

SML-MPSL6 使用说明书

SML-MPSL6 Operating Instructions



- SML-MP6 (光功率测试, 网线通断测试)
- SML-MPS6 (光功率测试, 红光源测试, 网线通断测试)
- SML-MPL6 (光功率测试, 网线通断测试, 网线长度测试)
- SML-MPSL6 (光功率测试, 红光源测试, 网线通断测试, 网线长度测试)

- SML-MP6 (Optical Power Testing, Network Cable Testing)
- SML-MPS6 (Optical Power Testing, Red Light Source Testing, Network Cable Testing)
- SML-MPL6 (Optical Power Testing, Network Cable Testing, Network Cable Length Testing)
- SML-MPSL6 (Optical Power Testing, Red Light Source Testing, Network Cable Testing, Network Cable Length Testing)

一、 技术规格

Technical Specifications

型号/功能	光功率测试 -70—+3dBm -50—+20dBm	红光源测试 5 公里/15 公里 /25 公里	网线通断测试	网线长度测试
SML-MP6	√		√	
SML-MPL6	√		√	√
SML-MPS6	√	√	√	
SML-MPSL6	√	√	√	√

Model/Function	Optical Power Testing -70—+3dBm -50—+20dBm	Red Light Source Testing 5 km /15 km /25 km	Network Cable Testing	Network Cable Length Testing
SML-MP6	√		√	
SML-MPL6	√		√	√
SML-MPS6	√	√	√	
SML-MPSL6	√	√	√	√

显示屏	LCD128*64 液晶显示屏（有效范围 48*32mm）		
工作环境温度	-10℃—+60℃		
工作环境湿度	<75%		
可测波长范围	800nm—1600nm		
探头类型	InGaAs		
不确定度	±5%		
标准波长 (nm)	850、980、1300、1310、1490、1550		
显示分辨率	线性功率 0.1%，对数功率 0.01dBm		
自动关机时间	30 分钟不操作，可调节		
背光显示时间	30 秒钟不操作，可调节		
电池	3.7V 1000mAh 锂电池		
测量范围	-70dBm—+3dBm -50dBm—+20dBm		
测量灵敏度	0.01nW		
红光测试距离	5km、15km、25km（可选择）		
可测线材	双绞线（网线）		

网线测试距离	<1200 米
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Display Screen	LCD Display (Effective Range: 48*32 mm)
Operating Environment Temperature	-10℃—+60℃
Operating Environment Humidity	<75%
Wavelength Measurement Range	800nm—1600nm
Probe Type	InGaAs
Uncertainty	±5%
Standard Wavelength (nm)	850、980、1300、1310、1490、1550
Display Resolution	Linear Power 0.1%, Logarithmic Power 0.01dBm
Auto Power Off Time	Adjustable, 30 minutes of inactivity
Backlight Display Time	Adjustable, 30 seconds of inactivity
Battery	3.7V 1000mAh Lithium Battery
Measurement Range	-70dBm—+3dBm -50dBm—+20dBm
Measurement Sensitivity	0.01nW
Red Light Testing Distance	5km、15km、25km(Selectable)
Supported Cable Type	Twisted Pair (Ethernet Cable)
Network Cable Testing Distance	<1200 米

二、 功能特性 Features

1. 全新用户自校准功能。
2. 多波段快速测量。
3. 对数功率测量 (dBm) 或线性功率测量 (nW)。
4. 相对功率测量 (dB)。
5. 电池电量指示功能。
6. 自动关机时间为 30 分钟 (可调节)。
7. 背光显示时间为 30 秒 (可调节)。
8. 手持式人体工学设计、图形点阵 LCD 液晶显示。
9. 独到的通用接口设计，FC/SC/ST 等接口通用，无需复杂转换。
10. 网线通断测试功能。
11. 网线长度测试功能。(MPL6, MPSL6 独有功能)

1. New self-calibration function for users.
2. Fast measurement across multiple wavelength bands
3. Measurement of logarithmic power (dBm) or linear power (nW)
4. Relative power measurement (dB)
5. Battery level indicator
6. Auto power off after 30 minutes (adjustable)
7. Backlight display for 30 seconds (adjustable)
8. Handheld ergonomic design with graphical LCD display

- 9. Universal interface design, compatible with FC/SC/ST and other interfaces without complex conversions
- 10. Network cable continuity testing
- 11. Network cable length testing (exclusive to MPL6, MPSL6)

三、 使用说明

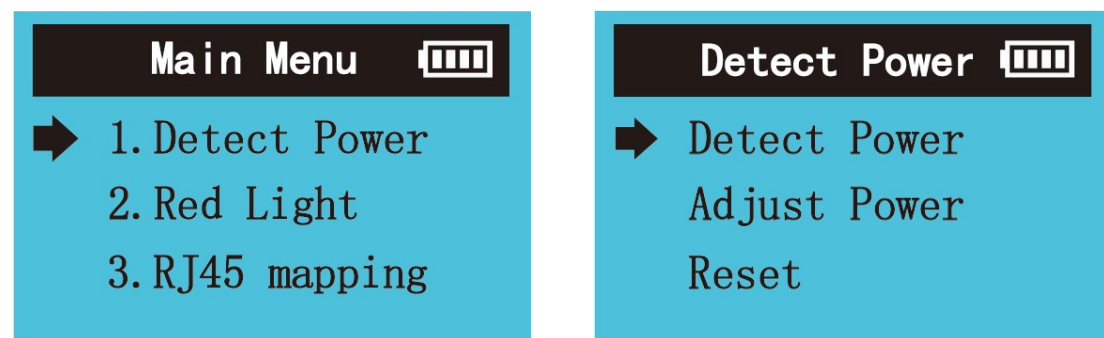
Instructions

3.1 测量试试功率（光功率测试）

3.1 Measurement of Power Level (Optical Power Testing)

长按 2 秒开机键后，在“功能选择”界面中按上下键选择“测量实时功率”，按“ENTER”键进入“测量实时功率”界面。

Press and hold the power button for 2 seconds, then use the up and down keys to select "Real-time Power Measurement" in the "Function Selection" interface. Press the "ENTER" key to enter the "Real-time Power Measurement" interface.



Detect Power: 实时光功率计测试。

Adjust Power: 手动校准光功率，在用户测试功率时，若数据有少量偏差，可通过“Adjust Power”进行手动校准。

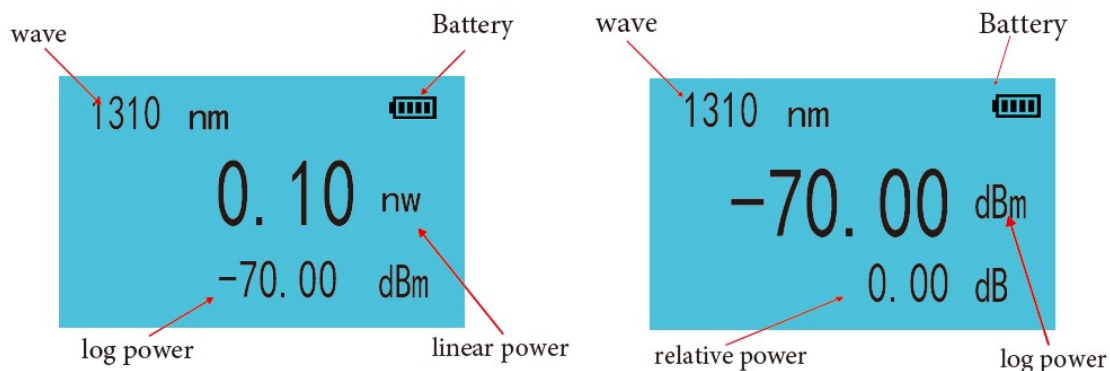
Reset: 恢复默认参数，可将光功率数值恢复至系统初始的数值。
选择“Detect Power”，按“ENTER”键进入光功率计测试界面。

Detect Power: Real-time optical power measurement.

Adjust Power: Manual calibration of optical power. If there is a slight deviation in the measured power, it can be manually calibrated using "Adjust Power."

Reset: Restore default parameters and reset the optical power value to the system's initial value.

Select "Detect Power" and press the "ENTER" key to enter the optical power measurement interface.



此时系统开机默认进行光功率线性和对数功率测量，如图所示。若按一次上键系统切换到相对功率测量状态，此时系统界面如图所示，即进行光功率的对数和相对功率测量。

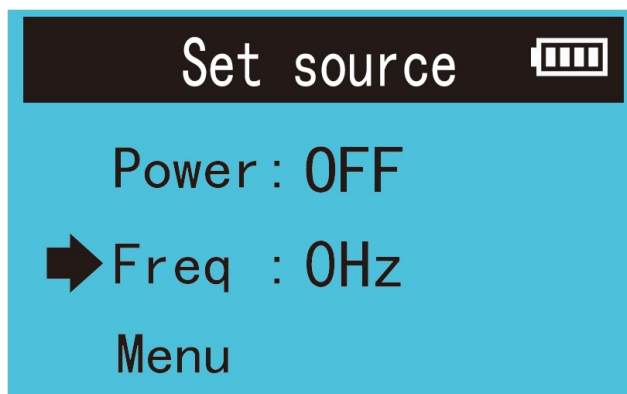
在“测量实时功率”界面下按下键，波长将在 850nm、980nm、1300nm、1310nm、1490nm、1550nm 六个波段中循环变化。系统开机默认为 1310nm。

By default, the system performs linear and logarithmic power measurements, as shown in the figure. Press the up key once to switch to relative power measurement mode, as shown in the figure, which performs logarithmic and relative power measurements.

Press the down key in the “Real-time Power Measurement” interface, and the wavelength will cycle through six bands: 850nm, 980nm, 1300nm, 1310nm, 1490nm, and 1550nm. The system defaults to 1310nm at startup.

3.2 光纤寻线定位

3.2 Fiber Optic Cable Tracing and Locating



“Power”：按上下键选择“Power”，按“ENTER”键确认。开启光源后显示屏左上角出现闪烁的  提示图标。

“Freq”：光纤寻线有两种频率选择，0HZ、1HZ；若是 0HZ 档，则激光常亮，若是 1HZ 档，则激光闪亮。按上下键选择“Freq”，按“ENTER”键选择 0Hz 或 1Hz；

若此时在被测光纤的另一端有光纤射出可见的 650nm 红色光，测发红光的那根光纤与接在寻线仪上的那根光纤是同一根光纤，同时表明该光纤中间没有开路。若另一端没有看到可见红色光，说明被测光纤中间已经断开。

注意：在光纤寻线时，切勿用光纤射出的激光直射人眼，否则对人眼造成的伤害，本公司概不负责。

"Power": Use the up and down keys to select "Power" and press the "ENTER" key to confirm. The blinking prompt icon  will appear in the top left corner of the display when the light source is turned on.

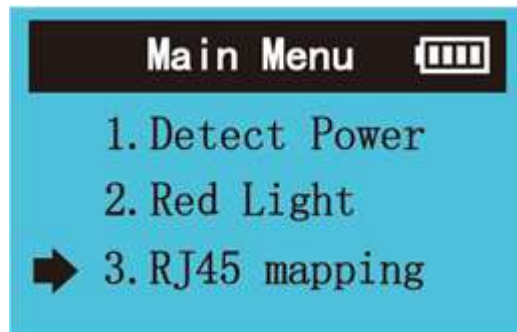
"Freq": There are two frequency options for fiber optic cable tracing: 0Hz and 1Hz. If 0Hz is selected, the laser remains constantly on; if 1Hz is selected, the laser flashes. Use the up and down keys to select "Freq" and press the "ENTER" key to choose 0Hz or 1Hz.

If there is visible red light (650nm) emitted from the other end of the tested fiber optic cable, it indicates that the fiber optic cable used for tracing is the same as the one connected to the fiber optic locator, and there is no break in the middle of the cable. If no visible red light is seen at the other end, it indicates that the tested fiber optic cable is broken in the middle.

Note: When tracing fiber optic cables, avoid direct exposure of the laser to the eyes, as it can cause harm. The company assumes no responsibility for eye damage caused by direct exposure to the laser.

3.3 网线连通测试

3.3 Network Cable Continuity Testing



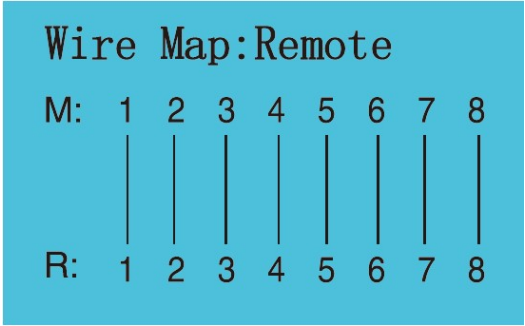
在开机界面，按上下键选择“RJ45 mapping”，将待测网线一端连接主机的网线端口，另一端连接远端的网线端口，按“ENTER”键开始测试。

On the startup screen, use the up and down keys to select "RJ45

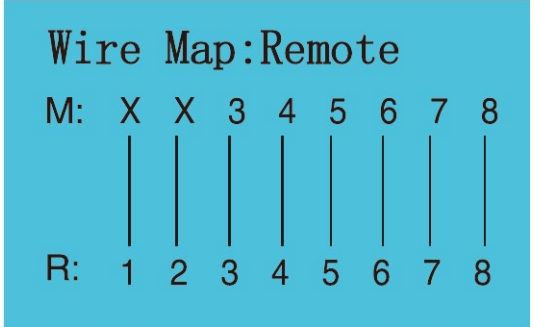
mapping.” Connect one end of the cable to the network cable port of the main unit and the other end to the remote network cable port. Press the “ENTER” key to start the test.

网线测试结果说明：

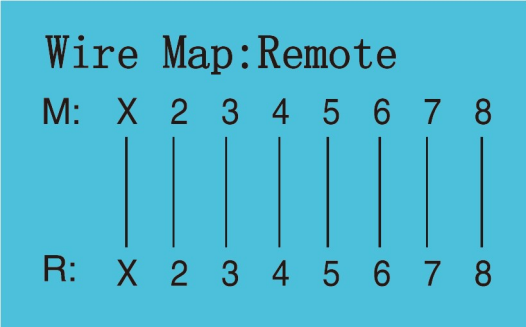
Network cable testing results:



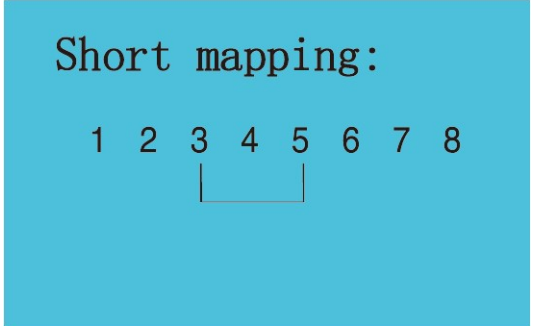
M-R 网线测试结果正常
M-R network cable test result: Normal



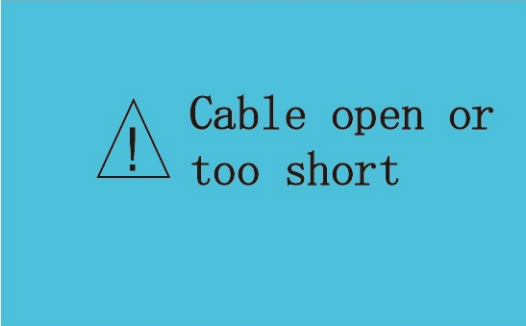
M 端 12 位置开路
Open circuit at position 12 of the M end



线缆 1 位置中部开路
Open circuit in the middle of cable at position 1

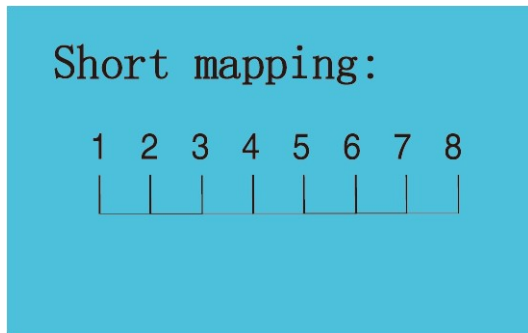


位置 3 和 5 处短路
Short circuit between positions 3 and 5



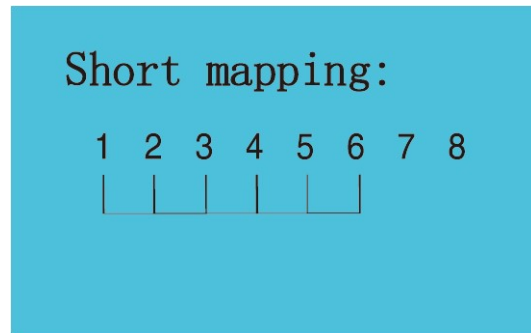
线缆未接好或过短
Poorly connected or short network cable

本机与非 POE 交换机连通测试：（不能连接 POE 交换机，否则会烧坏机器）
Connectivity Test with the Main Unit and Non-POE Switch (Do not connect to a POE switch, as it may damage the device):



交换机该端口状况良好

Port on the switch is in good condition

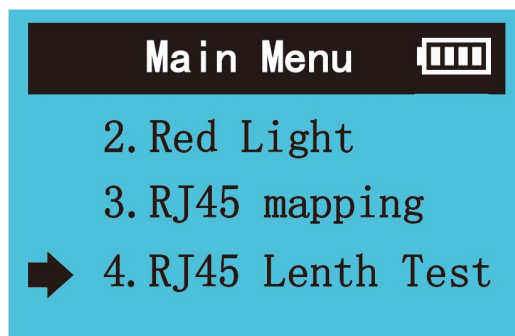


交换机该端口 7 号和 8 号线断路

Lines 7 and 8 on the switch port are disconnected

3.4 网线长度测试

3.4 Network Cable Length Testing



1. 开机后进入在主菜单界面，按上下键选择“网线长度测试”。

2. 将双绞线一端接入主机的网线端口，另一端无需连接（或接在远端的网线端口），按“ENTER”键开始测试。

1. After powering on, enter the main menu interface and use the up and down keys to select "Network Cable Length Testing."

2. Connect one end of the twisted pair cable to the network cable port of the main unit (or connect it to the remote network cable port), and press the "ENTER" key to start the test.

长度测试结果说明：

Length testing results:

1	2	M-R	99.9m
3	6	M-R	100.1m
4	5	M-R	99.8m
7	8	M-R	100.1m

M-R 测试方式结果:正常

1	2	Open	99.9m
3	6	Open	100.1m
4	5	Open	99.8m
7	8	Open	100.1m

Open 测试方式结果:正常

M-R test mode result: Normal

1 2	Open	99.9m
3	Open	40.1m
6	Open	99.0m
4 5	Open	99.8m

此线缆第 3 芯在 40m 处断掉
Core 3 of this cable is broken at 40m

Open test mode result: Normal

Short mapping:							
1	2	3	4	5	6	7	8

线芯 3 和 5 处短路
Short circuit between cores 3 and 5

3.5 线缆参数校准与调取

3.5 Cable Parameter Calibration and Retrieval

线缆参数的校准与调取的背景：由于市面上线缆的材质很多都是非标线材，直接测试时由于线材不同的原因会导致测试长度的结果会有一定的误差，为了保证线缆长度的精确度，实际测试前会要求用同材质的线缆进行校准。

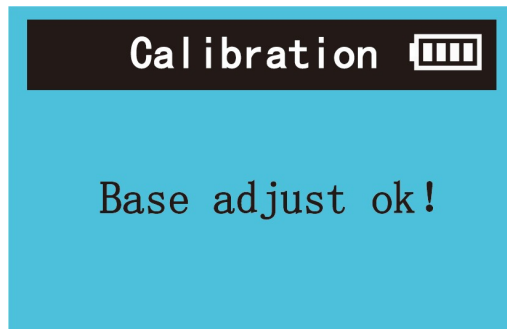
Background of cable parameter calibration and retrieval: Due to the various non-standard cables available on the market, testing different cables directly may result in measurement errors. To ensure the accuracy of cable length measurement, it is necessary to calibrate with a cable of the same material before actual testing.

测试方法

Calibration method:

Main Menu 
4. RJ45 Lenth Test
➡ 5. Calibration
6. Load Setting
— Base Adjust —
11.3m

Calibration 
➡ RJ45
Back
Calibration 
➡ Memory1
Memory2
Memory3



在主菜单按上下键选择“Calibration”，按“ENTER”进入线缆长度校准后，选择线缆类型：“RJ45”。

校准方法：

用一根与待测线缆相同材质且已知长度（10 米或 10 米以上）的线缆进行参数校准测试，按上下键将测试结果调整到已知长度线缆的实际长度，然后按“ENTER”保存至“Memory”（1、2 或 3）。

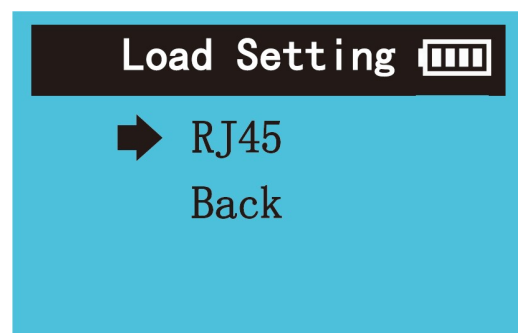
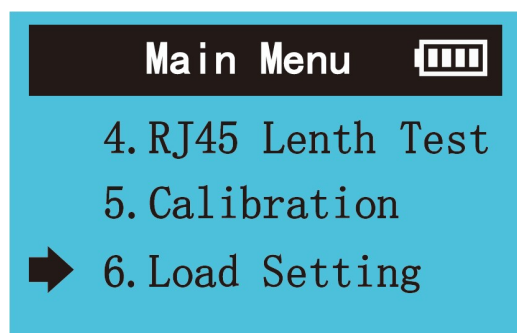
参数保存成功后，在“Load Setting”选项中调取出“Memory”（1、2 或 3）中已存好的参数。调取成功后再进行待测线缆长度测试，测试结果会更精确。

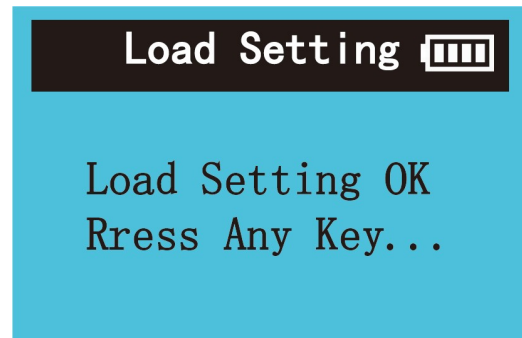
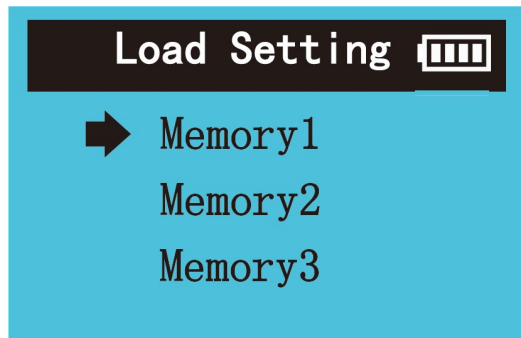
In the main menu, use the up and down keys to select “Calibration” and press the “ENTER” key to enter the cable length calibration. Select the cable type: “RJ45.”

Calibration method:

Use a cable of the same material and known length (10 meters or more) to perform parameter calibration. Use the up and down keys to adjust the test result to the actual length of the known cable and press the “ENTER” key to save it in “Memory” (1, 2, or 3).

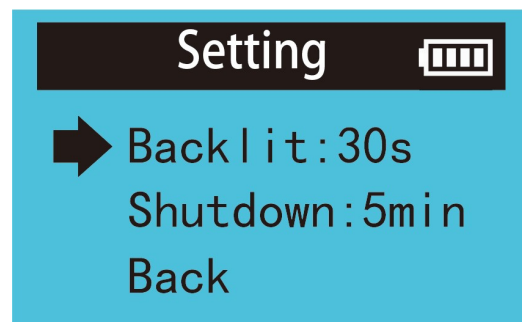
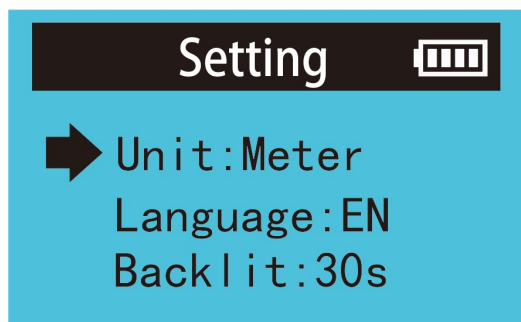
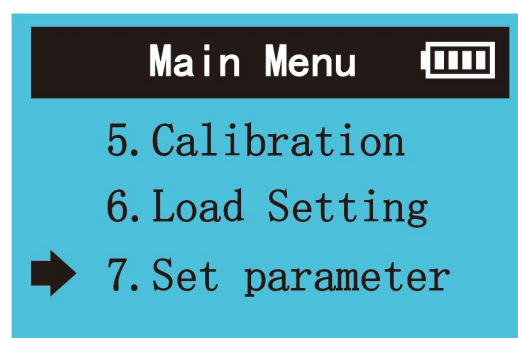
After successful parameter saving, retrieve the saved parameters from “Memory” (1, 2, or 3) in the “Load Setting” option. After successful retrieval, perform the cable length test, and the results will be more accurate.





3.6 参数设置

3.6 Parameter Settings



在主菜单按上下键选择“Set parameter”，按“ENTER”键进入参数设定。
在设置界面按上下键选择需要修改参数，按“ENTER”键修改箭头指向参数的值。

Unit: 单位，可选择长度单位：米、英尺、码。

Language: 语言，可选择中文和英文。

Backlit: 背光时间，可调节时间有 30 秒、1 分钟、5 分钟、永不休眠。

Shutdown: 关机时间，可调节时间有 5 分钟、10 分钟、30 分钟、永不休眠。

In the main menu, use the up and down keys to select "Set parameter," and press the "ENTER" key to enter the parameter settings.

In the settings interface, use the up and down keys to select the parameter to be modified, and press the "ENTER" key to modify the value indicated by the arrow.

Unit: Unit selection, choose length units: meters, feet, yards.

Language: Language selection, choose between Chinese and English.

Backlit: Backlight display time, adjustable options include 30 seconds, 1 minute, 5 minutes, and never sleep.

Shutdown: Auto power-off time, adjustable options include 5 minutes, 10 minutes, 30 minutes, and never sleep.

四、 维护及保养

Maintenance and Care

1、经常保持传感器端面清洁，做到无尘，无污染，不使用不清洁、非标准的适配器接头，不要插入抛光面差的端面，会损坏传感器端面。

2、光功率计不用时，立即盖好防尘盖，保护端面清洁，防止传感器长期暴露在空气中附着灰尘而造成测量误差。

3、定期清洗传感器端面。

4、小心插拔光适配器接头，避免端口造成刮痕。

1、 Keep the sensor end face clean, free from dust and contamination. Do not use unclean or non-standard adapter connectors, and avoid inserting fiber ends with poor polishing, as this may damage the sensor end face.

2、 Immediately cover the optical power meter with a dust cover when not in use to protect the end face and prevent measurement errors caused by dust accumulation during prolonged exposure to air.

3、 Regularly clean the sensor end face.

4、 Handle the insertion and removal of fiber adapter connectors with care to avoid scratching the ports.