1set	Fiber stripper (optional)	1set
Carrying Case	1set	Drop cable stripper (optional)	1set
Carrying Case Straps	1set		





GS-4018 Fusion Splicer

- Auto splice mode manifest user-friendly design.
- Dust-proof, water-proof, high-temperature resistance, adapting to various altitude and formidable nature conditions.
- 4.3 '' high resolution color LCD touch screen, 380X magnification, visible clearly with bare eyes.
- Packed with detachable 4000mAh battery, more than 230 times of splicing and heating.
- 3 high-power white LEDs and illuminated keypads simplifies your work at night.
- Detachable multifunction fixture, suitable for various fiber type.

Items	Specifications
Alignment	4 motors cladding alignment
Fiber Type	SM(G.652&G.657)/MM(G.651)/DS(G.653)/NZDS(G.655)
Compatible Fiber/Cable	0.25-3.0mm/Indoor Cable
Cleaved Length	Diameter: 0.125-1mm/Cleave length:8-16mm
Cladding Diameter	80-150um
Splicing Mode	Pre-set 41 splicing modes, max 100 modes
Heating Mode	Pre-set 5 heating modes, max 100 modes
Splicing Loss	SM: 0.03dB / MM: 0.02dB / DS:0.05dB / NZDS:0.05dB / G.657:0.03dB(ITU-T Standard)
Return Loss	≥60dB
Lighting	3 White LEDS
Splicing Time	Quick mode:6s
Estimated Splicing Loss	Available
Heating Sleeve Length	20-60 mm
Heating Time	Typical heating time:30s, Quick heating time 13s
Results Storage	20000 latest records & 200 images
Tension Test	1.96-2.25N
Display	90°bi-directional view, 4.3" color high resolution display
Fiber View&Magnification	X,Y,X/Y;380X Magnification
Power Supply	AC input 100-240V, DC input 12-15V
Battery Life	4000mAh Battery Capacity, Typical 230 times(splice+heat)
Operating Methods	Button/Touch Screen
Automatic Calibration	Automatic ARC calibration by air pressure and temperature
Electrode Life	5000 splices



Items	Specifications
Terminal	Mini USB 2.0
Dimension	115W*160L*135H(excluding rubber bumper)
	120W*165L*135H(including rubber bumper)
Weight	1735g(with battery) / 1355g(without battery)
Working Condition	-10°C~+50°C / -40°C~+80°C(Working/Storage)
	Humidity:≤95% (Non-condensing)
	Altitude:0 m~5000 m, Wind Speed≤15 m/s

Name	Quantity	Name	Quantity
GS-4018 Fusion Splicer	1 set	Carrying case	1 set
Fiber Cleaver	1 set	Carrying strap	1 set
Battery	1 pcs	User manual	1 copy
Power Adapter	1 set	Splicing test report	1 copy
AC Power Line	1 set	Alcohol bottle	1 set
Back-up Electrode	1 pair	Fiber stripper (optional)	1 set
Cooling Tray	1 set	Drop cable stripper (optional)	1 set





GW-750 Fiber Cleaver

- One action to complete fiber cutting
- High cutting accuracy
- Equipped with multi-function fiber holder, suitable for various types of optical fiber
- Support blade automatic rebound function
- Equipped with residual fiber collection box

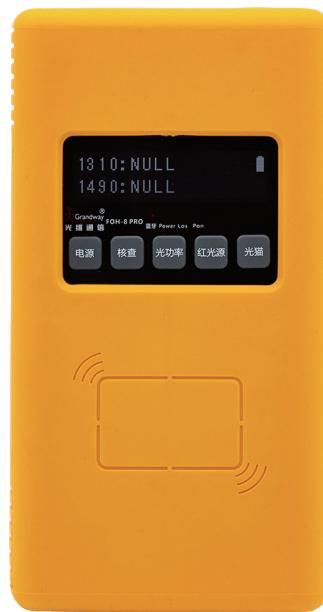
Items	Specifications
Fiber Type	Silicon fiber
Fiber Count	Single
Bare Fiber Diameter	125μm
Coating Diameter	160~900μm, 2mm/3mm and drop cable
Cleaving Angle	≤0.5°
Cleaving Length	5~20mm
Adjustable Blade Position	3 heights and 16 surfaces
Blade Life	48000 times (1000 fibers×16 surfaces×3 heights)
Dimension	63W×69D×58H mm (without residual fiber collection box)
Weight	360g



GW-850 Fiber Cleaver

- High cutting accuracy
- Equipped with multi-function fiber holder, suitable for various types of optical fiber
- Mini shape and durable
- Surface oxidation process

Items	Specifications
Fiber Type	Silicon fiber
Fiber Count	Single
Bare Fiber Diameter	125μm
Coating Diameter	250~900μm, 2mm and drop cable
Cleaving Angle	≤0.8°
Cleaving Length	5~20mm
Adjustable Blade Position	3 heights and 16 surfaces
Blade Life	48000 times (1000 fibers×16 surfaces×3 heights)
Dimension	58W×55D×55H mm
Weight	280g



FOH-8 PRO ONU Terminal Tester

- Quickly check redundant port resources
- Fast analysis of terminal ONU device status
- Check accuracy > 90%
- High precision OTDR for fault location of the last 1km
- PON power meter support 1310nm/1490nm test

Items	Specifications
Optical Port	2*SC/UPC ports, VFL: universal 2.5mm
Charge Port	1*TYPE-C charge port
ONU Status Test	Serial connection: Online, Offline, No user
	Terminal connection: ONU connected, No user
PON Power Meter	1310nm : -35~+5dBm, 1490nm : -35~+10dBm
ONU Simulation(Optional)	Support G/EPON ONU simulation test
VFL	Wavelength: 650±10nm
	Output power: 5mW, Test distance: ≥ 5Km
	Modulation frequency: CW / 2Hz
High Precision OTDR	Dynamic range: ≥ 6dB Pulse width: 3ns
	Event dead-zone: ≤ 2m Attenuation dead-zone: ≤ 6m
Power Supply	7500mAh lithium battery
Wireless	Bluetooth
Working Temp	-10°C ~ 50°C
Humidity	5% - 95% relative humidity, non condensing
Dimension	175 × 94 × 46.5mm
Weight	577g



PON



FOH-100 ONU Resource Tester



- Read online user information (PPPOE, LOID, SN, PASSWORD, MAC)
- Use high-precision OTDR technology to check off-line user(No user or power off), accuracy>90%
- Power amplification when connected into the fiber link
- One button test to quickly check the fault location in the last kilometer of FTTH (PRO version)
- Fast detection and location of Rogue ONU

Items	Specifications
Optical Port	2*SC/UPC ports
Charge Port	1*TYPE-C charge port
Protocol Analysis	Read PPPOE/LOID/PASSWORD/SN/MAC
ONU Status Test	Online, Offline, No user, Broken fiber, Unregistered
PON Power Meter	1310nm : -30~+5dBm, 1490nm : -30~+5dBm
High Precision OTDR (FOH-100 PRO Version)	Dynamic range: ≥ 6dB Pulse width: 3ns Event dead-zone: ≤ 2m Attenuation dead-zone: ≤ 6m
Power Supply	7500mAh lithium battery, Input: 5V/2A
Wireless	Bluetooth
Working Temp	-10°C~40°C
Humidity	5% ~ 95% relative humidity, non condensing
Dimension	175×94×46.5mm
Weight	700g



FHP2P01 PON Power Meter

- Support measuring 1310nm upstream burst signal and 1490/1550nm downstream signal
- Support EPON/GPON network
- 900 data storage function
- With Pass, Warning, Fail mode
- Intelligent charging and auto power off

Items	Specifications		
Wavelength	1310nm	1490nm	1550nm
Sensor Type	InGaAs		
Isolation Rate	1490nm>40dB	1310nm>40dB	1310nm>40dB
	1550nm>40dB	1550nm>30dB	1490nm>30dB
Test Range	-40~+16dBm	-50~+16dBm	-50~+23dBm
Insertion Loss	<1.5dB		
Broadband	1260~1360nm	1480~1500nm	1539~1565nm
Accuracy	0.5dB±1nW@1550nm		
Resolution	0.01dB		
Threshold	10 groups (configured via PC software)		
Data Storage	900		
Working Temp	-10°C~+50°C		
Communication Port	USB port		
Power Supply	2*Ni-MH AA battery		
External Power Supply	DC 6V/1A		
Dimension/Weight	160L×76W×45H(mm) / about 400g		
Accessories	Power adapter, USB cable, 2*FC adapter, 2*SC adapter, 3*ceramic sleeves, 2*Ni-MH AA battery, CD, Test report, Quick guide, Carrying bag		



PON



FHP3P01 PON Power Meter

- Support measuring 1310nm upstream burst signal and 1490/1550nm downstream signal
- Support EPON/GPON network
- 2.8-inch TFT LCD Display with high resolution
- 1000 data storage function
- With Pass, Warning, Fail mode and LED indicator
- Equipped with protective rubber

Items	Specifications		
Wavelength	1310nm	1490nm	1550nm
Sensor Type	InGaAs		
Isolation Rate	1490nm>40dB	1310nm>40dB	1310nm>40dB
	1550nm>40dB	1550nm>30dB	1490nm>30dB
Test Range	-40~+10dBm	-50~+15dBm	-50~+20dBm
Insertion Loss	<1.5dB		
Broadband	1260~1360nm	1480~1500nm	1539~1565nm
Accuracy	0.5dB±1nW@1550nm		
Resolution	0.01dB		
Threshold	10 groups (configured via PC software)		
Data Storage	1000		
Working Temp	-10°C~+50°C		
Communication Port	USB port		
Power Supply	4*Ni-MH AA battery		
External Power Supply	12V AC/DC adapter		
Dimension/Weight	190L×105W×55H(mm) / about 700g		
Accessories	Power adapter, USB cable, 2*FC adapter, 2*SC adapter, 3*ceramic sleeves, 4*Ni-MH AA battery, Test report, Quick guide, Carrying bag		



FHP2G10 Power Meter

- 1270/1310/1490/1550/1577/1625nm power value test
- 10GEPON/XGPON downstream 1490nm/1577nm power value test respectively
- With threshold setting, Fail / Warning / Pass can be displayed
- 10mW VFL
- 999 groups memory capacity

Items	Specifications
Optical Port	OPM: SC/UPC; VFL: SC/UPC
Calibrated Wavelength	1270/1310/1490/1550/1577/1625nm
Test Range	-40~+10dBm
Test Accuracy	±0.5dB
Resolution	0.01
Isolation	1490nm>35dB; 1577nm>35dB
VFL	10mW, CW / 2Hz
Memory Capacity	999
Communication Port	USB port
Power Supply	2*Ni-MH AA battery
Working Temp	-10°C~+50°C
Storage Temp	-20°C~+70°C
Dimension	160L×76W×45H(mm)
Weight	300g



PON



FHP3P05 10GPON Power Meter

- Applicable to 10GEPON/XGPON optical power testing
- Support downstream 1490/1550/1577nm test
- Support upstream 1270/1310nm test
- With threshold setting and Pass/Fail function
- 1000 groups of data storage

Items	Specifications							
Wavelength	1270nm	1310nm	1490nm	1550nm	1577nm			
Sensor Type	InGaAs							
Test Port	2 ports, Universal or SC/UPC							
Linearity	$\pm 0.2\text{dB}$ @1550nm $\geq -40\text{dBm}$							
Isolation of Wavelength	>30dB							
Test Range	-30~+8dBm		-40~+10dBm					
Insertion Loss	<1.5dB							
Accuracy	0.5dB							
Display Resolution	0.01dB							
Threshold	10 sets							
Data Storage	1000 groups							
Interface	USB							
Power Supply	4×1.2V AA Ni-MH batteries							
Working Temp	-10°C~+50°C							
Storage Temp	-20°C~+70°C							
Dimension/Weight	190L×105W×55H (mm) / 700g							



FHP12 Series Mini Power Meter

- 2.5mm universal optical port
- Low power consumption, continuous use for 100 hours
- With backlight function
- Battery power display
- Compact and portable design

Items	Specifications	
	FHP12-A	FHP12-B
Sensor Type	InGaAs	
Working Wavelength	800~1700nm	
Calibrated Wavelength	850/1300/1310/1550/1490/1625nm	
Test Range	-70~-+10dBm	-50~-+26dBm
Resolution	0.01dB	
Accuracy	±0.35dB	
Continuous Working Time	About 100 hours	
Power Supply	2*AAA dry battery	
Working Temp	-10°C~+50°C	
Storage Temp	-20°C~+70°C	
Dimension/Weight	120L×33W×30H mm / about 70g	
Accessories	2*AAA dry battery, Quick guide, Carrying bag	



FHP1 Series Power Meter

- Integrated with high performance optical detector
- Support auto power off
- With backlight function
- Compact and portable design
- Support reference value setting

Items	Specifications	
	FHP-1A02	FHP-1B02
Sensor Type	InGaAs	
Connector	FC/PC	
Working Wavelength	800~1700nm	
Calibrated Wavelength	850/1300/1310/1550/1490/1625nm	
Test Range	-60~+3dBm	-40~+23dBm
Resolution	0.01dB	
Accuracy	±0.35dB	
Power Supply	4*AAA dry battery	
Working Temp	-10°C~+50°C	
Storage Temp	-20°C~+70°C	
Dimension/Weight	115L×62W×30H mm / about 140g	
Accessories	FC/PC adapter, 4*AAA dry battery, CD, Quick guide, Test report, Carrying bag	



FHP2 Series Power Meter

- Integrated with high performance optical sensor
- Auto wavelength recognition with FHS2 series laser source
- High accuracy and stability
- 999 group data storage function
- With computer software to export data and make reports
- With LCD backlight function and auto power off

Items	Specifications	
	FHP2A04	FHP2B04
Sensor Type	InGaAs	
Working Wavelength	800~1700nm	
Calibrated Wavelength	850/1300/1310/1490/1550/1625nm	
Test Range	-70~-+10dBm	-50~-+26dBm
Accuracy	±0.2dB	
Resolution	0.01	
Frequency Detection	270Hz/1kHz/2kHz	
Recognizable Wavelength	850/1300/1310/1490/1550/1625nm *(with FHS2 series laser source)	
Memory Capacity	999 groups (can be transferred to PC software)	
Power Supply	2* Ni-MH AA battery	
Working Temp	-10°C~+50°C	
Storage Temp	-20°C~+70°C	
Dimension/Weight	160L×76W×45H(mm) / 265g	
Accessories	2*Ni-MH AA battery, FC adapter, SC adapter, Power adapter, USB cable, CD, Test report, Quick guide, Carrying bag	

**FHP-V Series Power Meter**

- Integrated optical power meter and 10mw VFL function
- Hand-held design, easy to carry
- Multi units display, dB/dBm/mw/uw
- Support auto power-off and backlight

Items	Specifications	
	FHP1A01-V	FHP1B01-V
Sensor Type	InGaAs	
Connector	FC/PC	
Working Wavelength	800~1700nm	
Calibrated Wavelength	850/1300/1310/1550/1490/1625nm	
Test Range	-60~+10dBm	-40~+26dBm
Resolution	0.01dB	
Accuracy	±0.35dB	
VFL	650nm±10nm, 10mw	
Power Supply	4*AAA dry battery	
Working Temp	-10°C~+50°C	
Storage Temp	-20°C~+70°C	
Dimension/Weight	115L×62W×30H mm / about 140g	
Accessories	FC/PC adapter, 4*AAA dry battery, CD, Quick guide, Test report, Carrying bag	



FCA-18 CWDM Power Meter

- Simultaneously test and show 18 wavelengths
- Columnar graphics or list mode to show test data
- Save and upload test results via USB port
- Friendly interface and easy operation
- Support saving 1000 groups test data

Items	Specifications
Measuring Wavelength (nm)	1270/1290/1310/1330/1350/1370/1390/1410/1430/1450/1470/1490/1510/1530/1550/1570/1590/1610
Number of Channel	18
Test Range	-40~+5dBm
Resolution	0.01dB
Accuracy	±0.5dB
Optical Adapter	FC/PC (SC is optional)
Data Storage	1000 groups
Power Supply	Rechargeable Battery/AC power adapter
Working Temp	-10°C~+50°C
Storage Temp	-25°C~+70°C
Dimension/Weight	220L×70W×110H mm / about 850g
Accessories	CWDM Power Meter, 12V Power Supply Unit, User Manual, Cotton Swabs, Carry Bag, CD, USB cable

**VLS-8 Series Mini VFL**

- 2.5mm universal adapter (FC/SC/ST)
- Max 15km test range
- CW/2Hz output
- Suitable for SM/MM fiber
- Small and portable

Items	Specifications			
	VLS-8-1	VLS--8-10	VLS--8-15	VLS--8-30
Laser Type	LD			
Laser Safety Level	CLASS IIIA	CLASS IIIB	CLASS IIIB	CLASS IIIB
Output Power	≥1mW	≥10mW	≥15mW	≥30mW
Test Range	About 5km	About 12km	About 14km	About 15km
Connector	Universal 2.5mm			
Wavelength	650nm ± 10nm			
Modulated Frequency	CW / 2Hz			
Power Supply	2*AAA dry battery			
Working Temp	-10°C~+50°C			
Storage Temp	-20°C~+70°C			
Dimension/Weight	120L×33W×30H mm / about 67.8g			
Accessories	2*AAA dry battery, Quick guide, Carrying bag			



FHS1 Series Laser Source

- Both single mode and multiple mode laser are available
- Single output interface
- Rugged and portable
- Auto power-off function
- Support CW, 270Hz, 1kHz and 2kHz mode output

Items	Specifications	
	FHS1D02	FHS1D03
Output Wavelength	1310nm & 1550nm	850nm & 1300nm
Emitter Type	LD	
Connector	FC/PC	
Output Stability	Short Term (15minutes): <0.1dB	
	Long Term (5 Hours or above): <0.2dB	
Central Wavelength	1310±20nm & 1550±20nm	850±10nm & 1300±20nm
Spectral Width	5nm	
Output Frequency	270Hz, 1KHz, 2KHz	
Output Power	-5dBm±0.5dB	
Accuracy	±1dB	
Auto Power-off	Yes	
Back-Light	Yes	
Working Temp	-10 to +50°C	
Storage Temp	-20 to +70°C	
Power Supply	4*AAA dry battery	
Dimension/Weight	115L×65W×30H(mm)/140g	
Accessories	FC/PC adapter, 4*AAA dry battery, Carrying bag, Test report, Quick guide	



FHS2 Series Laser Source

- Both single mode and multiple mode laser are available
- Single output interface
- Rugged and portable
- Auto power-off function
- Support CW, 270Hz, 1kHz and 2kHz mode output

Items		Specifications				
		FHS2D02F	FHS2T01F	FHS2T02F	FHS2Q01F	FHS2Q02F
Output Power	-5dBm	√	√	√	√	√
Wavelength	1310/1550nm	√				
	1310/1490/1550nm		√			
	1310/1550/1625nm			√		
	850/1300/1310/1550nm				√	
	1310/1550/1490/1625nm					√
Others	270/1k/2kHz frequency	√	√	√	√	√
	Auto wavelength recognition	√	√	√	√	√

Laser type	LD
Power Supply	2*Ni-MH AA battery (Continuous use for 20 hours)
Working Temp	-10°C~+50°C
Storage Temp	-20°C~+70°C
Dimension/Weight	160L×76W×45H(mm) / 260g
Accessories	2*Ni-MH AA battery, FC adapter, SC adapter, 3*ceramic sleeves,Power adapter, USB cable, CD, Test report, Quick guide, Carrying bag
Customization	FC/APC, SC/APC, ST/APC





FHM2 Series Optical Multimeter

- Integrated laser source and optical power meter
- Dual or triple wavelength output
- Suitable for fiber or device insertion loss test
- Up to 999 test results storage
- With LCD backlight function and auto power off

Model	Specifications					
	FHM2A01	FHM2A02	FHM2B01	FHM2B02		
Laser Source Part (LD)						
Output Wavelength	1310/1550nm	1310/1490/1550nm	1310/1550nm	1310/1490/1550nm		
Output Power	-5dBm±0.5dB	0dBm±0.5dB	-5dBm±0.5dB	0dBm±0.5dB		
Frequency Output	270Hz/1kHz/2kHz					
Wavelength Recognition	1310/1550nm	1310/1490/1550nm	1310/1550nm	1310/1490/1550nm		
Power Meter Part (PD)						
Test Range	-70~+10dBm		-50~+26dBm			
Resolution	0.01dB					
Calibrated Wavelength	850/1300/1310/1490/1550/1625nm					
Accuracy	±0.2dB					
Frequency Detection	270Hz/1kHz/2kHz					
Wavelength Detection	Support					
Memory Capacity	999 groups					
Others						
Communication Port	USB					
Power Supply	2* Ni-MH AA battery					
Working Temp	-10°C~+50°C					
Storage Temp	-20°C~+70°C					
Dimension/Weight	160L×76W×45H(mm) / 260g					
Accessories	(LD)FC&SC adapter, (PD)FC&SC adapter, 2*Ni-MH AA battery, 3*ceramic sleeves, Power adapter, USB cable, CD, Test report, Quick guide, Carrying bag					
Optional	(PD) 1.25mm adapter/2.5mm adapter					

**FHA2S02 Optical Attenuator**

- Low insertion loss, wide attenuation range
- 0.05dB/1.0dB step attenuation adjust
- 8 sets of common attenuation value setting
- With LCD backlight function and auto power off

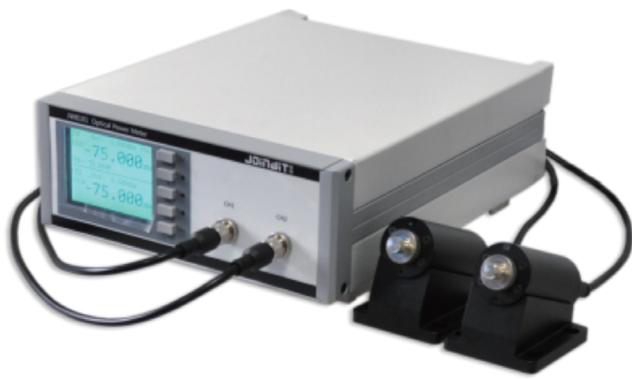
Items	Specifications
Applicable Wavelength	1310/1550nm
Fiber Type	SMF 9/125um
Signal Mode	CW/Modulated
Max Input Power	+25dBm
Attenuation Range	3~60dB
Resolution	0.05dB
Return Loss	>60dB(APC), >50dB(PC)
Insertion Loss	<3dB
Power Supply	2* Ni-MH AA battery
Working Temp	-10°C~+50°C
Storage Temp	-20°C~+70°C
Dimension/Weight	160L×76W×45H(mm) / 260g
Accessories	2*FC/PC adapters, 2*SC/PC adapters, 2* Ni-MH AA battery, Power adapter, USB cable, CD, Test report, Quick guide, Carrying bag



FBS8001 Desktop Laser source

- High stability of output power: 0.005db
- The output power can be adjusted independently
- Good wavelength stability
- High precision APC and ATC circuits
- LCD status display full parameters
- CWDM or DWDM or any other wavelength is optional
- Support 1~4 channel laser source

Items	Specifications
Output Channel	1~4 channels
Max Output Power	2mw/5mw/10mw/customized
Wavelength	1310nm/1550nm/customized
Laser Type	DFB/customized
Stability	±0.005dB(15 mins/10mw, 25°C)
	±0.025dB(8 hrs/10mw, 25°C)
Return Loss	>45dB
TEC Stability	±0.1°C
TEC Working Range	20~30°C
Optical Interface	FC/APC (or customized)
Output Adjustment	0.2mw(Coarse), 0.1mw(Fine)
Communication Port	RS232
Display	3.5-inch TFT color LCD
Power Supply	AC 90~260
Temperature	Working temp: 0~50°C, Storage temp: -40~80°C
Dimension/Weight	235×380×145mm/about 4kg

**FBP7001 Desktop Power Meter**

- 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

Items	Specifications
Wavelength Range	850~1700nm
Probe Type	InGaAs
Detector Size	Φ2.0mm
Test Range	+5~-75dBm
Linearity	±0.04dB(+5~-50dBm)
	±0.08dB(-50~-60dBm)
Uncertainty	±3%
Display Resolution	0.1/0.01/0.001dB
Power Supply	AC 220 (50Hz)
Temperature	Working temp: -5~40°C, Storage temp: -25~70°C
Dimension/Weight	235×300×96mm/about 5kg



OFI-3 Fiber Identifier

- Convenient and easy to use
- LED indicator is simple and clear
- Identification of 270/1k/2k Hz modulation frequency
- Direction and intensity indication of optical signal
- Natural light intensity calibration function

Items	Specifications
Fiber Adapter	RB0.25mm, RB0.9mm, RB3.0mm
Wavelength Range	900~1650nm
Frequency	CW/270Hz/1kHz/2kHz
Sensitivity	Min -50dBm
Sensitivity	1310nm @ 0.25mm: -20dBm, 0.9mm: -20dBm, 3.0mm: -20dBm
	1550nm @ 0.25mm: -30dBm, 0.9mm: -20dBm, 3.0mm: -30dBm
Display (LED)	Signal, Direction, Frequency, Intensity(5 grades), Low battery
Power Supply	2*AA battery
Working Temp	-10°C~+50°C
Storage Temp	-20°C~+70°C
Dimension/Weight	202L×62W×38H(mm) / 300g
Accessories	2*AA battery, Adapter(RB0.25mm, RB0.9mm, RB3.0mm), Carrying bag, Quick guide, Test report
Optional	RB2.0mm adapter



OFS&OFF Optical Fiber Finder

- Find the optical fiber without service interruption
- <1dB insertion loss
- Support 0.9/1.6/2/3mm diameter fiber
- Auto identify the testing signal and indicate the result by LED indication and the sound of beep
- Clear LED indication

Items	Specifications
OFS-1 Tone Generator:	
Frequency	1Hz low frequency
Insertion Loss	< 1dB
Applicable Fiber Type	G.652D, G.655, G.657A1, G.657A2
Applicable Fiber Diameter	0.9/1.6/2/3mm
OFF-1 Live Fiber Identifier:	
Wavelength	900~1650nm
Recognizable Signal Type	CW, 270Hz, 1kHz, 2kHz, 1Hz
Sensor Type	Φ1mm InGaAs
Adapter	RB0.25、RB0.9、RB2.0、RB3.0
Sensitivity	minimum -50dBm
Sensitivity Without Adapter Loss @1310nm	RB0.25: -20dBm, RB0.9: -20dBm, RB3.0: -20dBm
Sensitivity Without Adapter Loss @1550nm	RB0.25: -30dBm, RB0.9: -30dBm, RB3.0: -30dBm
Others:	
Power Supply	2*AA dry battery (continuous working time: 38 hours)
Working Temp	-10°C~+50°C
Storage Temp	-20°C~+70°C
Dimension/Weight	202L×62W×38H(mm) / 300g
Accessories	OFS-1 Tone Generator, OFF-1 Live Fiber Identifier, 4*AA dry batteries, Adapter (RB0.25mm, RB0.9mm RB2.0mm and RB3.0mm), Test report, Carrying bag, Quick guide





GW6700 Optical Cable Identifier

- Easy to find the target cable through sound and image
- High dynamic range, up to 80km test range
- High SNR >40dB
- Low power consumption
- With VFL function

Items	Specifications		
	GW6700A	GW6700B	GW6700C
Fiber Type	SM fiber		
Wavelength	1310nm or 1550nm		
Output Power	-15dBm	-3dBm	+9dBm
Max Test Distance	20km	60km	80km
SNR	>40dB		
VFL Test Distance	10km		
Optical Adapter	FC/APC		
Display	5.6 inch touch screen		
Output Mode	Video: Real-time waveform display		
	Audio: Dual channel audio output		
Power Supply	DC12V/5A		
Lithium Battery	7.4V/7.5Ah, continuous working time≥30h		
Working Temp	0°C~50°C		
Storage Temp	-20°C~70°C		
Dimension/Weight	255×155×72mm/1.5kg(with battery)		
Accessories	Power adapter, Headphone, Adapter, Standard patchcord, Coupler, Carrying bag, Quick guide, Test report		



OTS-4 Optical Talk Set

- Clear voice and low background noise
- With buzzer call function
- Support long distance communication
- 32 steps electronic volume adjustment
- Hands free speaker
- Support Tri-party communication

Items	Specifications
Wavelength	A: 1310nm, B: 1550nm
Fiber Type	SM fiber
Communication Mode	Full Duplex
Optical Adapter	FC/PC (other types of adapters can be customized)
Dynamic Range	50dB@1550nm
Power Supply	6*AA battery (can be used continuously for 40 hours)
Working Temp	-10°C~+50°C
Storage Temp	-20°C~+70°C
Dimension/Weight	240L×110W×40H(mm) / 545g
Accessories	Main units(Unit A and unit B), 2*headphones, 2*Carrying bags, 2*AC/DC charger, Quick guide, Test report
Optional	Clip-on coupler, Tri-party communication line



FIM-4 Fiber Microscope

- Zoomable lens
- High alignment accuracy
- 400X magnification
- Support printing report
- Adapters for different kinds of fiber

Items	Specifications
Magnification	400X
Resolution	1.0μm
Field of View	0.40*0.31mm
Working/Storage Temperature	-18°C~35°C
USB Interface	1.1/2.0
Sensor	1/3 decimetre, 2 million pixels
Weight	0.15kg
Dimension	235*95*30mm
Standard Accessories:	
FIM-4 Fiber Microscope	1pc
SC-PC-F/M (For SC-PC male adapter and female adapter)	1pc
FC-PC-P/M (For FC-PC male adapter and female adapter)	1pc
LC-PC-F/M (For LC-PC male adapter and female adapter)	1pc

**FIM-5 Fiber Microscope**

- Unidirectional focusing, quick and accurate imaging.
- 400X magnification, clear image
- Changeable high capacity batteries
- Photo, video and record tested fiber
- Brightness and Contrast adjustable

Items	Specifications
Fiber Microscope Probe:	
Magnification	400X
Resolution	<1μm
View of Field	X: 0.3165mm
	Y: 0.285mm
Focus Direction	unidirectional
Focus Speed	2~6S
Alignment	>98%
Output Port	Dual pins AV port
Weight	110g
Dimension	180L*22W*56H (mm)
Display:	
Screen Dimension	2.7 inch / 960*240
Enlarged Size	22mm
Picture	Single-framed 640x480JPG
Timer	5/15/30mins selections
Batteries	Li-ion 1800mAh
Languages	English/Chinese/Russian
TF Storage	Support 32G
Input/Output Port	AV / USB2.0
Weight	85g
Dimension	78L*22W*56H (mm)

**Standard Accessories:**

FIM-5 Fiber Microscope	1pc
2.7 inch display	1pc
SC-PC-F/M (For SC-PC male adapter and female adapter)	1pc
FC-PC-P/M (For FC-PC male adapter and female adapter)	1pc
LC-PC-F/M (For LC-PC male adapter and female adapter)	1pc
Li-ion batteries	2pcs
Charger	1pc
USB cable	1pc
Earphone cable	1pc
8G TF Reader	1pc
Soft case	1pc

**FIM-6 Fiber Microscope**

- Include Pass/Fail software according to IEC 61300-3-35
- Several tips available (Both female and male tips)
- Save tested analysis report on PC by USB device
- Anti-slip Grip design and Easy Focus
- Complied with RoHS
- CE/FCC approved

Items	Specifications
Magnification	260~400X (digital)
Filed of Vision	400um x 300um
Focus	manual, maximum 2mm in and out
Focus Direction	unidirectional
CCD	1/4" CMOS
Power Supply	computer USB electric power
Software	for Windows 8, 7 and XP
USB	2.0
Weight	150g
Dimension (without tip)	185mm (L) x 24mm (T)
Standard Accessories:	
FIM-6, including USB	1pc
Tip for female SC/PC and FC/PC adapters	1pc
Tip for female LC/PC adapter	1pc
Software (Pass/Fail Analysis)	1pc
Manual	1pc



FIM-7 Fiber Microscope

- WiFi and USB connection to smartphone and PC
- Pass/Fail analysis to IEC 61300-3-35 (only for PC software)
- Several tips available (Both female and male tips)
- Support saving inspected images and reports
- Complied with RoHS
- CE/FCC approved

Items		Specifications
Magnification		260~400X
Field of Vision		400um x 300um
Focus		manual, maximum 2mm in and out
WiFi		2.4GHz WiFi (IEEE 802.11b/g/n)
Power of Charger		110/220V@50/60Hz Charger or USB Cable with PC
Battery		3.7V 1300mA Rechargeable Lithium Polymer Battery
Battery Running Time		about 4 hours (continuous usage)
USB Cable		mini 5-pin to USB 2.0 for Windows XP, WIN7/8
Software	For PC	Pass/Fail Analysis to IEC 61300-3-35
	For Smartphone	Android App and iOS (Apple) App
Weight		170g
Dimension (without tip)		185mm (L) x 24mm (T)
Standard Accessories:		
FIM-7, including WiFi		1pc
AC battery charger, including USB to mini 5-pin cable		1pc
Tip for female SC/PC and FC/PC adapters		1pc
Tip for female LC/PC adapter		1pc
Software (Pass/Fail Analysis)		1pc
Manual		1pc



FIM-8 Fiber Microscope

- ON/OFF switch, bulb rotation knob
- 3 built-in magnification 160X, 180X and 200X
- Focus wheel, designed with film control dial to hold focus
- Universal 2.5mm adapter is suitable for FC, SC and ST connector ferrules

Items	Specifications
Magnification	200X
Power Supply	2*AA alkaline battery
Weight	0.35kg
Dimension	150(L)×45(W)×20(H)mm
Ordering Information:	
Part Number	Description
FIM-8 (N000527)	Fiber Microscope with 2.5mm adapter for 2.5mm ferrule(FC/SC/ST)
FIM-8-AD-1	adapter for 1.25mm ferrule(LC/MU)
FIM-8-AD-2	adapter for 2.5mm ferrule(FC/SC/ST)
FIM-8-AD-3	adapter for 3.17mm ferrule(SMA905)



FIM-9 Fiber Microscope

- Safety filter for eye protection
- Anti-slip design, rugged body with rubber grips
- Coaxial illumination of connector end face illumination

Items	Specifications	
Model	FIM-9-200	FIM-9-400
Magnification	200X	400X
Power Supply	3*AAA alkaline battery	
Light Source	White LED, rated for 10,000 hours	
Controls	Momentary on/off switch for light source and fine-focus control wheel	
Laser Safety Filter	Bulit-in IR filter	
Adapter Interface	Interchangeable for 2.5mm and 1.25mm ferrule connectors	
Weight	0.6kg	
Dimension	225mm(L)×32mm(diameter)	

**FIM-12 Fiber Microscope**

- HD 8/10.4 inch LED display for distinct and clear image shown.
- Smooth focus control, simple operation, stable testing results.
- Contamination and scratches can be clearly checked and resolution reaches 0.5um.
- X/Y axis adjustment for both horizontal and vertical control, broaden the view of field and stabilize image always in center.
- Average light spot in display gets feature of same resolution between fiber core and ceramic end face with little testing errors.
- Optional USB digital function to connect PC and software for end face data analysis based on IEC standard criteria.

Items	Specifications
Magnification/Resolution	400X/0.5um or 200X/0.75um
X/Y Adjustment	X-axis: 4mm Y-axis: 3.5mm
Light Source/Service Life	Coaxial Blue LED/50,000 hours above
LED Display Size	16.5*21 (8 inch) 26*22(10.4 inch)
LED Display Image Size	200X: 40mm 400X: 80mm
USB Digital Function	An USB Digital function can be optionally equipped with the FIM-12 to connect the PC directly, no need for additional power cord. The enlarge image can be directly viewed and check at Windows System. The USB connector supports 1.0/ 2.0 version.
Pass/Fail Software (optional)	1. Verification of Fiber end face quality, pass or fail judgment based on standard IEC/IPC criteria or customize. 2.Excel or PDF Report file generated to have scratch, spot, etc., defects measured and counted around the fiber end face. 3. Analyze Support in image, video and real-time inspection.



Standard Accessories:	
Name	Quantity
FIM-12-4 (400X) or FIM-12-2 (200X) Bench-top Fiber Microscope	1pc
8/10.4 inch LED display	1pc
1.25mm tip for 1.25mm connectors, LC/PC, MU/PC	1pc
2.5mm tip for 2.5mm connectors, SC/PC, FC/PC, ST/PC	1pc
12V Power Cord (BNC output)	1pc
5-pin aviation connector/BNC Connector	1pc
Optional Accessories:	
Name	Quantity
USB Function	1pc
Pass/Fail Software	1pc
Optional Tips for FIM-12 Fiber Microscope	
Name	Quantity
LC-PC-M (For LC/PC connector)	1pc
MU-PC-M (For MU/PC connector)	1pc
SC-APC-M (For SC/APC connector)	1pc
FC-APC-M (For FC/APC connector)	1pc
LC-APC-M (For LC/APC connector)	1pc
2.5M-APC (For 2.5mm connectors, SC/APC, FC/APC, ST/APC)	1pc
1.25APC-M (For 1.25mm connectors, LC/APC, MU/APC)	1pc



FIM-17 Fiber Microscope

- WiFi and USB connection to smartphone and PC
- Pass/Fail Analysis to IEC 61300-3-35 (only for PC software)
- Several tips available (Both female and male tips)
- Support saving inspected images and reports
- Real-time report in field through smartphone



Items	Specifications
Magnification	400X
Resolution	<1.0µm
Field of View	X: 0.3487mm Y: 0.2632mm
Laser Source	Blue LED
Focus Method	Unidirectional manual
Focus Time	1~5 seconds
Snapshot Button	yes
WiFi and USB Switch Button	yes
Communication Port	Micro USB
Connection Standard	WiFi 802.11 and USB2.0
Wireless Frequency	2.4GHz
Wireless Transmission Distance	20m
Smartphone Compatibility	Android 4.4 and above; IOS 8.0 and above
Voltage	5V
Battery	3100mAh Lithium battery
Charging Time	≤5h
Items	Specifications
Testing Time	≥5h
Dimension	19*5*3cm
Weight	0.175kg
Working Temperature	-10°C~50°C
Storage Temperature	-20°C~60°C
Humidity	<90% (non-condensing)
Standard Accessories:	
FIM-17 Fiber Microscope	1pc
SC-PC-F/M (For SC-PC male adapter and female adapter)	1pc
FC-PC-P/M (For FC-PC male adapter and female adapter)	1pc
LC-PC-F/M (For LC-PC male adapter and female adapter)	1pc
USB cable	1pc





TLP-3C 2M Transmission Analyzer

- Full-featured measurements to 2M, Datacom
- Smart navigation mode and multi-language displays
- Extensive error and alarm generation, detection and indication
- Histograms analysis of alarm and error events
- Save/Recall of up to 7 user-defined setups and 70 sets of results
- Built-in Li rechargeable battery and smart charger circuit
- Ungradable software via an integrated RS232C interface
- Test results uploaded, conserved and printed by PC Manager software

Items	Specifications	
2M	Internal Clock	2048kb/s ±10ppm
	Frequency Deviation	±999ppm
	Line Interface	75Ω (Unbalanced), 120Ω (Balanced); High Input Impedance >2KW
	Line Code	HDB3, AMI
	Framing	Unframed, PCM30, PCM30CRC, PCM31, PCM31CRC
	Receive Sensitivity	>-43dB
	Tx Clock Source	Internal, Interface and External 2MHz clock or signal
	Pulse Mask Measurement	Comply with G.703
	Jitter Measurement	Comply with O.172
	Frequency Measurement	Accuracy: ±1Hz
	Offset Measurement	Accuracy: ±1ppm
		Range: -999ppm~+999ppm
	VF Injection	Frequency: 200MHz~3400MHz, Step: 10Hz
		Level: -60dBm~+3dBm
2M	VF Measurement	Frequency: 200MHz~3400MHz
		Accuracy: ±1Hz
		Level range: -60dBm~+3.14dBm
		-60dBm~-21dBm, accuracy: ±2.87dBm
		-20dBm~+3.14dBm, accuracy: ±0.21dBm
G.703 CO	Delay Measurement	Accuracy: ±1us
	Line Rate	64kb/s ±1000ppm
	Line Interface	120Ω, Balanced
	Line Code	AMI



Items	Specifications	
Datacom	Line Interface	V.24, V.35, V.36, X.21, RS-449, RS-485, EIA-530, EIA-530A
	Data Rate	ASYN: C300, 600bit/s, 1.2, 2.4, 4.8, 7.2, 9.6, 19.2, 38.4kb/s
		SYNC: C300, 600bit/s, 1.2, 2.4, 4.8, 7.2, 9.6, 19.2, 38.4kb/s
		N×64kb/s (N=1~32), 4M, 8Mkb/s
Test Patterns	PRBS	$2^{23}-1, 2^{20}-1, 2^{15}-1, 2^{11}-1, 2^9-1, 2^6-1$
	Fixed Code	1111, 0000, 1010
	16-BIT	User Programmable Word
LED Alarm Indicators	Signal Loss, AIS, Frame Loss, MFrame Loss, Pattern Loss, Remote Alarm, Error, Clock Slip.	
Error Injection	Type: BIT, FAS, CRC4, CODE, E-BIT	
	Single, Fixed Rate: $10^{-2}, 10^{-3}, 10^{-4}, 10^{-5}, 10^{-6}, 10^{-7}$	
Performance Analysis	ITU-T G.821, G.826 and M.2100	
Display	320×240 pixel backlit monochromatic LCD	
Serial Port	RS-232C	
Rechargeable Batteries	5×1.2V AA NiMH batteries, continuous working for 6 hours	
Recharge Time	Approx. 2 hours	
AC Power Adapter	Input: 100V~240VAC, 50/60Hz Output: 12VDC/1.5A	
Test Manager Pro	WIN98/ME/NT/2000/XP	
Dimensions	L×W×H (200mm×160mm×45mm)	
Operating Temperature	0°C~50°C	
Storage Temperature	-20°C~+70°C	
Humidity	5%~95% non-condensing	

Standard Items	Quantity	Standard Items	Quantity
TLP-3C 2M Transmission Analyzer	1pc	Simulation software	1pc
75Ω BNC/L9 E1 test cable	2pcs	Carrying case	1pc
BNC/BNC cable	1pc	User's manual	1pc
RS232 serial upgrading cable	1pc	Warranty card	1pc
DATA converting line (36PIN to 44PIN)	1pc	Certificate of conformity	1pc
X.21 testing line	1pc	V.35 testing line	1pc
V2.4 testing line	1pc	V.11 testing line	1pc
AC adapter	1pc		
Optional Items	Quantity	Optional Items	Quantity
120 testing line	2pcs	64K testing lines	1pc





GD300DQ TV Signal Level Meter

- Accurate QAM testing: digital average power, MER, BER
- Support multiple DVB mode: 16QAM, 32AM, 64QAM, 128QAM, 256QAM
- Single channel/Frequency simulated power levels testing
- Video and audio signal power levels testing
- V/A testing. Show the frequency of video and audio. Field intensity and power level difference simultaneously.
- QAM View includes BER, MER, and constellation

Items	Specifications
Channel/Frequency index	
Frequency range	5MHz-862MHz
Precision	50ppm
Resolution	10KHz
Measurement band width	280KHz
Frequency step	50KHz, 100KHz, 500KHz
Channel type	
Analog TV	TV
Digital TV	16/32/64/128/256 QAM
Frequency/channel	SIGL
Analog power level testing	
Measuring range	25dBuV-120dBuV
Precision	±1.5dB
Resolution	0.1dB
Detection method	Peak value detection
Input impedance	75Ω
Digital power level testing	
Measuring range	25dBuV-110dBuV
Precision	±1.5dB
Resolution	0.1dB
Detection method	Average value detection
Input impedance	75Ω



Items	Specifications
Voltage testing	
Input range	0-80V(AC/DC)
Precision	±2V
Resolution	0.1V
Digital channel	
Modulation mode	Comply with DVB-C/ITU J83-A
QAM mode	16/32/64/128/256 QAM
Symbol rate	1MS/S-7MS/S
Band width	Set by user
MER	22-39dB
Precision	±2dB
BER	1E-4-1E-9
Carrier-noise ratio(C/N)	
Signal input range	>70dBuV
Measuring range	20dB-50dB
Precision	±2dBuV
Resolution	0.5dB
Spectrum analysis	
Frequency Range	5MHz-862MHz
Resolution	100KHz
Precision	50ppm
Power levels range	20dBV-120dBV
Power levels resolution	0.1dB
Power level precision	±1.5dB
Dynamic range	60dB
Input impedance	75Ω
RBW	300KHz
Testing band width	6,12,62MHz,All range scan
Slope testing	
Number of channels	5
Resolution	±0.1dB





Items	Specifications
General specifications	
Audio output	Built-in speaker
Power supply	Li-ion battery(3.7V,2000mAh),5V AC/DC Adaptor/Charger
Charging time	Less than 5 hours (can work about 8 hours)
Dimension	223*110*47(mm)
Net weight	0.43kg
Working temperature	-10°C-50°C
Standard accessories	
Carrying Bag, AC/DC Adaptor, Battery, Software, USB cable.	



CL1400 Pipeline and Cable Locator

- Detect the route of underground pipeline and cable
- Measure the burial depth of underground pipeline and cable
- Detect and locate the insulation fault point of the underground pipeline and cable
- Identify the goal pipeline and cable under multiple underground pipelines and cables situation

Items	Specifications
Transmitter	
Signal Frequency for Injection Method	480Hz, 7.7KHz, 31KHz, 61KHz
Signal Frequency for Induction Method	31KHz, 61KHz
Signal Frequency for Clamping Method	31KHz
Signal Frequency for Fault Finding	480Hz
Output Voltage	0-400Vp-p adjust according to the insulation condition
Output Wave Shape	sine wave
Power Supply	11.1VDC 4.4AH Li-battery
Maximum Output Power	10W
Receiver	
Power Loss	<1W
Power Supply	11.1VDC 1.8AH Li-battery
Max. Burial Depth for Detecting	4.5 meters (normal condition)
Tolerance of burial Depth for Detecting	±0.05H ±5cm ("H" is pipeline burial depth)
Tolerance of Route for Detecting	≤5cm
The Effective Length under Detecting Pipeline Route and Depth with Injection Method	≥10Km (normal condition)
The Effective Length under Detecting Pipeline Route and Depth with Induction Method	≥3Km (normal condition)
The Effective Length under Detecting Pipeline Route and Depth with Clamping Method	≥6Km (normal condition)
Insulated Fault Detecting	≥2 MΩ





Items	Specifications
General specifications	
Operating Temperature	-20°C~+50°C
Storage Temperature	-40°C~+70°C
Relative Humidity	10%~90%
Atmospheric Pressure	86~106Kpa
Environmental Noise	≤60dB
Weight	3.4kg (Transmitter)
	2.6kg (Receiver)
Dimensions	348×239×175mm (Transmitter)
	648×260×130mm (Receiver)
Standard accessories	
Transmitter	1pc
Receiver	1pc
Carrying case	1pc
User manual	1pc
Charger	2pcs
Earthing stick	1pc
Signal output line	1pc
Inductive clamp	1pc
Stethoscope	1pc
Certificate	1pc
Ordering information	
Model	Description
CL1400 Pipeline and Cable Locator	With inductive clamp and stethoscope
CL1400A Pipeline and Cable Locator	With inductive clamp, stethoscope and Fault Finding Holder
CL1400B Pipeline and Cable Locator	With inductive clamp, stethoscope and GPS



FCAA-100 Cable&Antenna Analyizer

- Frequency range: 25MHz to 4GHz; suitable for 2G/3G/4G/WiMAX system etc.
- Dynamic Range up to 60dB
- Intelligent limit /marker /curve calculations
- More than 8 hours long battery life
- 7 inch color LCD touch screen
- Optimized batch file management: edit/delete/filter
- Excellent Man-Machine interface for easy operation

Items	Specifications
Frequency Range	25MHz - 4000MHz
Frequency Resolution	100kHz
Frequency Accuracy	+/-25ppm
Output Power	0dBm(typ.)
Measurement Speed	3.5ms/point
Data Points	137, 251, 551, 1103
Anti-jamming Capability	
Frequency	-5dBm
Channel	+17dBm
Directivity	42dB (after calibration)
Return Loss	
Return Loss Range	0 - 60 dB
Return Loss Resolution	0.01dB
VSWR	
VSWR Range	1 - 65
VSWR Resolution	0.01
Cable Loss	
Cable Loss Range	0 - 30dB
Cable Loss Resolution	0.01dB



Items	Specifications
Distance-to-Fault	
Distance-to-Fault Return loss Range	0 - 60 dB
Distance-to-Fault SWR Range	1 - 65dB
Measuring Length	1500m
Resolution Ratio	Where V_p is the cable's relative propagation velocity where F_2 is the stop frequency and F_1 is start frequency
Data Points	137, 251, 551, 1103
General information	
Connector Type	N - Type female
Input Impedance	50 Ohm
Display	7 inch resistor touch screen, resolution 800×480
Data Interface	One USB Host Port One USB Device Port One 10M/100M Adaptive LAN Port
Memory Space	>2000 traces
Internal Battery	11.1V 7800mAh Rechargeable Lithium Battery
External Adapter	110 - 240V, 50 - 60Hz, AC input; 16V, 3.75A, DC output
Operating Temp. Range	-10°C - +50°C
Storage Temp. Range	-40°C - +70°C
Humidity	0 - 85% (Non-Condensing)
Weight	2.5kg (Suttle)
Dimensions (L x W x H)	290×175×75mm
Standard accessories	
Lithium Battery, AC Adapter, CD(PC Software, User Manual), Carrying Case, T-type Calibration Kits, Quick Reference, Warranty card	
Optional	
TPM Module (Optional)--RF Terminal Power Meter SPM Module (Optional)--In Line Digital Frequency Spectrum Power Meter	



FET-100 Gigabit Ethernet Tester

- Electrical port and optical ports with rate at 10/100/1000Mbps
- Smart and durable, field application ready
- 5 inch LCD color touch screen, smart navigation menu
- Results can be shown graphically and numerically
- RFC2544 auto test, quickly find the fault
- Full Y.1564 test
- LED indicator light, on-screen display and ICON
- Large capacity memory to save settings and test results
- Embedded software to easy upgrade

Items	Specifications
Testing Port	Dual-RJ45 port:10/100/1000 BASE-T Dual-SFP port: 1000BASE-SX/LX/ZX
Standard	IEEE 802.3 ,RFC1242,RFC2544,Y.1564
Connector	RJ-45/USB
LED Indicator	POWER,PORT1LINK/ACT,PORT2 LINK/ACT,ALARM 800×480 color LCD touch screen
Display	800×480 color LCD touch screen
Battery	Lithium battery / AC adapter
Working Time	4 hours continuous operation
Operating Temperature	0°C~50°C
Relative Humidity	0 to 95% (non-condensing)
Weight	800g
Dimension	233×110×64mm



FXGT-200 10GEthernet Tester

- Smart and durable, field application ready
- 7 inch HD color touch screen, sun readable
- User-friendly user interface
- PC remote control
- Test profiles and data management, USB/FTP transfer
- Comprehensive testing for Ethernet testing
- Lithium battery up to 4 hours continuous testing

Items	Specifications		
Optical Interface	Two GigE Ports		
	1000Base-SX	1000Base-LX	1000Base-ZX
Wavelength(nm)	850	1310	1550
Laser/Connector/Transceivers type	VCSEL/LC/SFP	1000Base-ZX	DFB/LC/SFP
Electrical Interfaces	Two Ports:10/100BaseT Half/Full Duplex and 1000BaseT Full Duplex, Choose straight or crossover cables		
	10BaseT	100BaseT	100BaseT
Connector	RJ-45	RJ-45	RJ-45
SFP+ Optical Interface (10G)	Two 10GigE Ports 10GBase-SR/SW	Two 10GigE Ports 10GBase-LR/LW	Two 10GigE Ports 10GBase-ER/EW
Wavelength (nm)	850	1310	1550
Laser/Connector/Transceivers type	VCSEL/LC/SFP+	DFB/LC/SFP+	CML/LC/SFP+



Items	Specifications
General specifications	
Display	7 inch color TFT touch screen (Resolution 960×480)
Data storage	8GB
Interface	USB 2.0 port, RJ-45 LAN
Battery	Rechargeable Lithium battery, 4 hours continuous operation
Power Supply	AC/DC Adapter; Input 100 to 240V AC, 50/60Hz, 2A(Max.); Output 24V DC 90W
Dimension	282×186×75mm
Weight	2.9Kg
Standard accessories	
Battery, AC adapter, Software CD, Carrying case, Warranty card, User Manual	
Optional	
CAT6 RJ-45 Gigabit Ethernet Cable LC-LC Duplex Patchcord 10G SFP+ Optical Module(Wavelength/Transmission Distance:850nm/550m,1310nm/10km,1550nm/40km) 1.25G SFP Optical Module(Wavelength/Transmission Distance:850nm/550m,1310nm/10km) OAM Test Function Module	



★★★ NOTES ★★★



