9-in-1 FTTH OTDR MW6422
User Manual

Thank you for choosing our products!

Thank you very much for choosing and using our products. Our target goal is to offer you our excellent service. We will provide you with all-round technical support and after-sales service.

Warning!

OTDR and the Visual Fault Locator are laser device, the user should avoid looking directly into the laser output. Users can not gather more energy with a microscope magnifying glass and other equipment to observe light output port, the laser on the retina can cause permanent eye damage.

Catalog

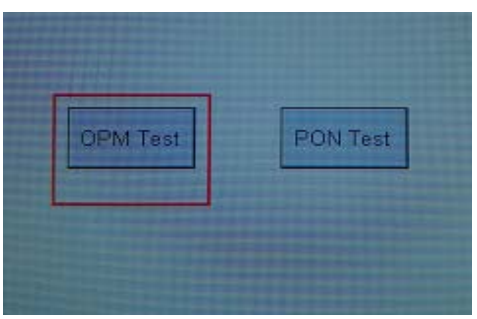
I. Function Menu

1、 Optical power meter
2、 PON Power meter
3、 Visual Fault Locator
4、 OTDR
5、 LDTR
6、 Network test
7、 Internet speed test (1000M)
8、 Line test
9、 Line search
10、 Settings help
11、 Trouble shooting

II. Instruction

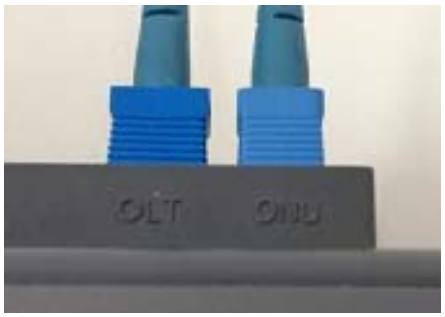
Power on: Long press the power button, the display shows the main menu successfully, touch function icon to enter the corresponding test screen, or press the arrow buttons to select the icon function, press “OK” to enter the measurement interface, long press “back” to return to the main menu, press “MENU” to enter into the configuration parameters, long press the “power” button to switch it off.

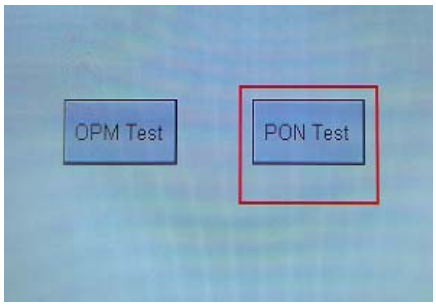
1. Optical power meter:



Test port: OPM, select "OPM", press OK button or use touch screen to start, then select "OPM test", press LEFT or RIGHT to select a wavelength (850, 1310, 1490, 1550nm), Long press BACK to exit. Resolution: 0.1dBm. Accuracy: +/-1dBm

2. **PON power meter**:



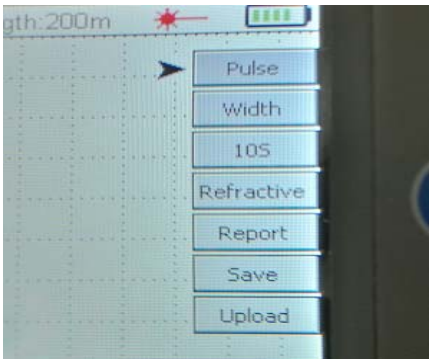


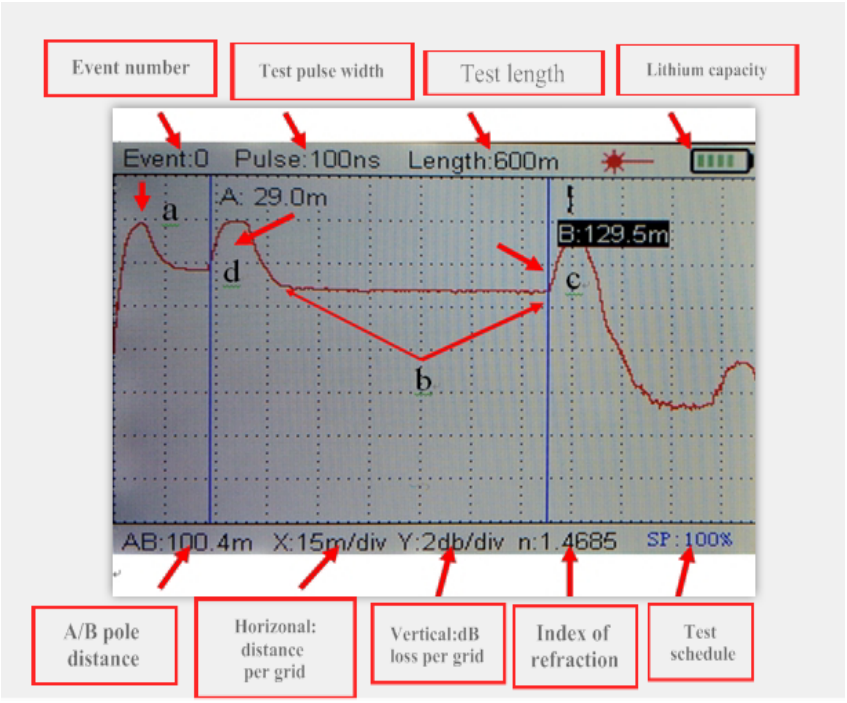
Test ports: OLT & ONU, select "OPM", press OK button or use touch screen to start, then select "PON test" to start the measurement. Long press BACK to exit. The fiber from the Computer Control room plug into "OLT" and the fiber to the end user plug into "ONU", normally it is connected between the last stage splitter and FTTx lead fiber, to measure the power meter of ONU upstream 1310nm or 1277mm. The PON power meter has 2 functions in FTTx construction and maintenance, the first use is to judge whether there are ONU on use, if the power value more than -10dB, it means exist ONU in use, if the power value shows "low", it means not exist ONU on use. The second use is measure the burst pulse width of the upstream signal, to judge whether it is on the normal condition. For example, for GPON 64 users, the burst pulse width is about 5us, it means it is on normal condition. (For detailed pulse width, please refer to local Internet Provider). PON power meter range: -30 --- +6dBm, resolution: 0.1dBm, accuracy: +/-2dBm

3. **Visual Fault Locator:**

Test port: VFL, select VFL or touch screen to start, long press BACK to exit, press the LEFT and RIGHT button to select 1Hz or 2Hz flashes, wavelength 650+/-20nm, output power 5mw.

4. **OTDR:**





Test port: OTDR. Select OTDR touch screen to start. The default test length is 200 meters, short press the OK button to start, the test will be finished within 10 seconds. Within the test pulse width of 100ns and test length 1.2 kilometer, it can automatically judge the faults and show on the screen, including connectors or splitters insertion loss, broken fiber, bending or fusion loss, length of fiber, attenuation of fiber and the inner core of optical cable and so on. The measuring resolution is 0.6 meter, accuracy 1%, minimum distance 10 meters for fiber broken or bending, which reminding "Broken or bending is found within 10 meters" (minimum 3 meters for connectors or splitters insertion loss).

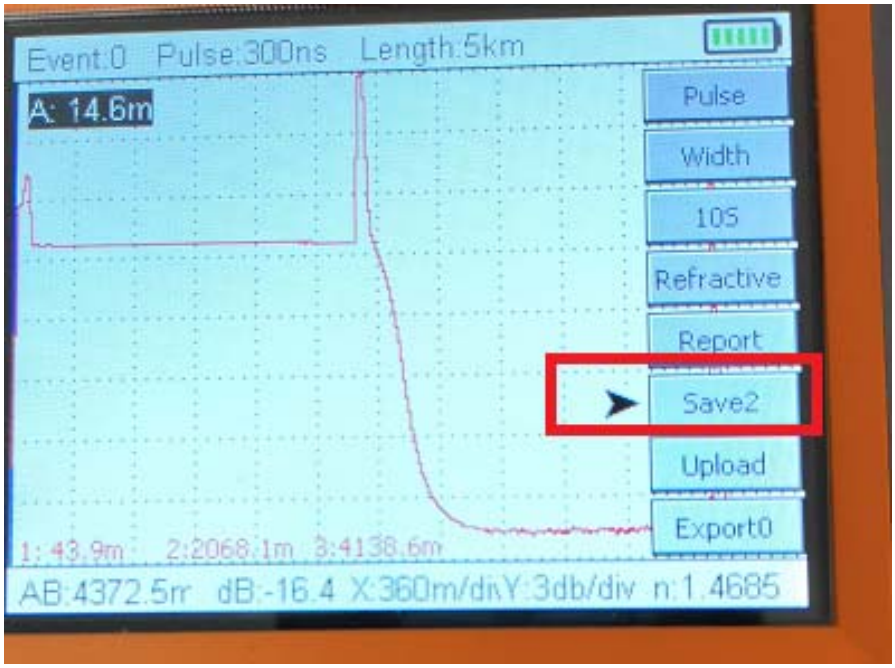
Screen display: Event: Number of events, Pulse: Test pulse width, AB: AB pole distance, X: 15meters per grid (corresponding to the length of the fiber) Y: 2 dB per grid (Corresponding to the depth of reflection), n: Fiber index of refraction. Long press MENUto configure menu, it can select the pulse width, the test length, test time duration, the refractive rate, test report, result save and uploading to PC. Press the left/right button to change the configuration.

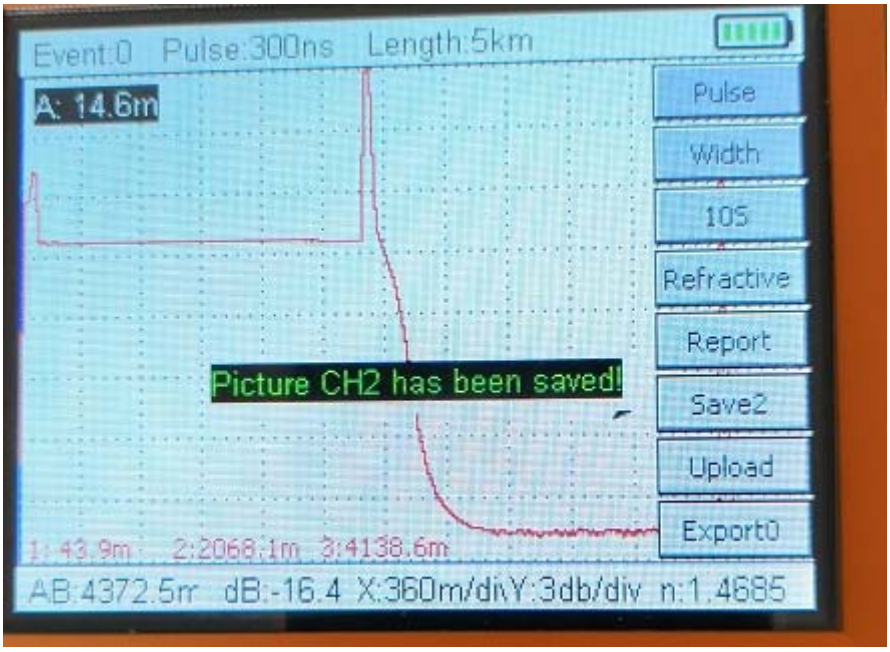
After the test figure is displayed on the screen, press LEFT and RIGHT button to move the pole, meanwhile it will show the distance from pole to the original point, touch the screen to switch A and B pole and the distance of AB pole will be shown at the bottom left. When the test length longer than 200 meters, press the UP and DOWN buttons to enlarge or reduce horizontally based on the pole A as center. Selecting pole A, then push LEFT and RIGHT buttons to move to the edge, the graph can move horizontally. When detect event points we use 100ns pulse or less, when detect attenuation we use 100ns or wider to get the smooth curve. When use 1us to detect event point, please adjust the point to left 100 meter.

Be sure the fiber ceramic ferrule must be cleaned before the test.

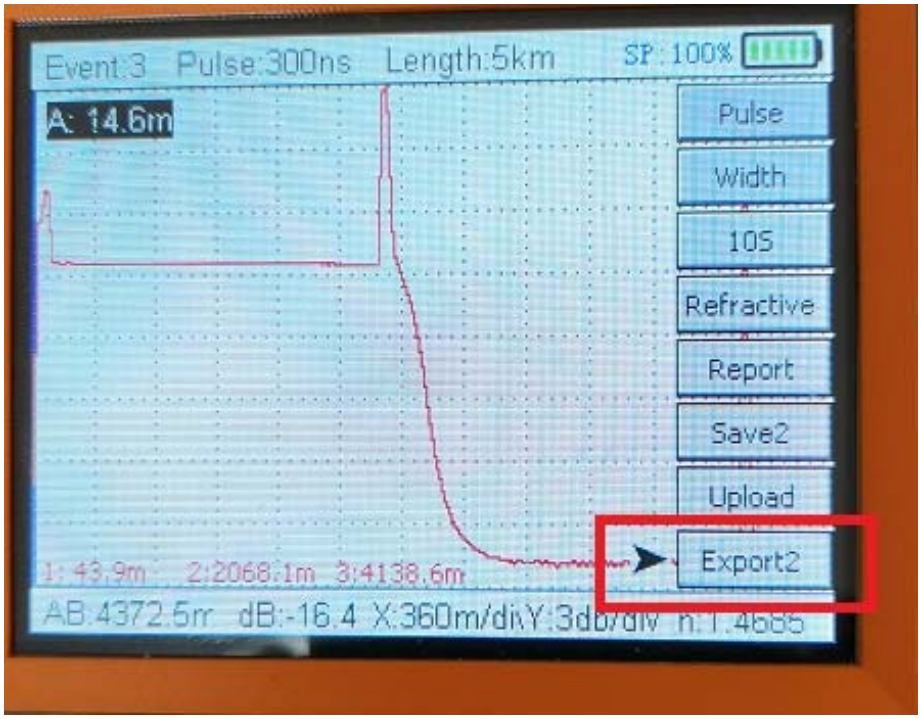
OTDR file save:

1) After the OTDR test finish, long push "menu", move to "save", push "left" and "right" key to select the save position (save0 to save20), then push "ok" to confirm.



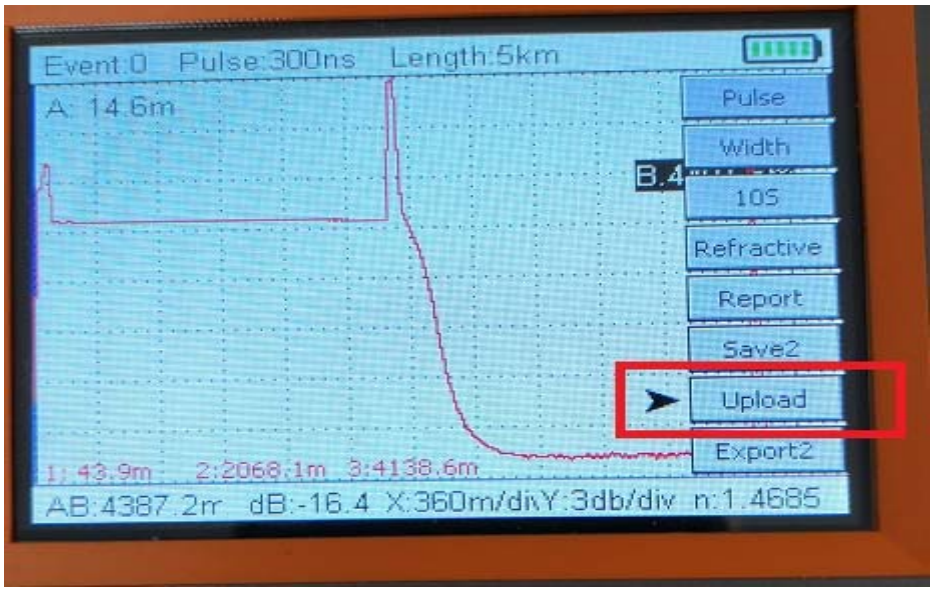


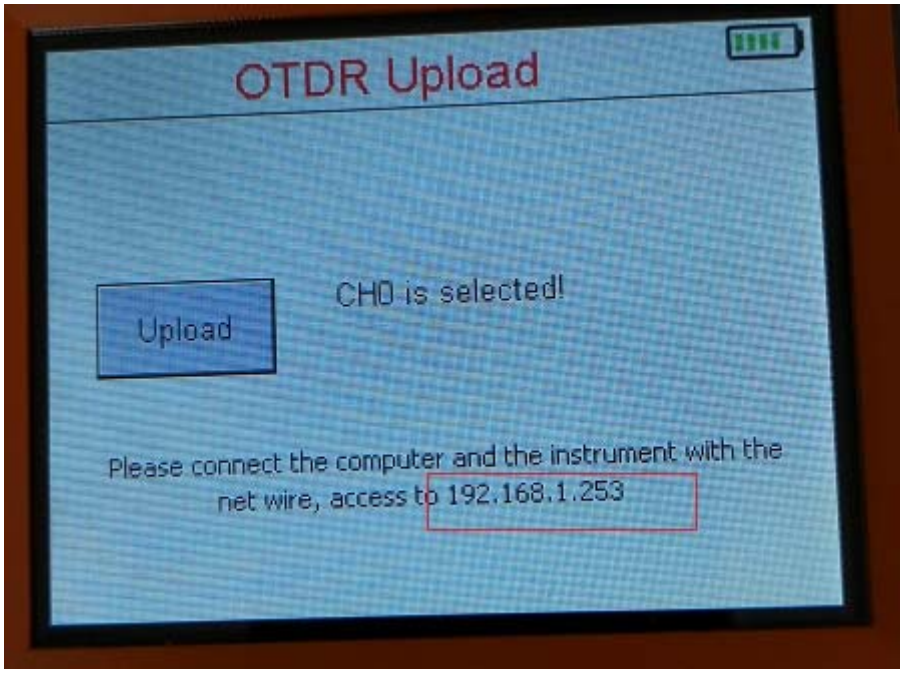
2）Export the data: select “Export”, push “left” and “right” key to select the position, push “ok” to confirm.



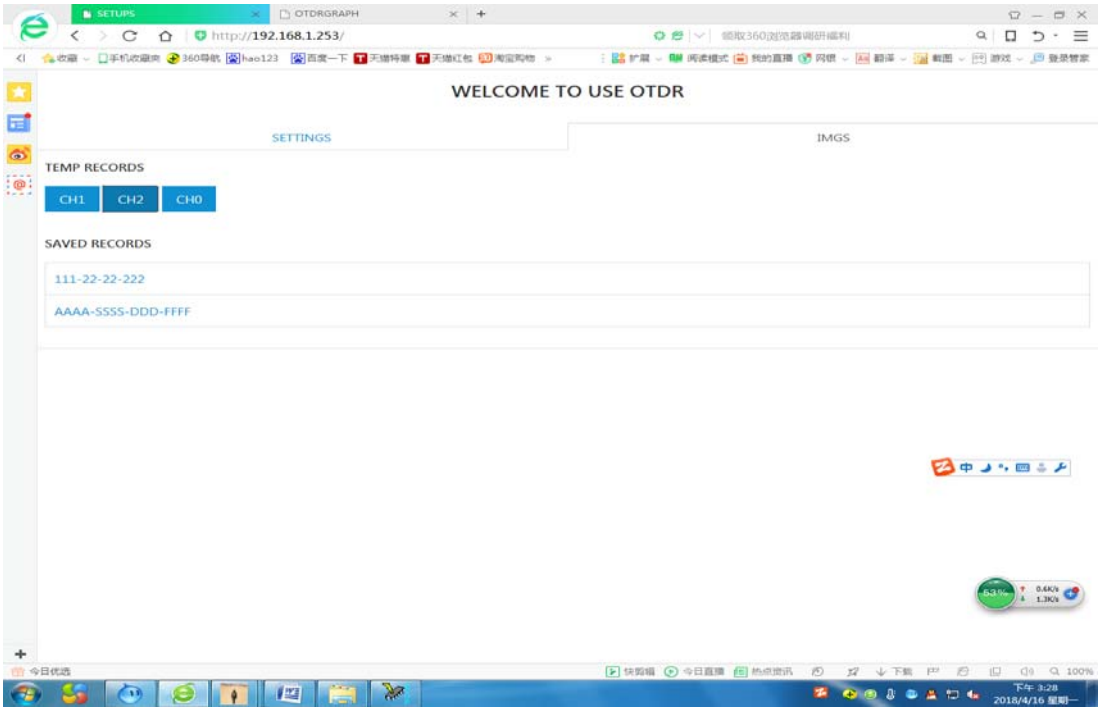
3）File upload to PC

Connect the instrument with PC by network cable, set the IP address to 192.168.1.xx, Or connect the instrument to the router, then move to Upload, push OK.

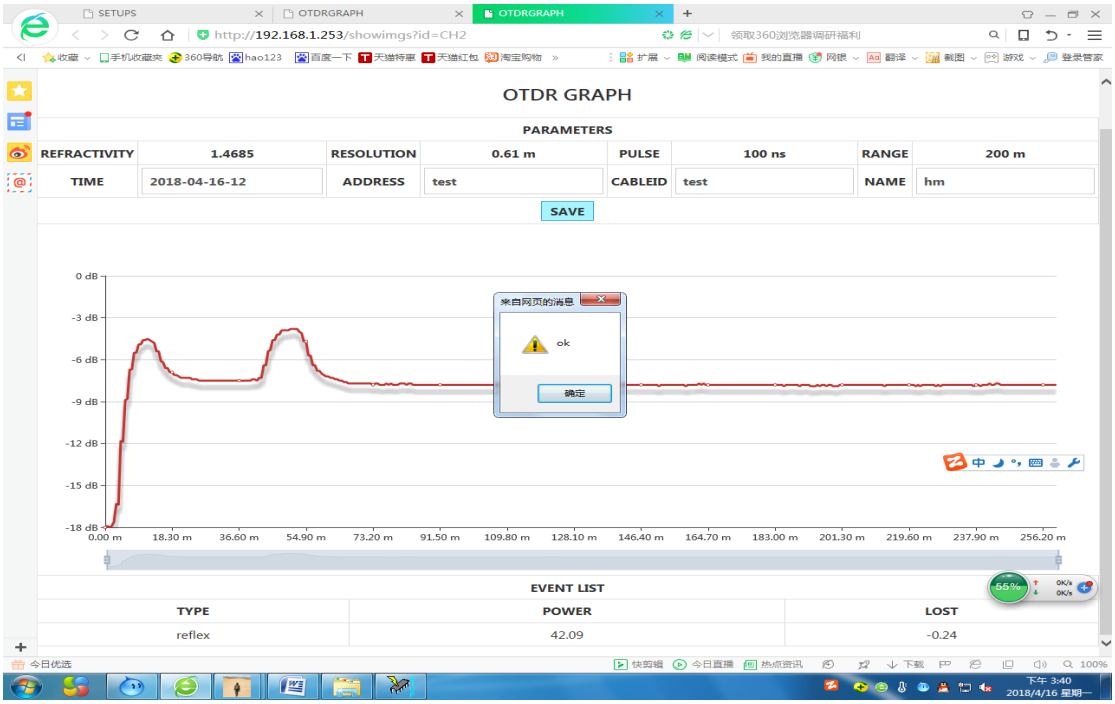




4）Use Google browser to input 192.168.1.253, push “left” and “right” to select the picture, push “ok” to upload, refresh the web page and click CHxx.

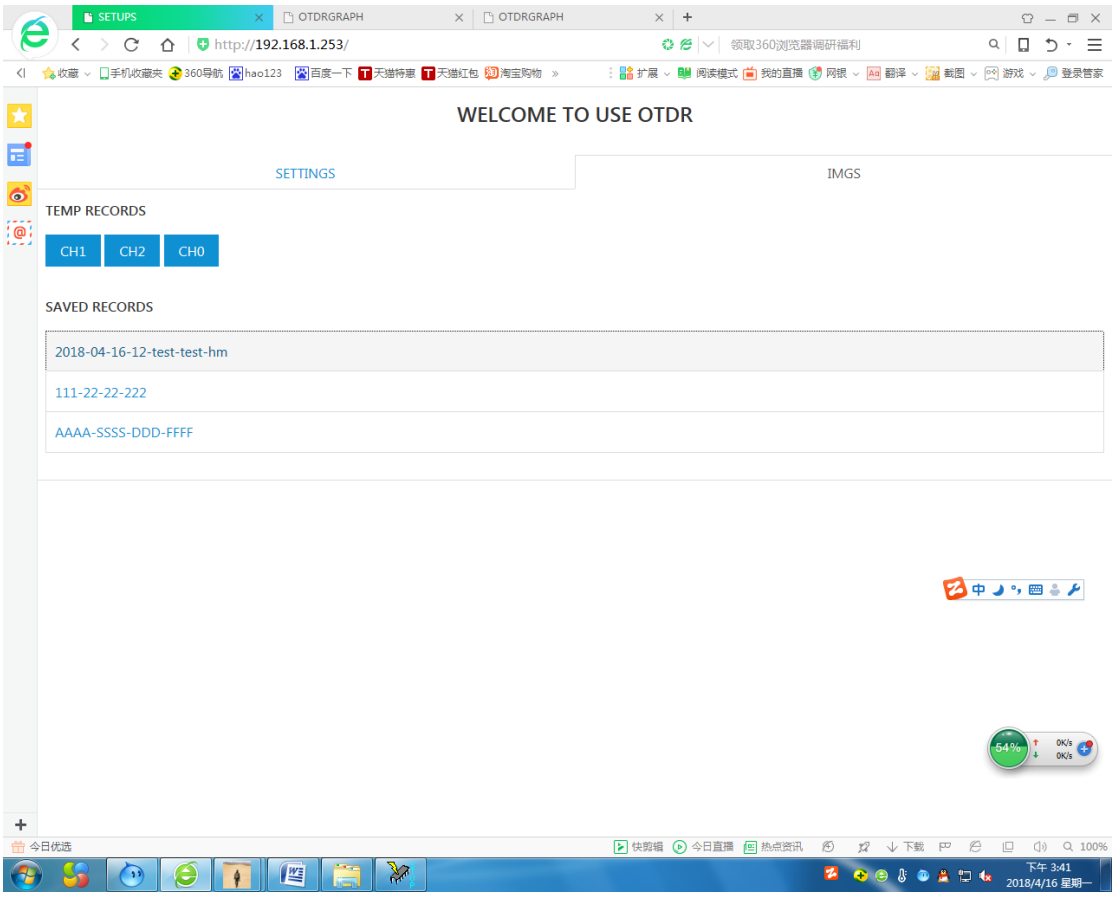


5）Edit the test time, test position, project name, tester, push SAVE to save it.

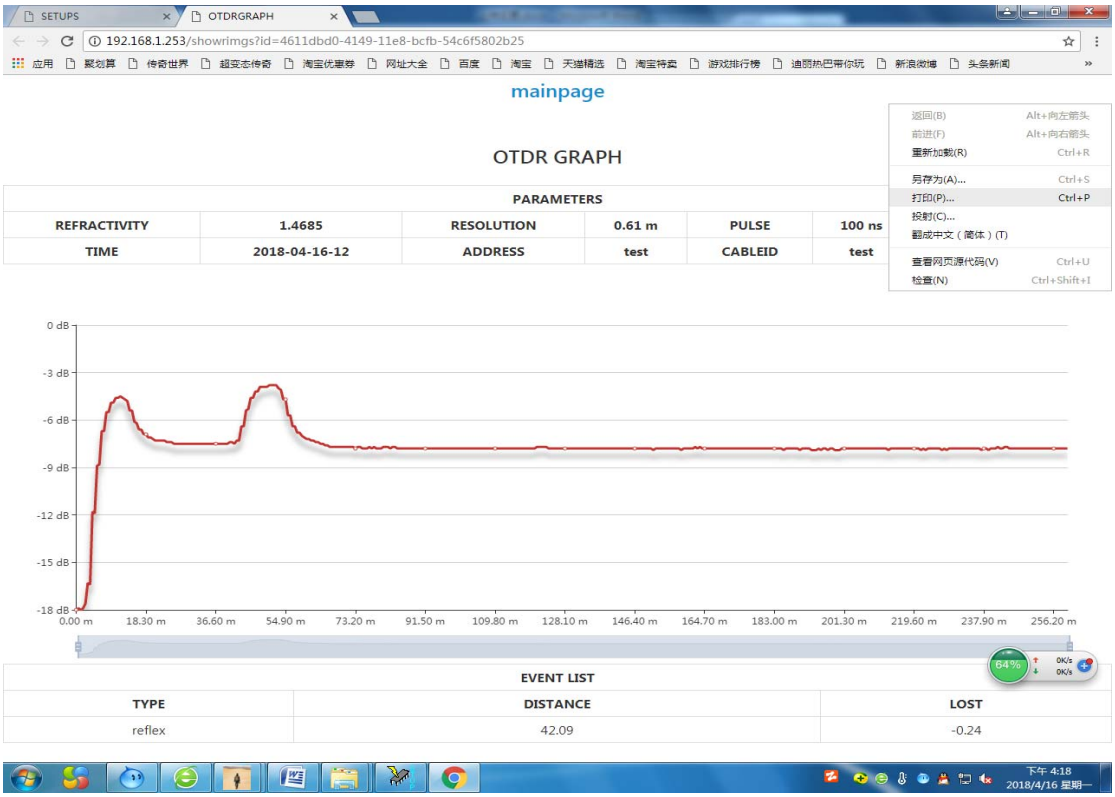


Print or save to pdf file:

Click the picture to be printed:

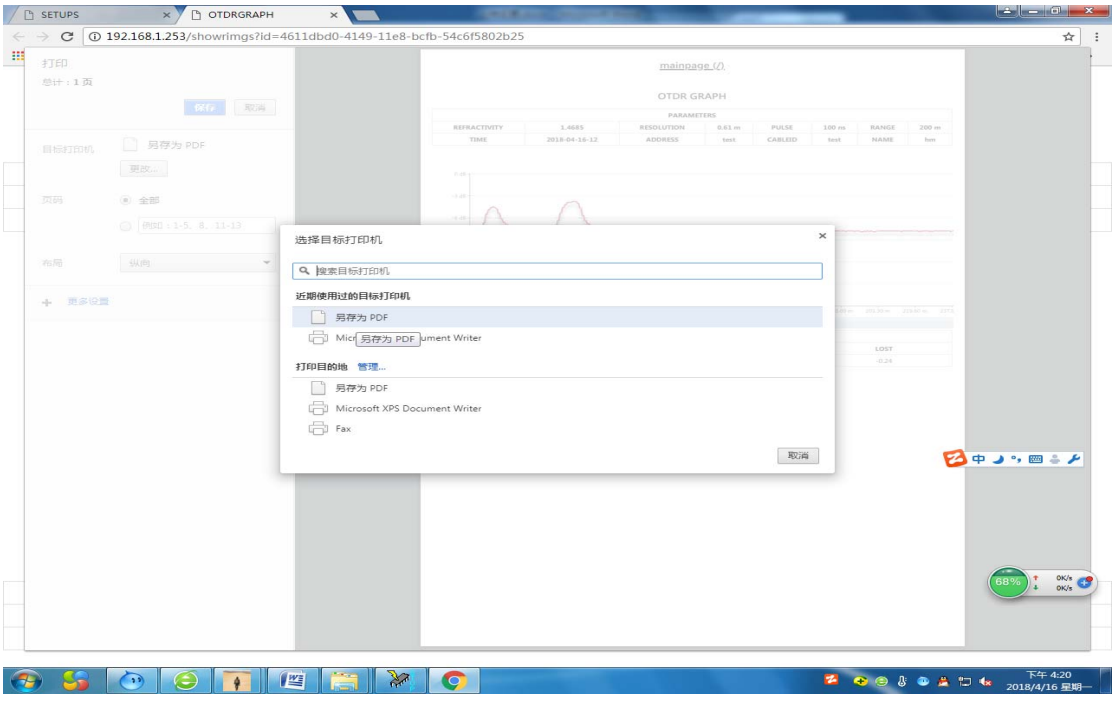


In the up right corner to click the right key of mouse to print:



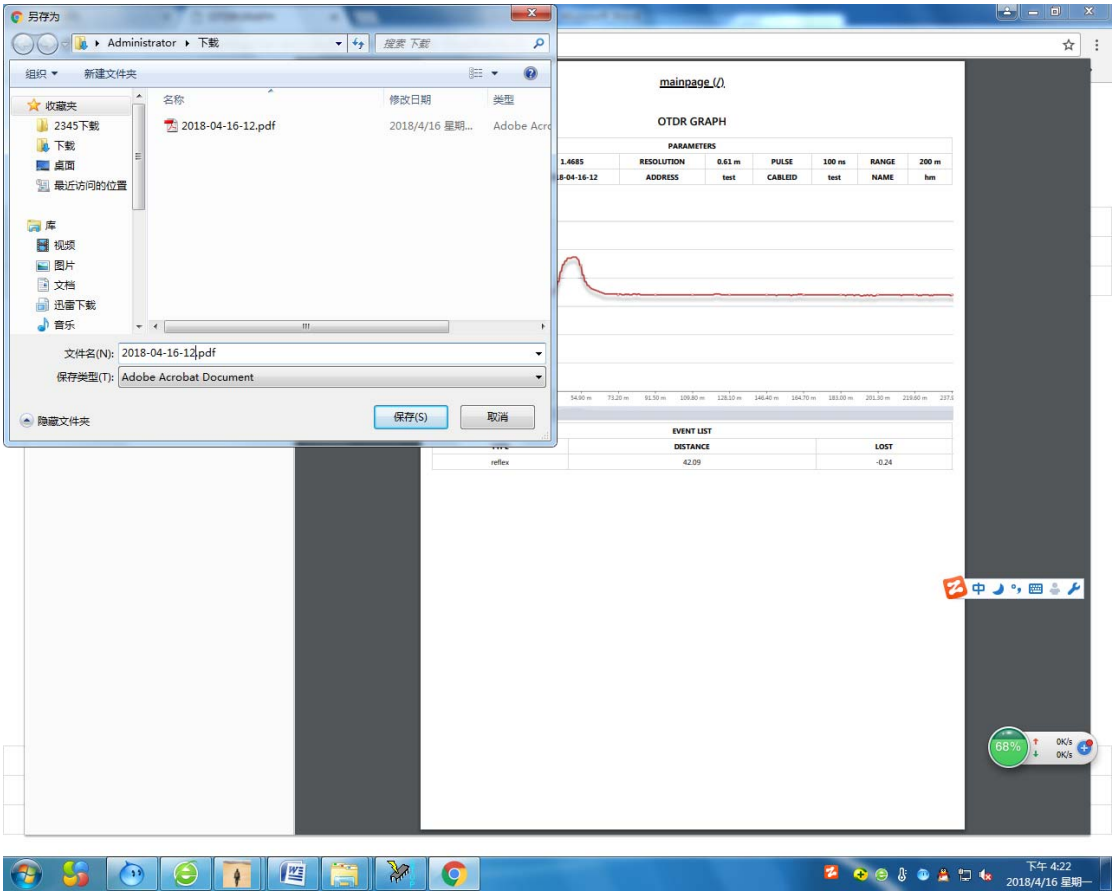
Click change:

Save as pdf:



Save, and select the save path:


SETUPS
OTDRGRAPH
192.168.1.253/showrimgs?id=4611dbd0-4149-11e8-bcfb-54c6f5802b25
打印
总计：1 页
保存
取消
目标打印机
另存为 PDF
更改...
页码
全部
例如：1-5、8、11-13
布局
纵向
更多设置
mainpage ()
OTDR GRAPH
PARAMETERS
REFRACTIVITY 1.4685 RESOLUTION 0.61 m PULSE 100 ns RANGE 200 m
TIME 2018-04-16-12 ADDRESS test CABLEID test NAME hm
EVENT LIST
TYPE DISTANCE LOST
reflex 42.09 -0.24
68%
0K/s
0K/s
下午 4:20
2018/4/16 星期一


另存为
Administrator ▸ 下载
搜索 下载
组织
新建文件夹
收藏夹
2345下载
下载
桌面
最近访问的位置
库
视频
图片
文档
迅雷下载
音乐
名称
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类型
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2018/4/16 星期...
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保存类型(T): Adobe Acrobat Document
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保存(S)
取消
mainpage ()
OTDR GRAPH
PARAMETERS
EVENT LIST
DISTANCE LOST
reflex 42.09 -0.24
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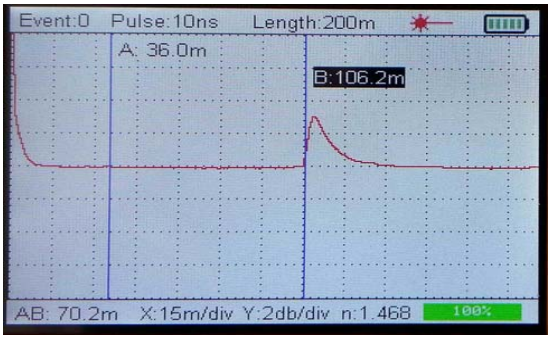
5. LTDR:

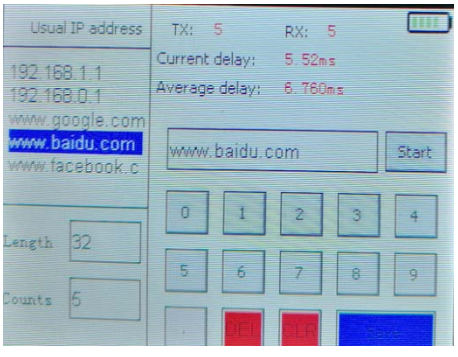


Test port: LTDR. Select LTDR or touch screen to start,
Function: 1)Measuring the length of network cable or copper cable,
2)Determining the network cable or copper cable breaking point or short circuit point,
3)Determining the network cable or copper cable impedance mismatch point, including join t oxidation, mixed lines, thickness-thinness wire connection point etc.,
4)Measuring the distance between two points of network or copper cable.
Screen display: Event: Number of events, Pulse: Test pulse width, Length: Measuring lengt h, AB: AB benchmark distance, X:15 meters per grid (corresponding to the line length), Y: 5 dB per grid, C: wave rate, long press the menu to configuration menu,
can configure the pulse width, the length of the test, pairs (1-2, 3-6, double) and the wave rate etc. For pairs 1-2, the graph is red, for pairs 3-6, the graph is blue. After the test graph is displayed on the screen, push "left" or "right" button to move the pole, meanwhile shows the distance from benchmark to the original point, touch the scree n to switch A and B poles. The down left display the distance of A and B poles. When the test length longer than 200 meters then press
the "up" and "down" buttons to enlarge or reduce based on the pole A as center. Sel ecting pole A, then push "left" and "right" buttons to move to the edge of figure. If detecting fault point distance less than 100 meters we use 10ns test pulse, if
100 meters to 3 kilometers we adjust the test pulse width according to the return pulse intensity. Testing theory: the test pulse generate the reflection while impedance mismatch, if the open circuit or bigger than characteristic impedance the return pulse is upwards, if short circuit or less than the characteristic impedance, the return pulse is downwards.

PLEASE NOTE TEST WITH ELECTRICAL POWER IS FORBIDDEN.

6. Network Test:

Test port: LAN. Select Network test or touch screen to start. Plug the network cable to LAN port, the yellow LED light means that the network has good physical connection, th e green LED indicator light means in normal condition, firstly to check if NetStates has IP allocation (please ensure that the IP of the instrument is in the network IP to be measured)



1) Ping test: It can select or add new target IP address, display real-time delay average and packet loss number, default Ping=32bytes;

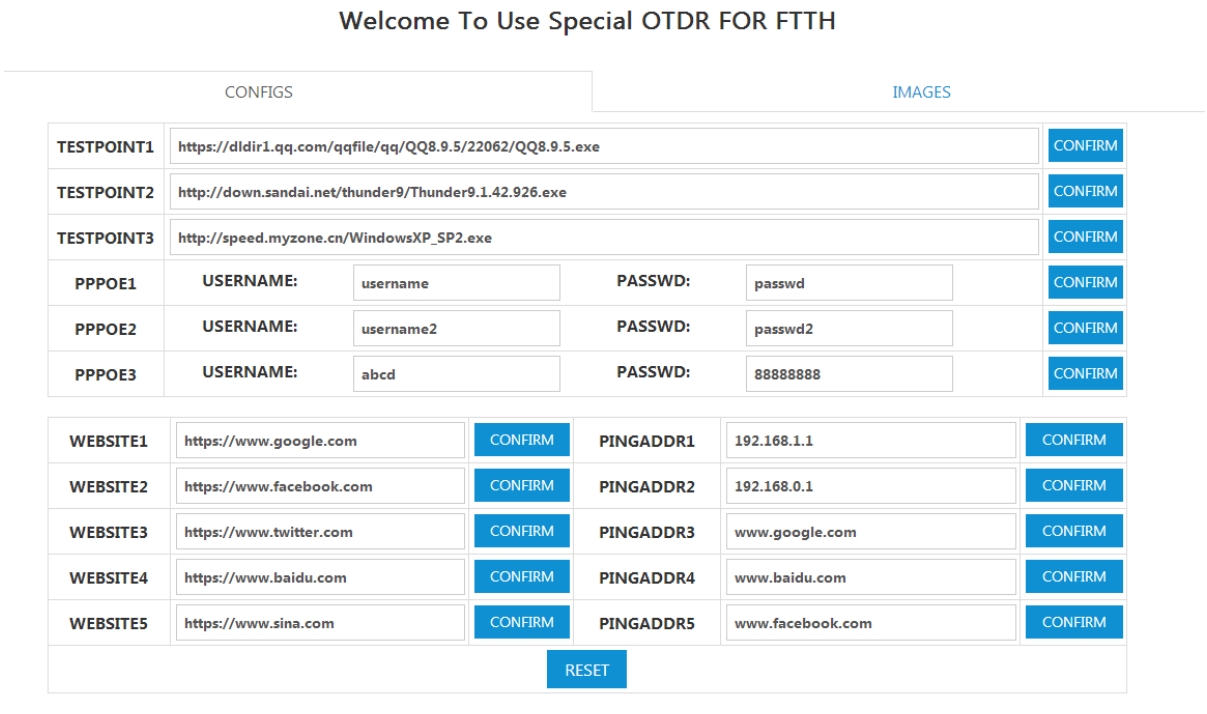
2) PPPoe dial: It can set users and passwords, for the dialing verification for ONU and network set-top boxes;

3) DHCP test: It can detect whether the DHCP service exists in the network, or whether there are multiple DHCP servers, causing the routing chaos, and displaying the IP address and gateway information;

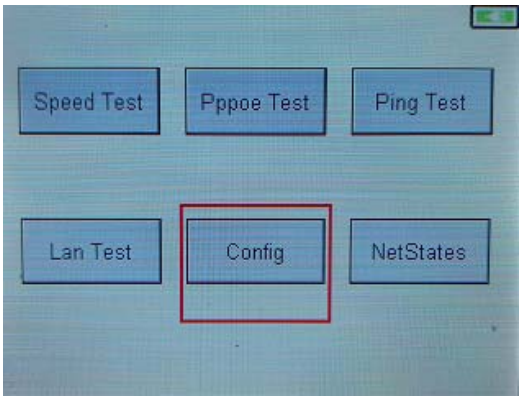
4) LAN test: Detect IP address and MAC address of the active host in the network, including the mobile information of the printer and the WiFi network, to judge the network faults;

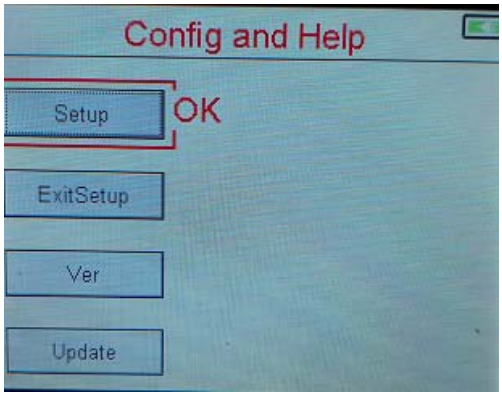
5) Local IP configuration: Meet the needs of different network segments bu configuring the local IP address, it can also log to the IP through browser directly, to configure network test and upload test data.

6)Network configuration I. Click CONFIGS to enter network test configuration interface, change the data, then save it.

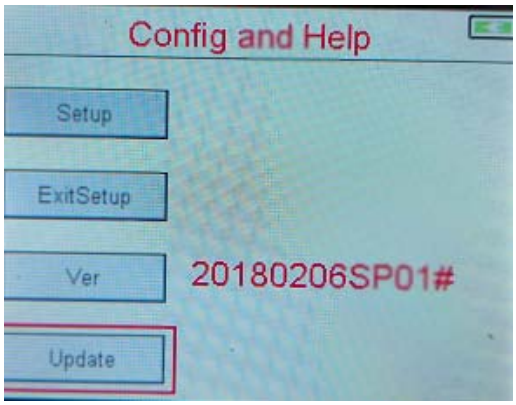


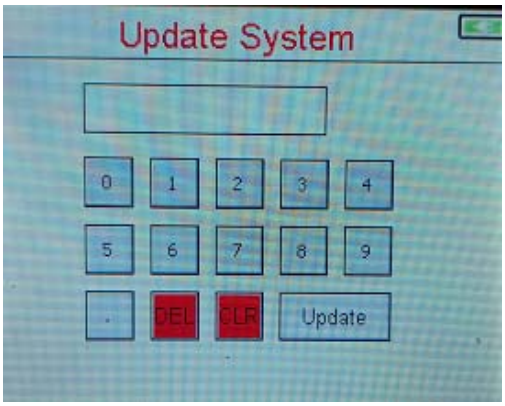
II. In the main interface of network test, Click Config, then click Setup, meanwhile PC browser input address 192.168.250.1



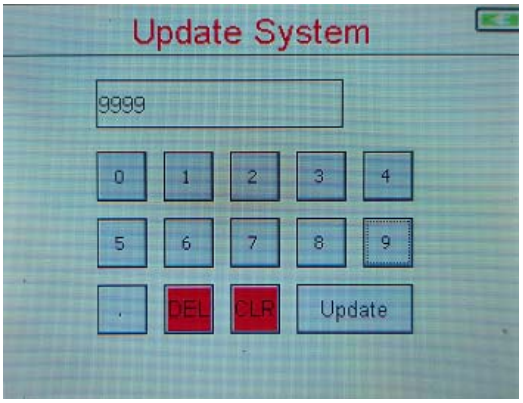


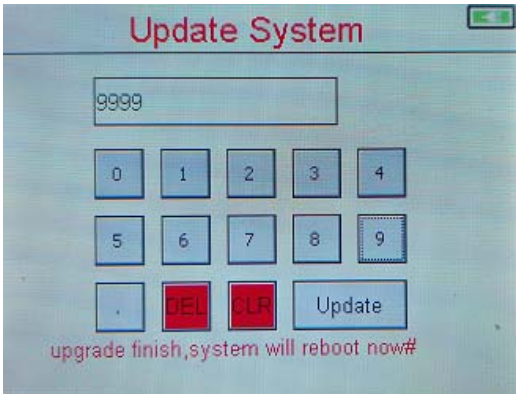
7) Module update



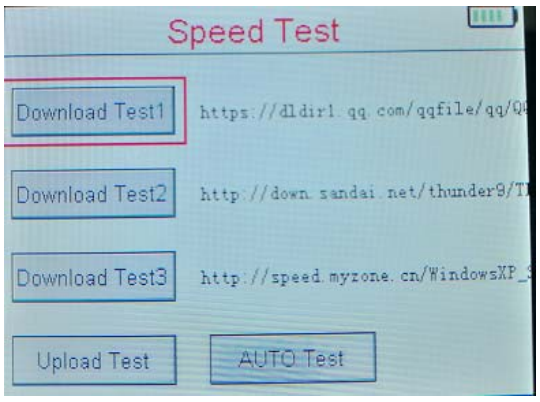


Update password , click OK to start update, after the finish please restart it.



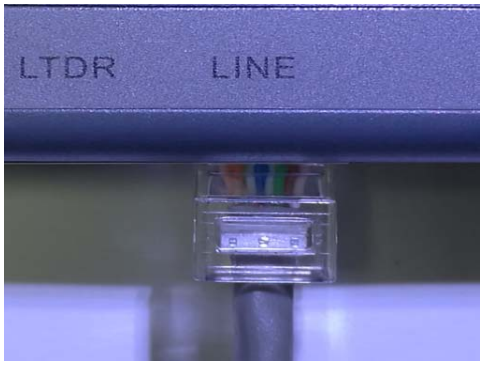


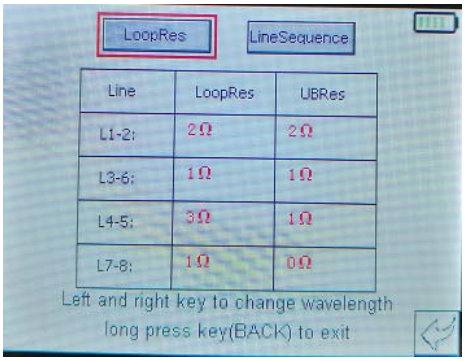
7. Internet speed test



Test port: LAN. Select Network test, then to Speed test, or touch screen to start. It includes “Download test” and “Upload test”. There are 3 download speed address available, there is an automatic selection of the optimal download address, not less than 95M for 100M product, and not less than 900M for 1000M product. Speed test address and network test configuration can be obtained through the PC browser login instrument IP address. Instrument IP address can be viewed in the interface of menu of NetStates of Network Test, also it can be online upgraded on “Setting --- Help” menu. Upgrade way: connecting LAN port, “Configuration --- Update” menu, push “Update”, input update ID (normally it’s area code of fixed telephone), then push “Update”, until display “system will reboot now” means update success and restart now.

8. Line test:





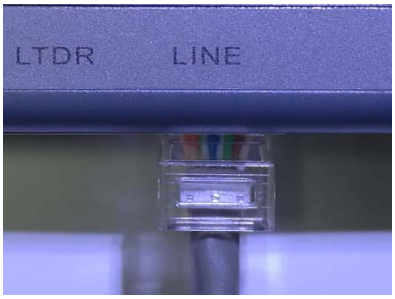
Test port: LINE

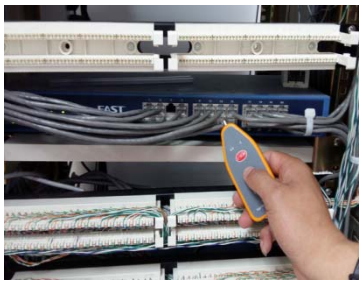
Select Line test or touch screen to start. Test L1-2, L3-6, L4-5 and L7-8.

1) Test the cables loop resistance: Plug the other end of the cable into the LINE port via RT45 connector. It displays four pairs cables loop resistance and unbalance resistance, the physical failure of the network will eventually appear in the network of loop resistance and unbalance resistance, please refer to the standard of 19Ω/100m to determine the nature of cable failure, network cable quality, and network cable anti-jamming capability. When breaking or open circuit, it shows infinity.
2) Test the line sequence: plug the other end of the cable into the LINE port via RT45 connector, test orderly one by one from line 1 to line 8, to measure whether the line loop or not, if normal condition, display OK, or display X for error.

9. Line Search

Line search:





Test port: LINE

Select Line search or touch screen to start.

It can choose “Audio” or “Ultra audio”. Plug the network cable into LINE port between 1-2 and 3-6, meanwhile the cable connected to the same 1-2 and 3-6, please do not send the search signal to the AB twisted wires, because self resistance and the interference of twisted pair will affect the line searching results. We select “Audio” while network cable open circuit, test as “L-SACN”, and select “Ultra audio” while connecting with route, switch or short circuit, test as “H-SCAN”.

10. Settings:

Select Setting or touch screen to start. It can adjust the LCD lightness, automatic switch off, language and factory setting, etc., help to read the brief introduction of the function modules.

11. Lithium-battery:

3800mAH high capacity Lithium battery. Please charge it continuously for More than 8 hours for first time using. It can use MicroUSB plug to connect with laptop or power adapter to recharge. The red LED light when cha rging, the blue LED light when recharging completed.

12. Trouble shooting:

1) OTDR test Tip: "test port or fiber to be tested unclean" mainly means that the port of instrument or fiber optic cable plug to be measured is dusty, please clean it with a cotton swab stick that dipped in alcohol. If the tip still exits after cleaning, the problem may be from the fiber plug.

2) The output of the VFL is weak, the problem may be the SC or APC connector ceramic ferrule is not plugged properly.

3) If the error of the test value of OPM and PON meter is large, the test ports may be need clean by cotton swabs.

4) Some situations like failure to switch on, switch off automatically and battery

exhaust, continuous recharging more than half an hour could solve the problems.

5) The accident caused by the operation failure, and the crash caused by the strong interference, can be solved by recharging.

III. Technical Parameters

Function	Parameters	
Optical Power meter	Wavelength range (nm)	800～1600
	Probe type	InGaAs
	Power measurement (dBm)	-70～+6 (-50～+26)
	Uncertainty	5%
	Display resolution	0.1dBm
	Fiber category	Single mode
	Connector	SC
PON Power meter	Wavelength range (nm)	1277-1310nm
	Measurement range	-30~+6dbm
	Insert loss	Less than 1dB
	Uncertainty value	+ -1dBm
Visual Fault Locator	Operation Wavelength (nm)	650nm
	Light emitting device	FP-LD
	Output power (mw)	5mw
	Modulation	0HZ、1HZ、2HZ
	Fiber category	Single mode
	Connector	SC
Network test	Download speed	1000M
	Ping test	6 groups or setting
	Pppoedail	6 groups or setting
	DHCP detect	Display IP and gateway
	WEB test	Display WEB interface
Line test	4 groups loop resistance	1-8000Ω
	4 groups unbalanced resistance	1-1000Ω
	Uncertainty	5%
Line search	Audio Hunt	800/1600HZ-10vpp
	Ultra audio hunt	400khz modulation800/1600HZ-10vpp
OTDR	Laser tube	LD
	Detecting diode	APD
	Measurement resolution	0.6m
	Event dead zone	15m
	Attenuation dead zone	20m

	Test pulse width	10、30、100、300ns、1、3us
	Dynamic range	18dB
	Measurement length(Event)	50km
	Measurement length(Attenuation)	15km
LTDR	Measuring length	5-2000m
	Test the pulse amplitude	10v
	Test pulse with	10、30、100、300ns、1、3us
	Measurement resolution	0.6m

Others	Power supply	Lithium/3800MAH
	Power adaptor	MicroUSb5V/1000mA
	Single-phase maximum current	≤ 200mA
	Standby power	≤2uA
	Battery operating time	≥10H
	Auto-off time (min)	Adjustable
	Working temperature (℃)	-10～+50
	Storage temperature (℃)	-25～+70

Packing list:	
Main body	1pc
Line searcher	1pc
Alligator clip test leads	1pc
Aluminum case	1pc
User manual	1book