Content

1. Description

STC-MFIRL4201 (MPO/MTP) mandrel free insertion loss test station is specially design for multi fiber testing. It realized mandrel free return loss measurement on the multi fiber, and without matching gel for the MM measurement. This test station also do the auto-testing on 12 core/24 core for insertion loss and return loss, highly efficient multi-core fiber insertion and return loss measurement and make high precision on the measurement result with OTDR mandrel free technical adopting.

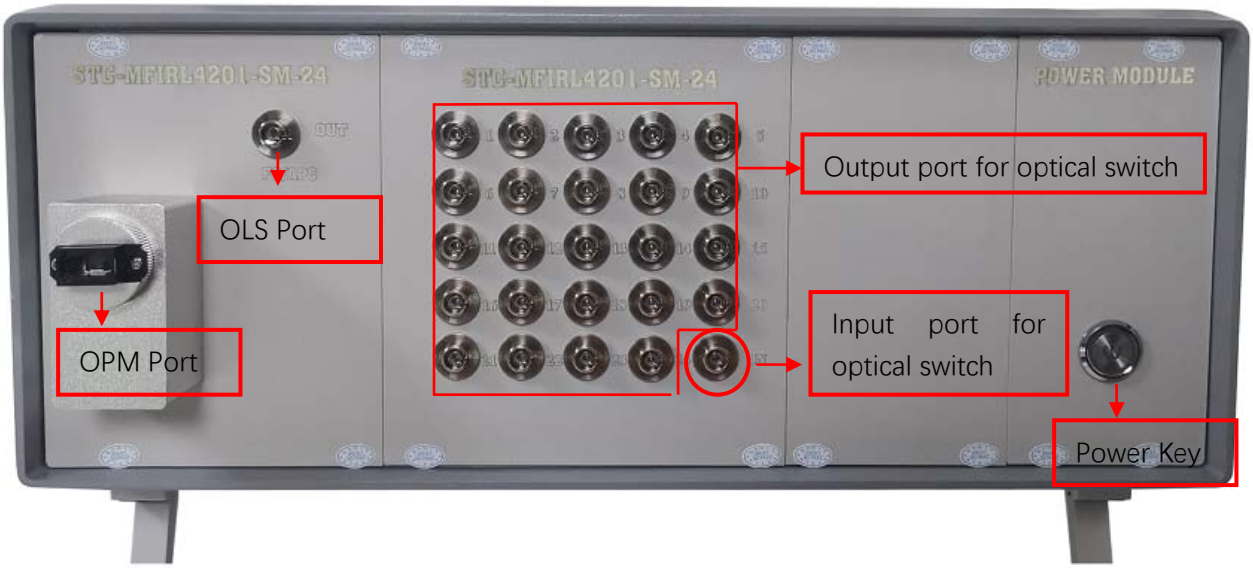
2. Specifications

Model	**STC-MFIRL4201 (MPO/MTP)**	
Detector type	Integrating Sphere	
Wavelength Range	850~1700nm	
Measurement Range	+3dBm~-75dBm	
Measurement Fiber Type	SMF/MMF	
Linearity	±0.04dB(+10~-35dBm); ±0.08dB(-35~-45dBm); ±0.2dB(-45~-55dBm)	
Uncertainty	±3%	
Insertion Loss measurement		
Wavelength	SM 1310/1550nm	MM 850/1300nm
Central Wavelength	±10nm	±30NM
Laser Device	FP	LED
Fiber Core	9/125	50/125 or 62.5/125
Output power	≥-7dBm	≥-27dBm
Stability	0.01dB /15min 0.03dB /8hour	0.03dB /15min 0.06dB /8hou
Connector Type	FC/APC	
Return Loss measurement		
Laser Source type	SM	MM
	pulsed FP Laser	
Measurement Range	15dB ~ 77 dB	14dB ~ 53 dB
Accuracy	±1dB(15~55dB);±1.5dB(55~65dB) ±3dB（65~77dB）	±1dB(14~40dB) ±2.0dB(40~53dB)
Mini. Measurement length	2 meters (APC end) 3 meters (UPC end)	
Max. Measurement Length	1000 meters	
Packing Size	275X310X170mm	
Weight	5.8kg	

1. Standard Configuration:

Name	**Qty**	**Name**	**Qty**
MPO/MTP mandrel free insertion loss test station	1 unit	USB cable	1 pcs
Standard Patch cord MPO(F)-FC/APC 12 cores	1 pcs	Cotton Swab	1 bag
Standard Patch cord MPO(F)-FC/APC 24 cores	1 pcs	Power Adapter	1 pcs
Standard Patch cord FC/APC-FC/APC	1 pcs	User Manual	1 book
1.25mm, 2.5mm, MPO connector	1 pcs each		
U-disk	1 pcs		

2. Front & Back Panel Instruction



Front

Back

3. Install the driver

We need to install the driver for the software for first time using.

Double click drive from this file. drive , display following interface.(pic1)

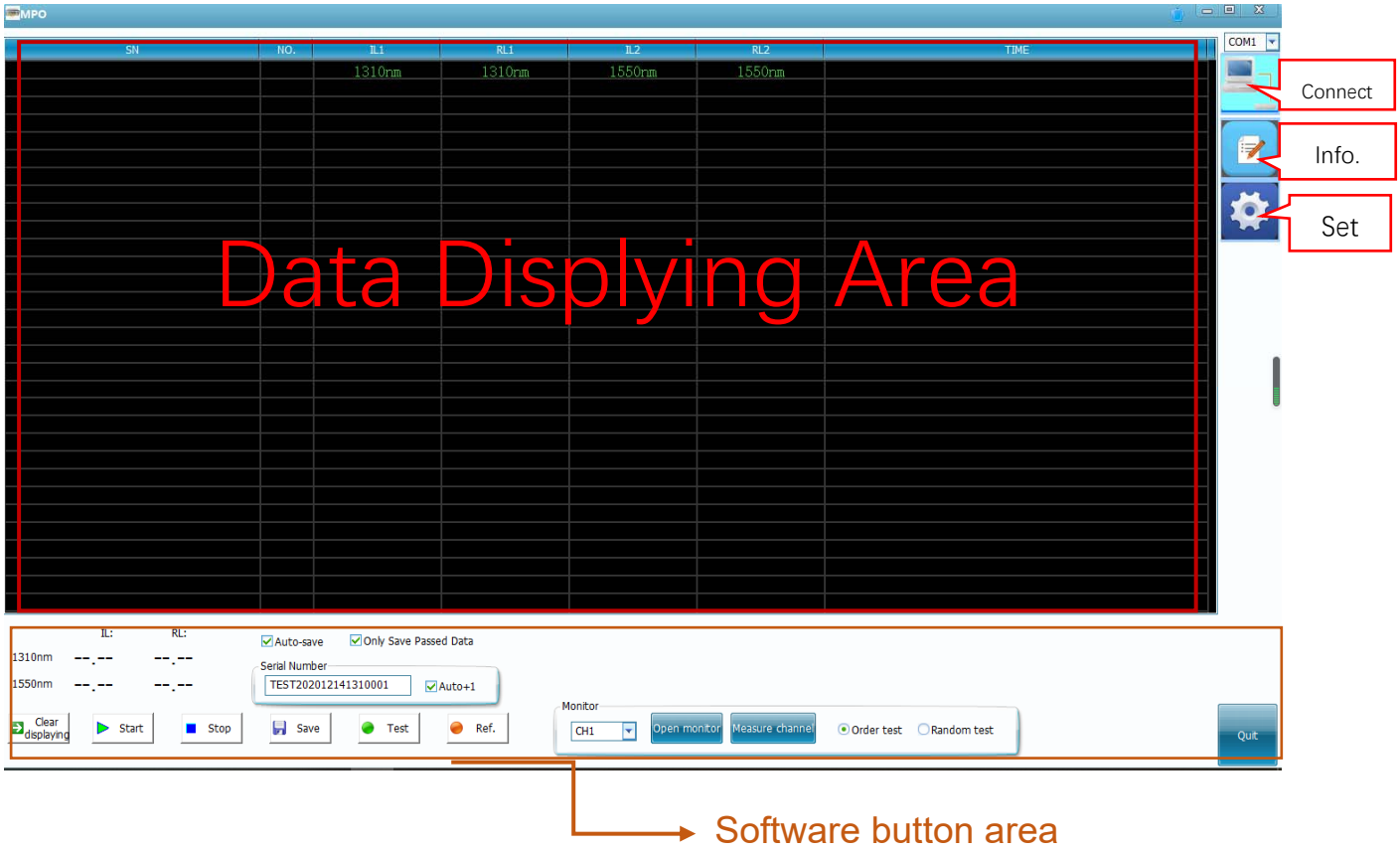
Pic 1

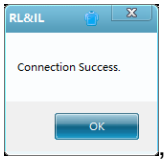
Click “install”, and complete the software installing.

The software support WINDOWS 98/ME/2000/XP/Vista/7/8/8.1/10/2003/2008/2012 -32 bit /64 bit

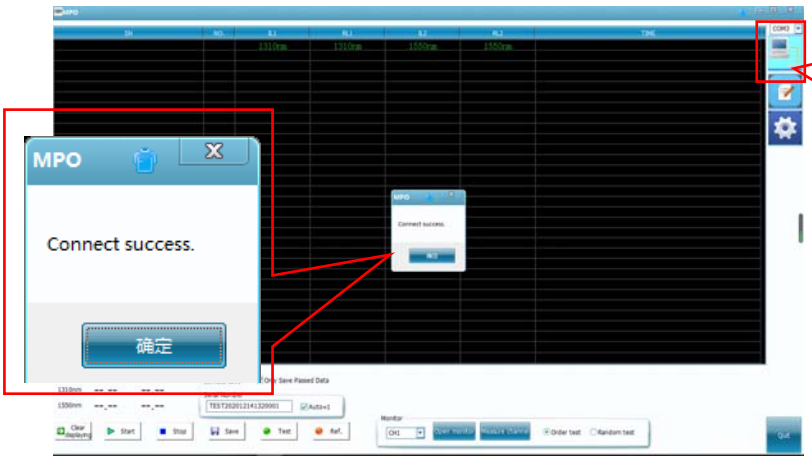
4. Software operation instruction.

Double click MPO , display interface as following

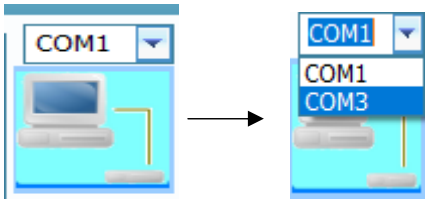


Click right top on the software interface, choose the correct COM port, click  to connect, if connect success, pop up as 

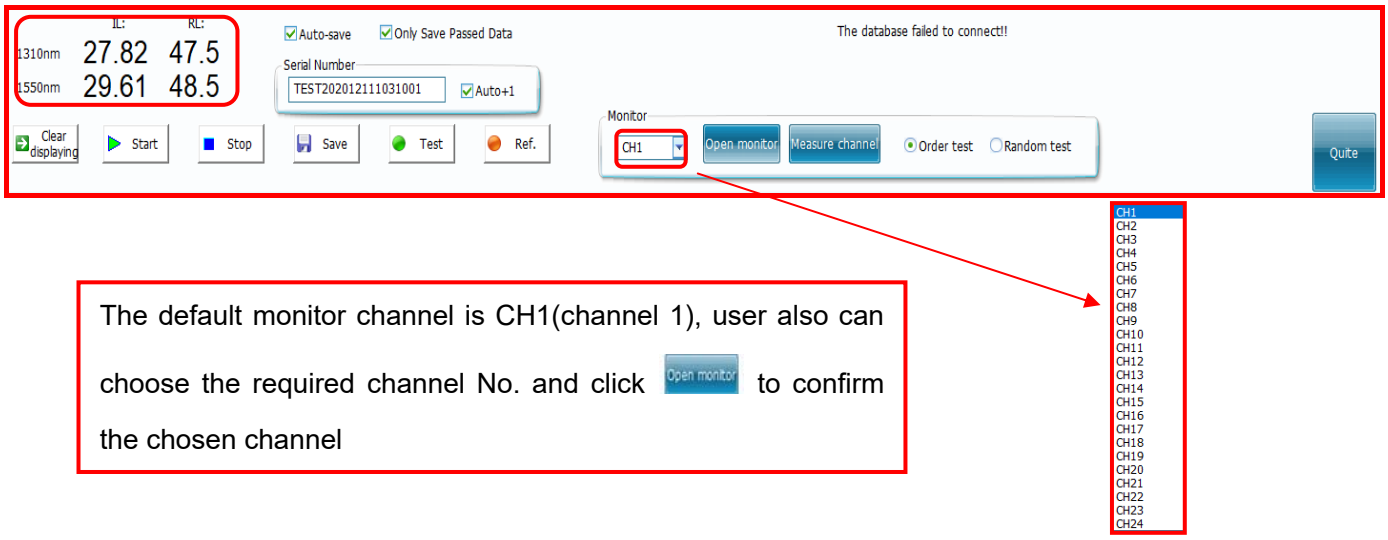
, click OK. PC and device is success connected.



Notice: If connect with desk-top PC via USB, there will be additional com port COM1, however COM1 is not this device correct port.



5. Main interface instruction：



The default monitor channel is CH1(channel 1), user also can choose the required channel No. and click Open monitor to confirm the chosen channel

(1) The area at the bottom of software interface, left value for insertion and return loss displayed is the IL &RL value for the monitor channel.

(2) . Auto-save :

√---After complete the measurement, the testing data will be automatically saved as EXCEL file.

do not √---after complete the measurement, the data cannot be automatically save, should be manually click “SAVE” button to save the data

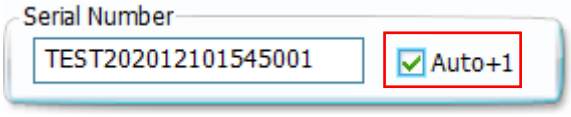
MPO-FC/LC is not available for this function

(3) . Only Save Passed Data :

√-----Save only passed testing data(Green is passed value, Red is Failed value)

Do not √----Save all the testing data

MPO-FC/LC is not available for this function

(4) 

:

√----SN +1 automatically after each patch cord tested.

Do not √ ------After complete the currently patch testing, The SN will remain the same, when testing another patch cord

(5) Start: Start for currently mode.

(6) Stop: Stop for currently mode

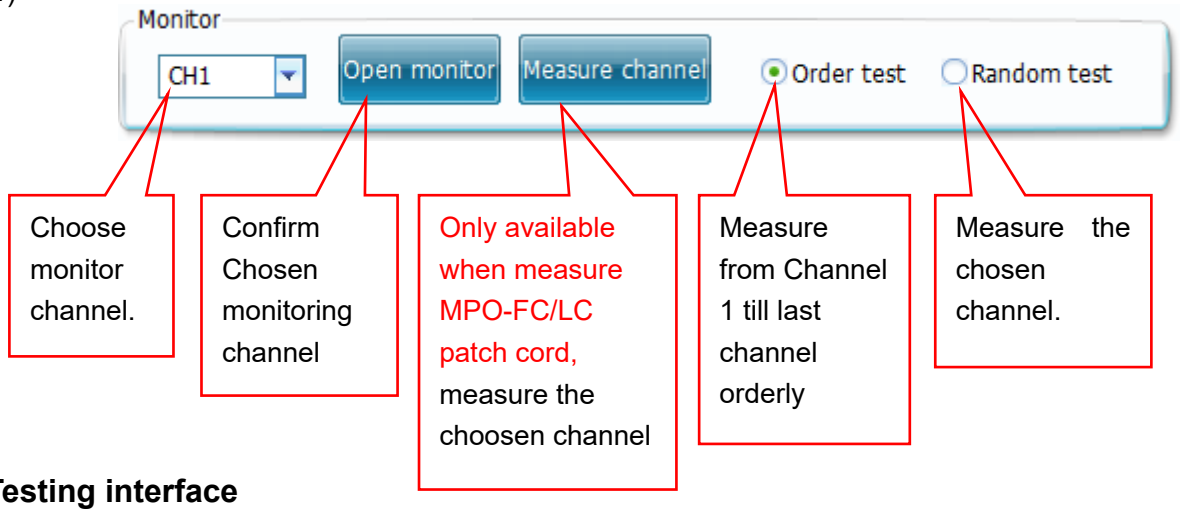
(7) Save: Save the testing data

(8) Test : Enter I&R Loss Measurement mode

(9) Ref. : Enter Insertion and Return Loss Ref mode

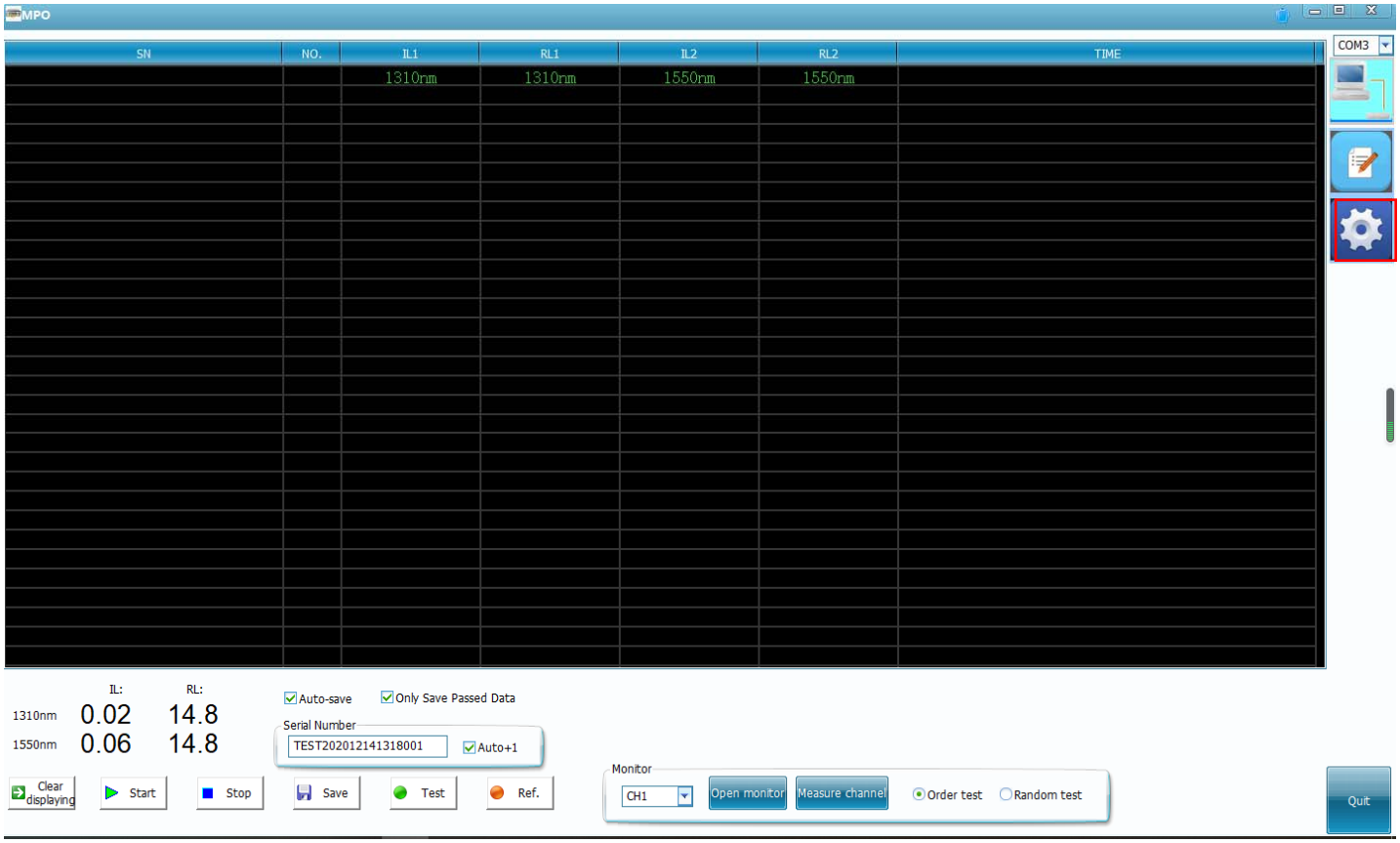
(10) Clear displaying : Clear all the data in displaying area

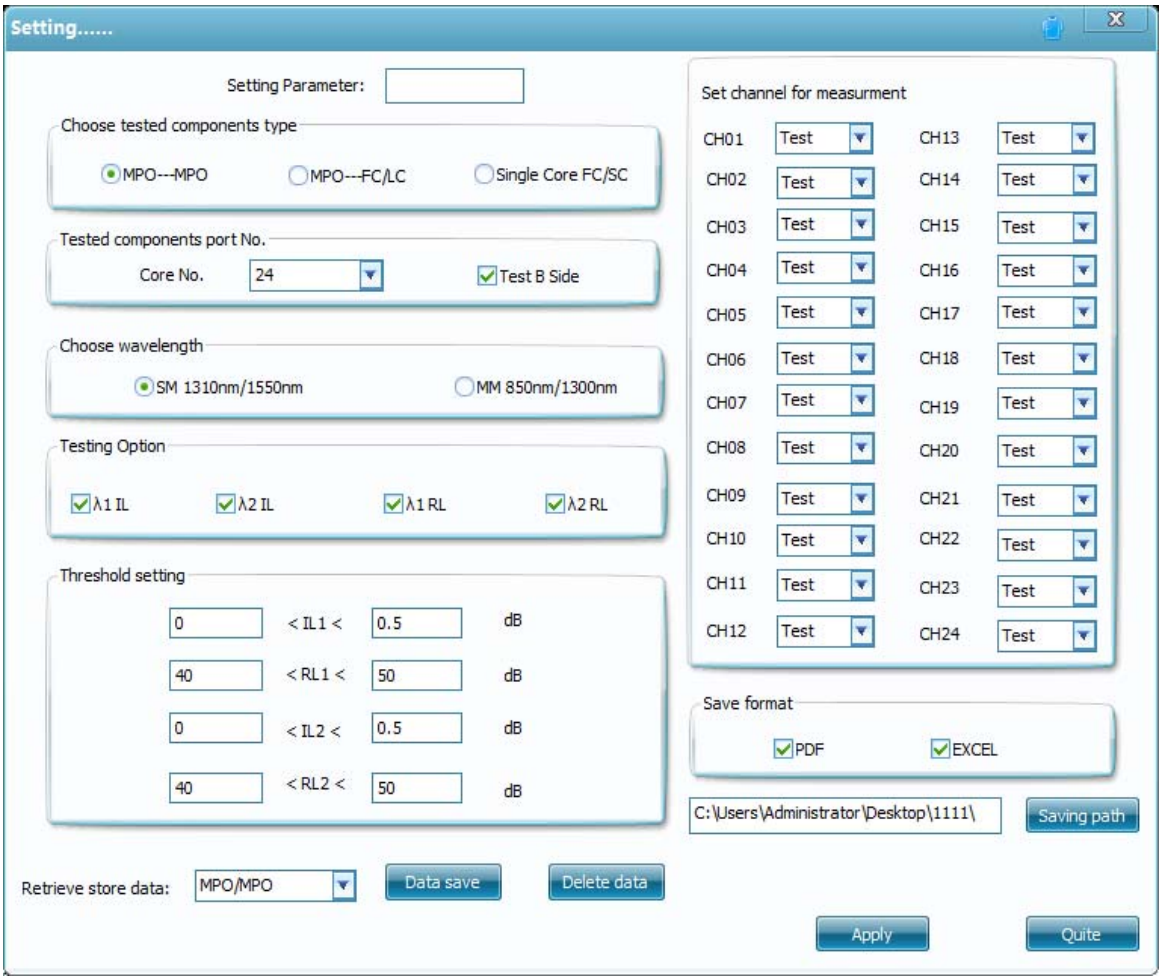
(11)



6. Testing interface

Click Setting button, enter into setting interface





(1) Setting Parameter: : Name this setting parameter as:

(2) . Choose tested components type :

a. MPO---MPO : Tested patch cord is MPO-MPO

b. MPO---FC/LC : Tested patch cord is MPO-LC fan out.

c. Single Core FC/SC : Tested pat cord is single core the end is FC or SC.

(3) Tested components port No. :

a. :Choose the measured core No.

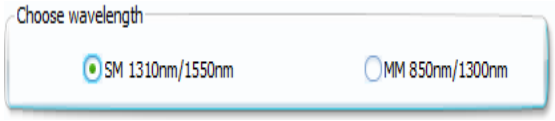
b. Test B Side :

√-----After A side testing, reverse to B side , test B side of patch cord.

Do not√ -------Only can test one side of path cord.

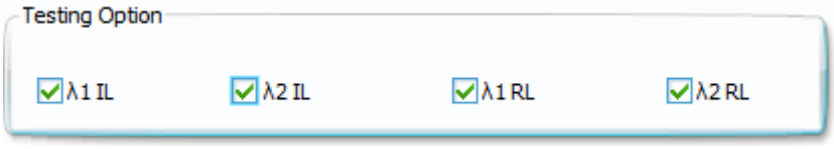
MPO-FC/LC is not available for this option

(4) .



: Choose correct wavelength.

(5) .



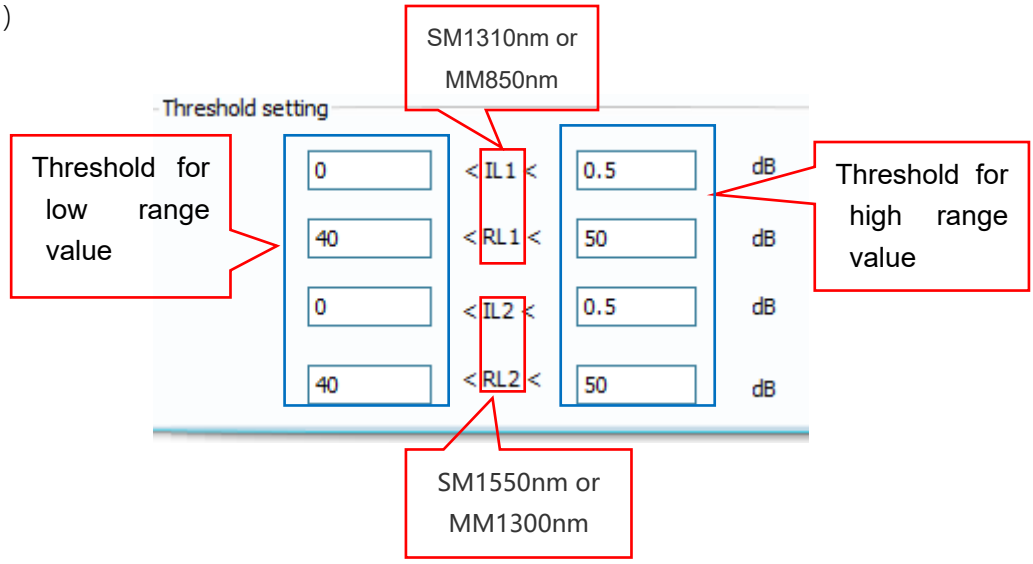
:

λ1—For SM is 1310nm, for MM is 850nm

λ2—For SM is 1550nm, for MM is 1300nm

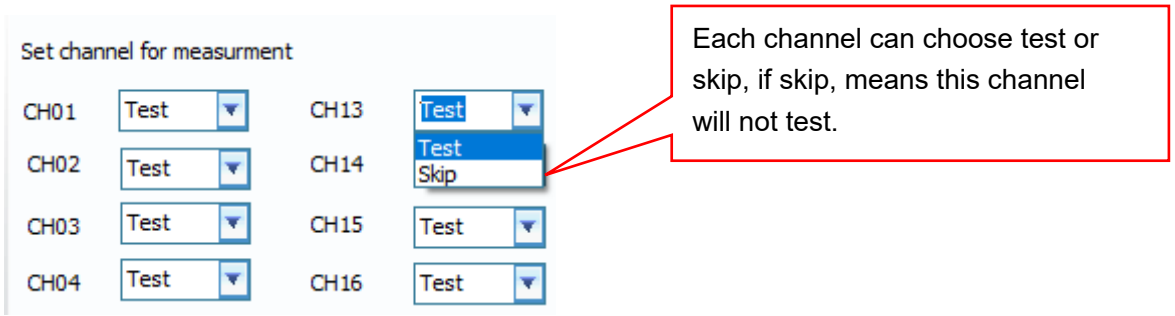
√ the required measurement data. If √ all in SM means measure 1310/1550nm IL&RL, in MM means measure 850/1300nm IL/RL

(6)



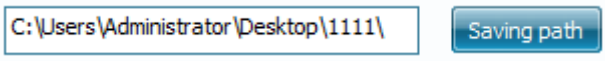
If the measured data within the threshold setting is passed data display as green, if out of the threshold range is failed, display as red.

(7)

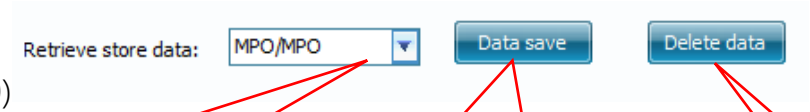


(8)

(9) .



Choose the saving path



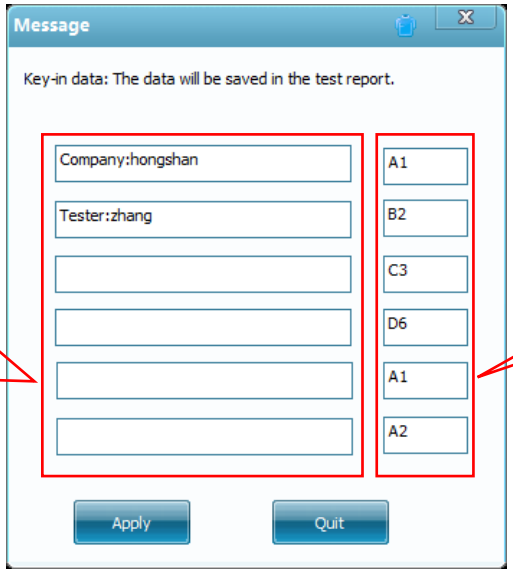
(10)

Choose the saved setting parameter name, in this case no need to re-setting.

After all setting complete, click this to save the setting parameter

Delete the chosen setting parameter, after delete the data can not recall back

7. Report format



Left part can key in the information for company, tester, patch cord name….

Each information related with position on EXCEL Line& Column No.

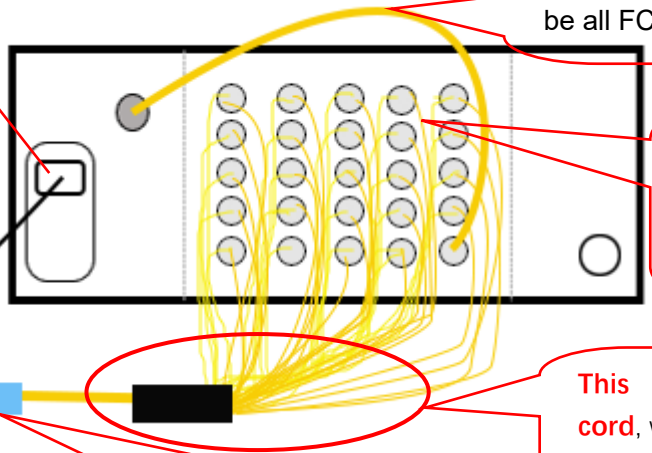
8. Ref for Insertion & Return Loss

10.1 The following is drawings for patch cord connection for doing the REF.

The protected patch cord depends on tested patch cord:
If tested patch cord is 12 cores MPO, the protected patch cord should be 12 cores MPO patch cord,
If tested patch cord is 24 cores MPO, the protected patch cord should be 24 cores MPO patch cord

If tested patch cord is MPO female, this end should be male, if tested patch cord end-face is male, this end –face should be female

Patch cord connect with OLS port and optical switch input port should be all FC/APC end-face.



The end connected with optical switch output port should FC/APC

This is the protected patch cord, connected with standard/REF patch cord. To prevent frequency pull in and out damage on standard

This is the standard/REF patch cord, we provide MPO/Male-FC/APC fan out type

MPO adapter connect with standard/REF patch cord and

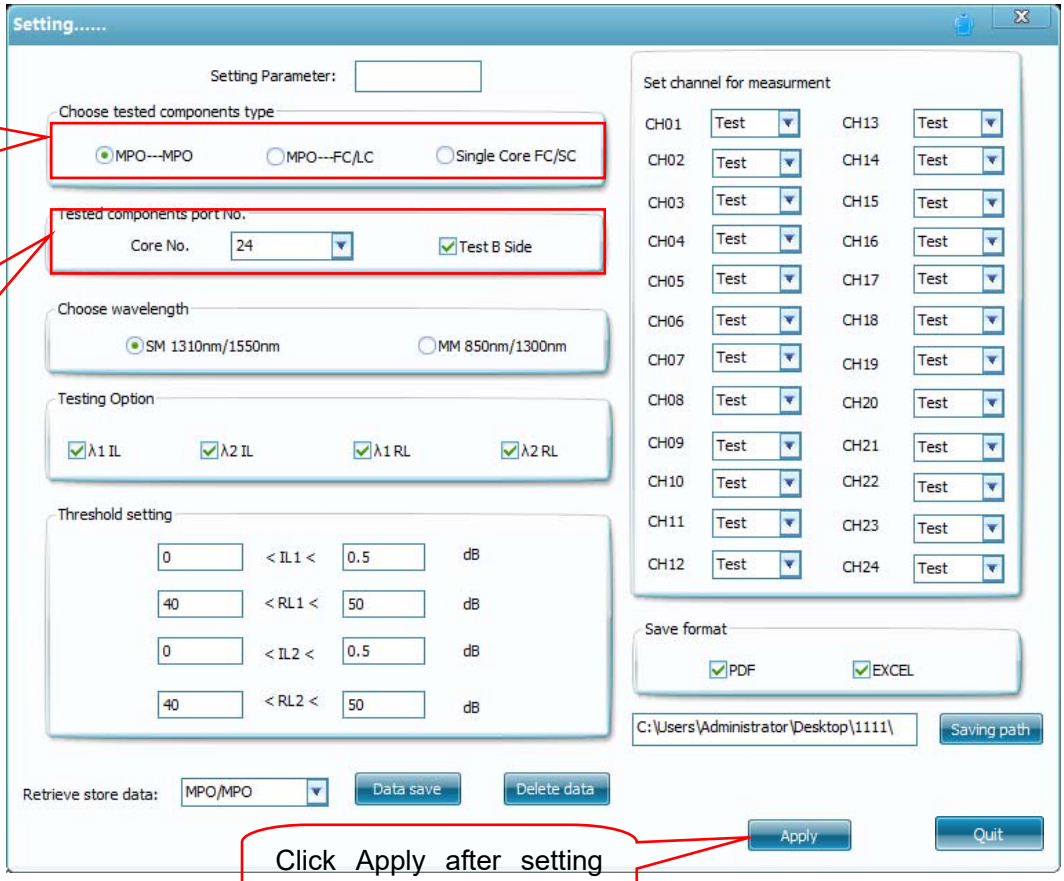
This should be MPO female end-face

10.2, Calibration from software

(1)After do the settings (Choose correct core No., Threshold value setting, Wavelength setting….)

All the mode is available for REF setting

Choose the correct Core No., 24 is the max.



Click Apply after setting complete. .

(2) Click Ref Button

(3) Press “Start” Button, device start for Ref on IL and RL for each channel

This is the total Length =device inside patch cord length around 22M+ reference/calibration patch code length.

Insertion and Return Loss can Ref at the same time, if the same reference/calibration patch cord, do not need to re-calibrate/Ref the insertion and return loss tester. If the device power off, required for Re-calibrate/Ref

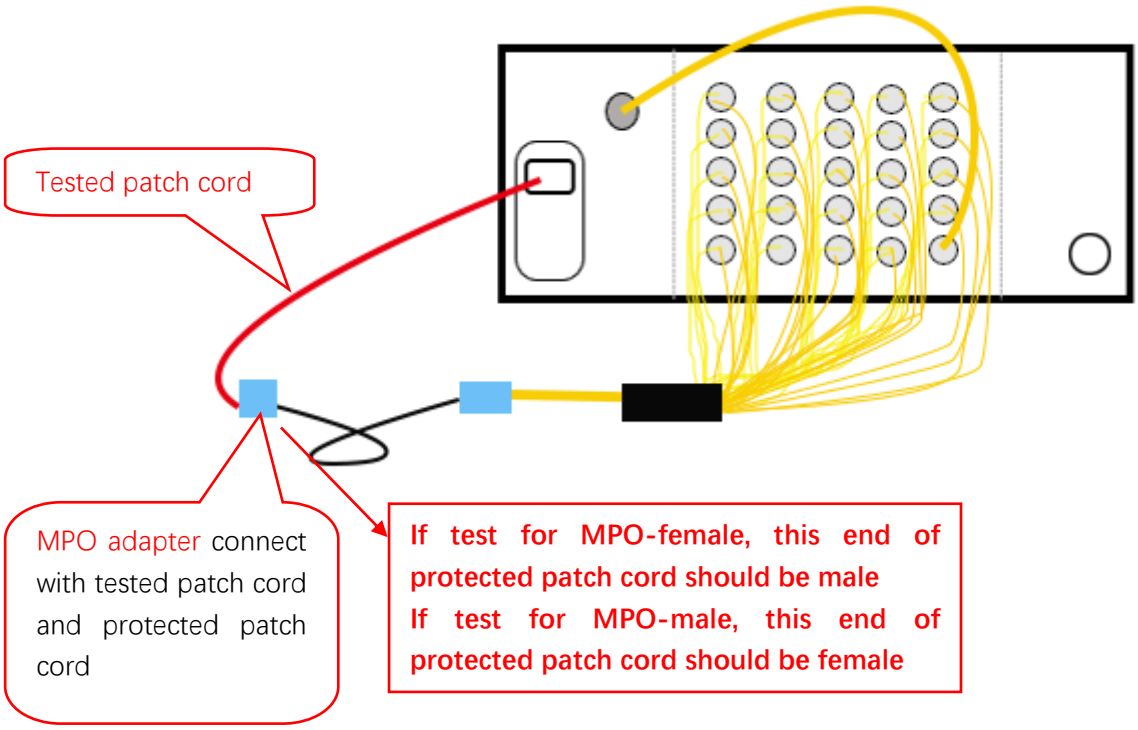
The data on this user manual software is on for reference, however the user can user it’s own standard.

Notice: For MM device, the calibration patch cord connected with tested patch cord should be UPC end-face.

11. Insertion and Retrun Loss Testing

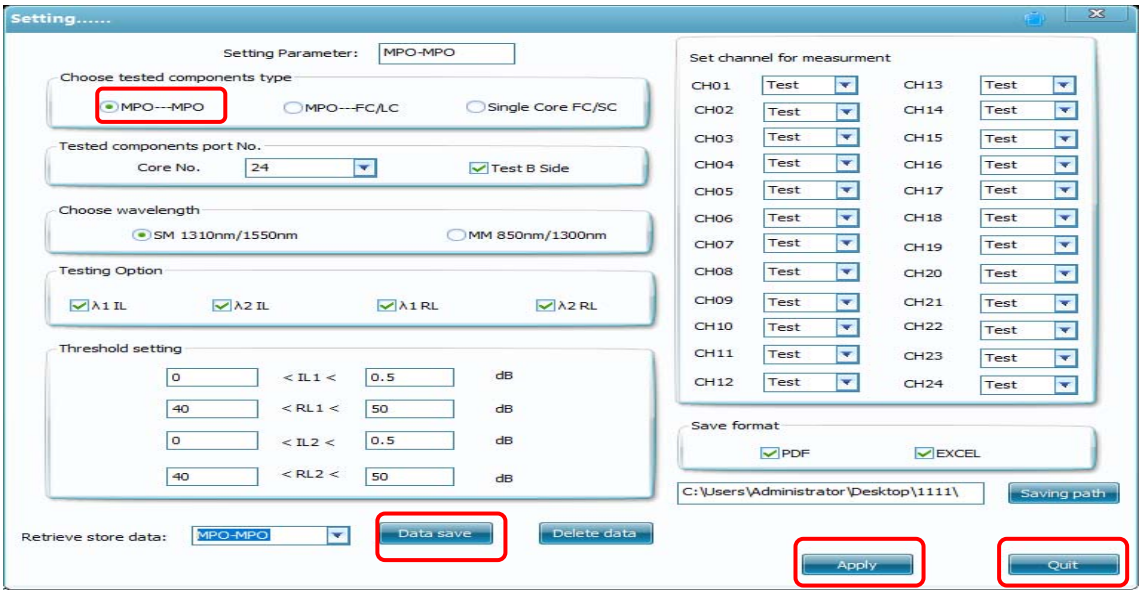
11.1 “MPO-MPO patch cord testing

8.1.1 mpo-mpo 24 tested patch cord connection drawing as following:

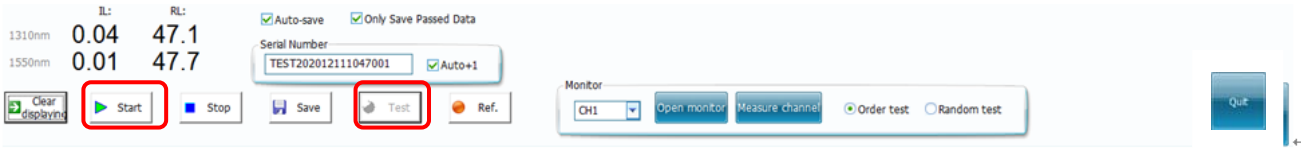


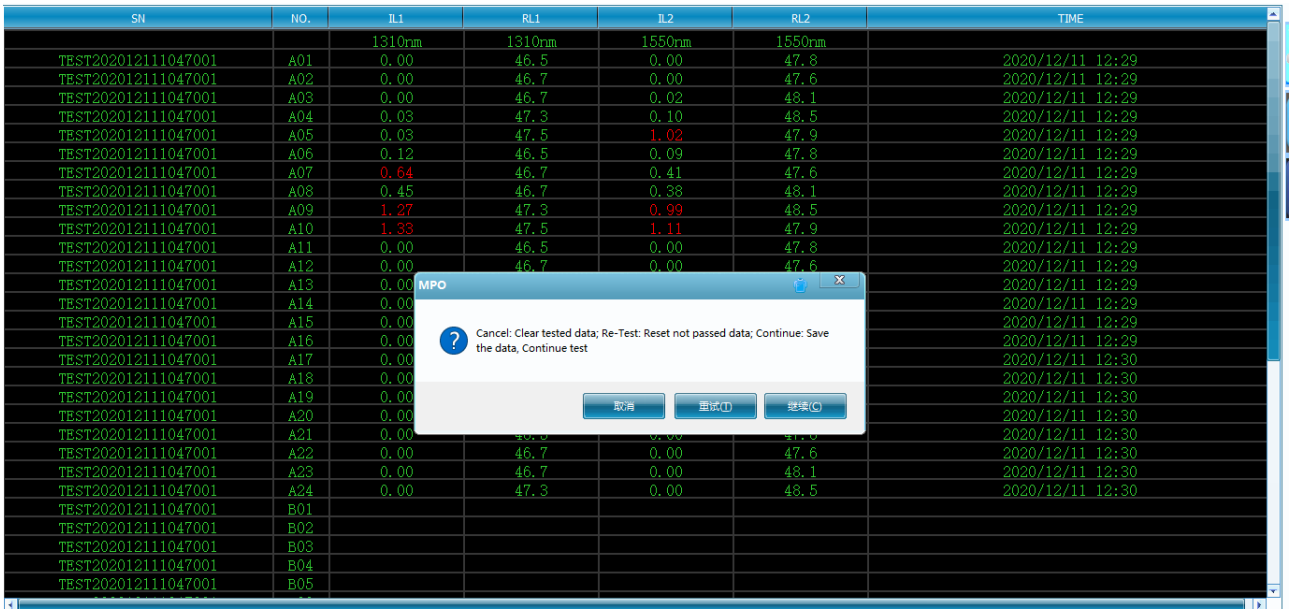
11.1.2 MPO-MPO 24 core testing

a. Do the correct setting, click :Apply" & "Quit" Back to the main interface.



b. Press "Test"and then start, device start to test and data upload to PC. Red color data means the testing value is out of the threshold value the result is fail, if Green, means passed testing value.



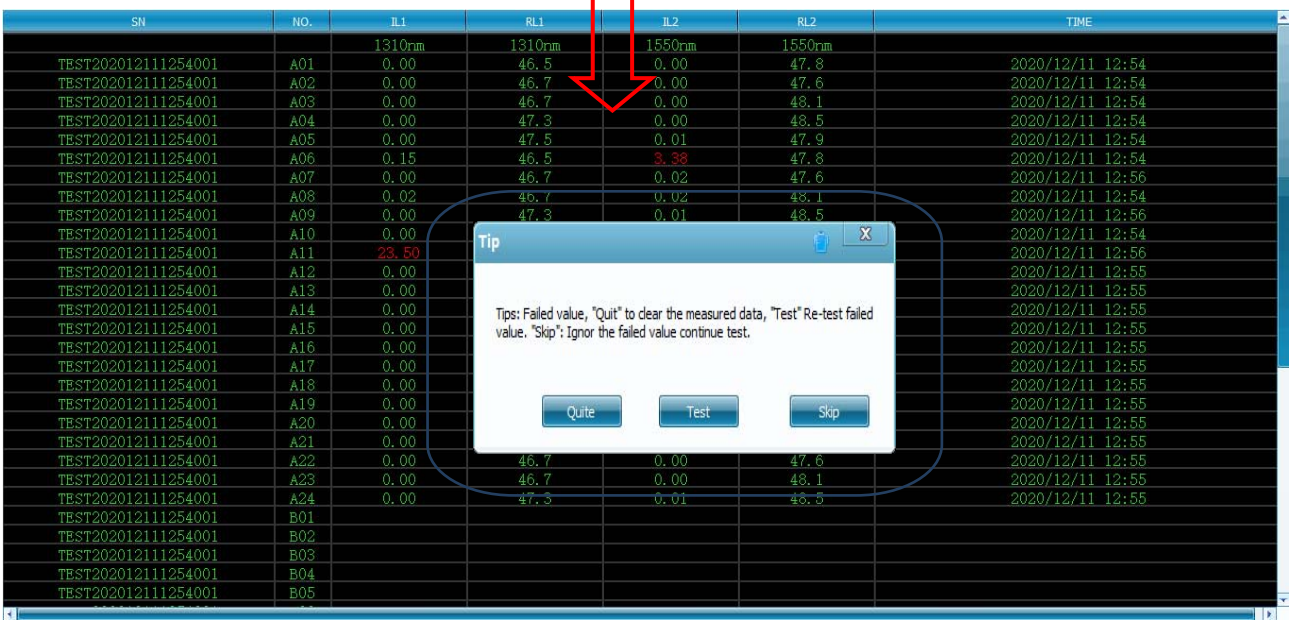


If there has any failed data(Red color) there will pop up the indication.

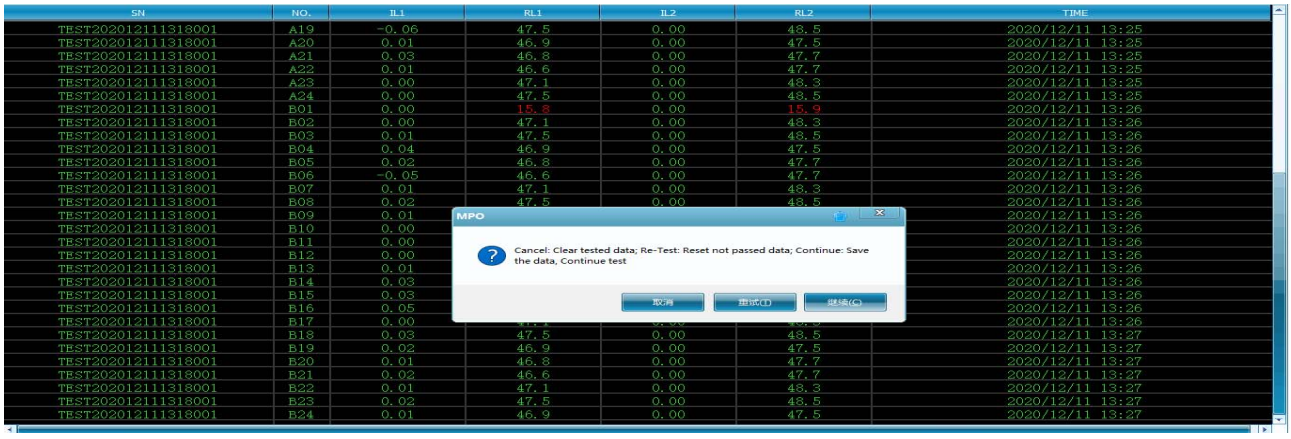
All the data will be saved and continue the test

Cancel, means all the data will delete, and need to re-test

Re-test the failed data, if re-test data still not passed, another indication pop up

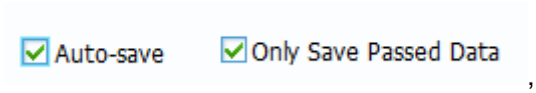


If all the data passed, Side A complete the test, reverse the patch cord to the other side, click ”Start” to test the other side of patch cord.

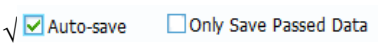


Side B complete test (The above data is for example, it is not the real and correct data)

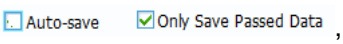
C. Data saving

√both 

, the passed （Green data）will automatically saved

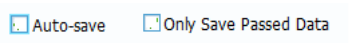
Only √ 

, all the data will be saved automatically (Passed and failed)

If do not √ auto-save, 

, need to manually click 

button to save the passed data.

If all do not √ 

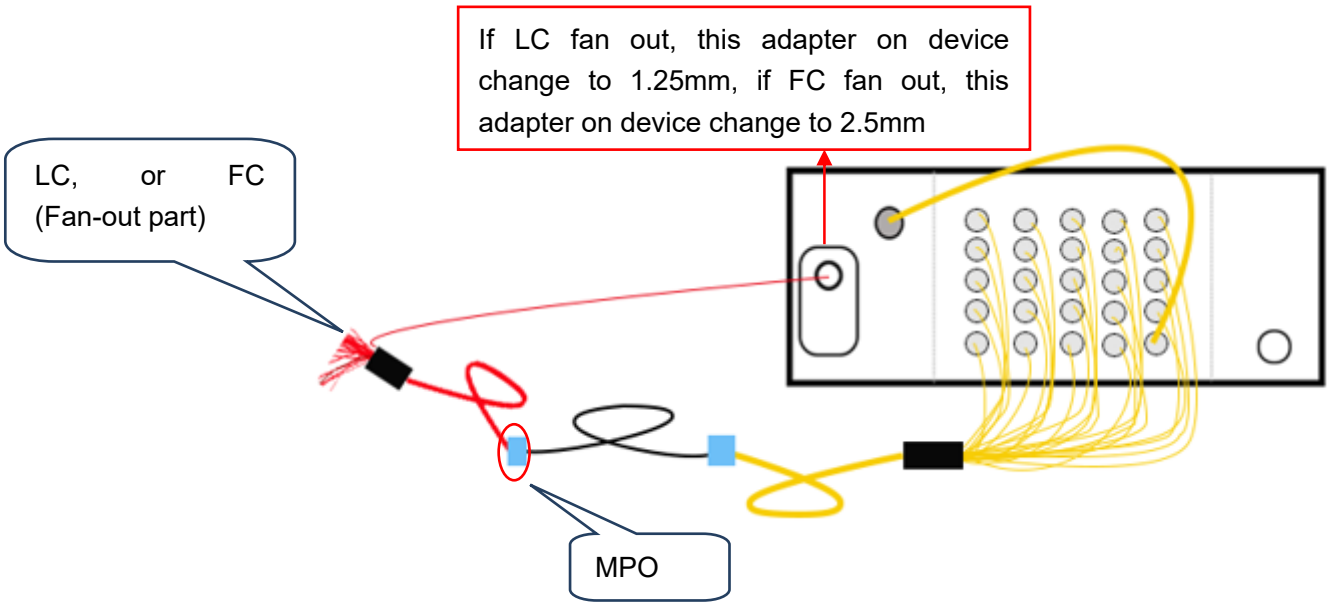
, manually click 

button to save all the data (Pass and failed)

11.2“MPO—FC/LC” patch cord testing.

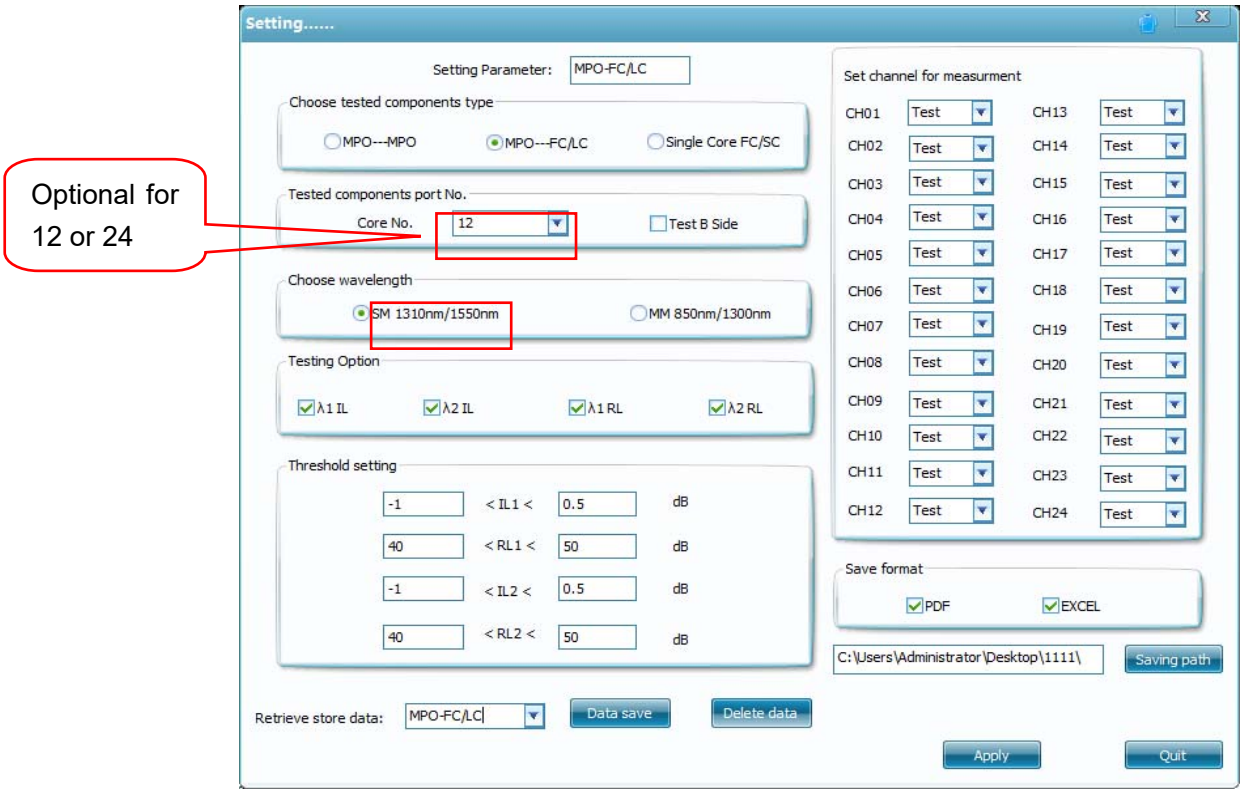
Before do testing, do REF, for this testing use MPO-MPO REF.

11.2.1 Connect the tested MPO-LC (12 cores/ 24 cores) patch cord with protected patch cord, as following drawings

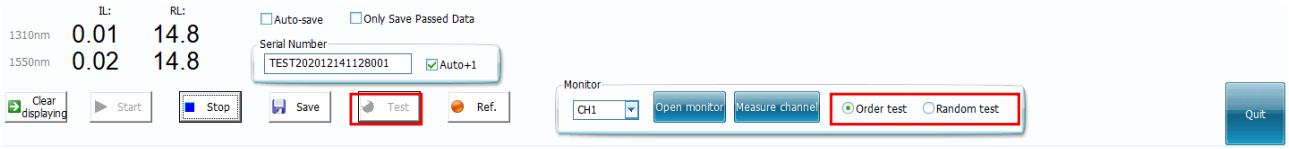


11.2.1 MPO-FC/LC fan out measurement

a. Choose correct setting parameter, click ”Apply” & “Quit” back to test main interface.



b.Press “Test”

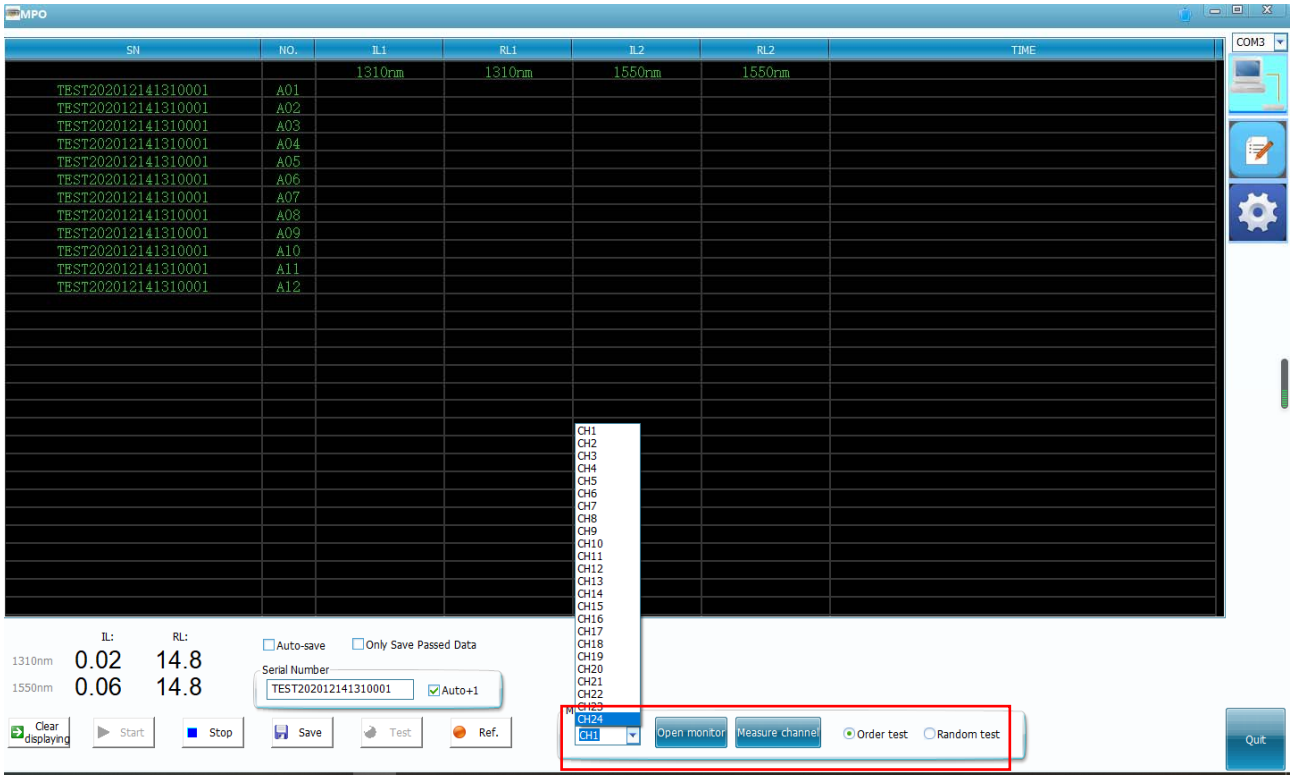


c. Choose “Order test” Or “Random Test”

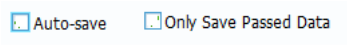
Order Test, all the channel will be test one by one orderly, from CH1, CH2….CH24, press Space to upload each channel testing value.

Random Test: Test the Channel No. based on requirement, choose channel No. required, Click 

, repeat this operation to complete all channel measurement.



d. Data saving



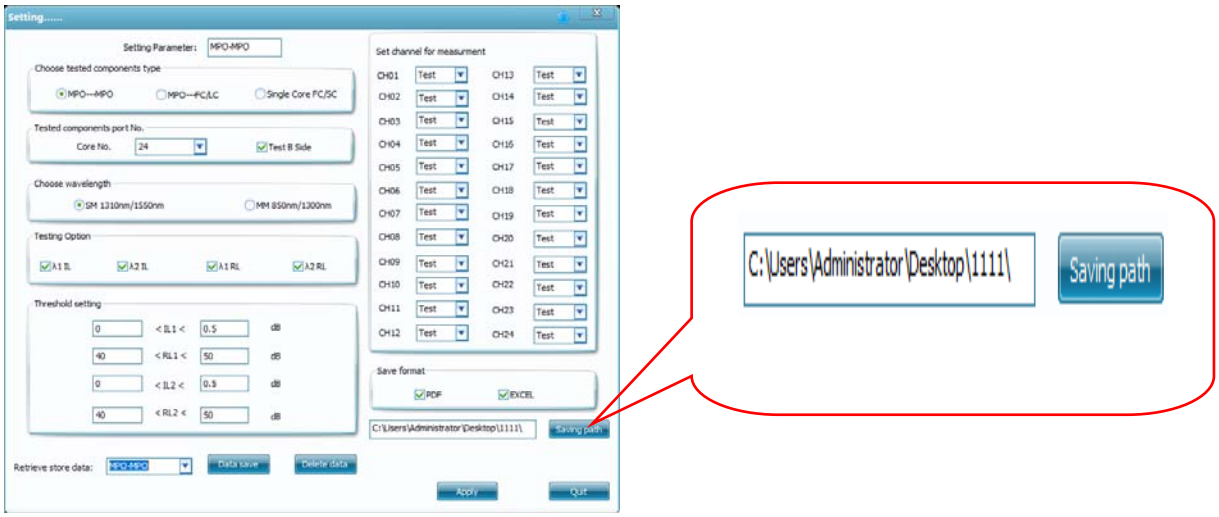
this option is not available for MPO-LC fan out patch cord testing.

It only can do manually save by click SAVE button 

, after complete the testing, press this button to save the required data.

12. File saving path and format

Choose user preferred file saving path from here, and the saved file also can checked out from this patch.



EXCEL saving file

	A	B	C	D	E	F	G	H
1								
2		Tester:zhang						
3								
4								
5	020/12/11 13:34							
6								
7		SN	NO.	IL1(dB)	RL1(dB)	IL2(dB)	RL2(dB)	TIME
8				1310nm	1310nm	1550nm	1550nm	
9		TEST20201211131801	A01	0	15.8	0.01	16.7	2020/12/11 13:31
10		TEST20201211131801	A02	0.01	47.3	0	48.5	2020/12/11 13:31
11		TEST20201211131801	A03	0.01	47.5	0	47.9	2020/12/11 13:31
12		TEST20201211131801	A04	0	46.5	0	47.8	2020/12/11 13:31
13		TEST20201211131801	A05	0	46.7	0	47.6	2020/12/11 13:31
14		TEST20201211131801	A06	0.02	46.7	0	48.1	2020/12/11 13:31
15		TEST20201211131801	A07	0.04	47.3	0	48.5	2020/12/11 13:31
16		TEST20201211131801	A08	0.01	47.5	0	47.9	2020/12/11 13:31
17		TEST20201211131801	A09	-0.06	46.5	0	47.8	2020/12/11 13:31
18		TEST20201211131801	A10	0.02	46.7	0	47.6	2020/12/11 13:31
19		TEST20201211131801	A11	0.03	46.7	0	48.1	2020/12/11 13:31
20		TEST20201211131801	A12	0	47.3	0	48.5	2020/12/11 13:31
21		TEST20201211131801	A13	0.01	47.5	0	47.9	2020/12/11 13:31

PDF saving file

Part number:

Serian number: TEST202012111318001

Date: 2020/12/11 13:34

		1310nm		1550nm	
	Fiber	IL END A	RL END B	IL END A	RL END B
TEST202012111318001	A01	0.00	15.8	0.01	16.7
TEST202012111318001	A02	0.01	47.3	0.00	48.5
TEST202012111318001	A03	0.01	47.5	0.00	47.9
TEST202012111318001	A04	0.00	46.5	0.00	47.8
TEST202012111318001	A05	0.00	46.7	0.00	47.6
TEST202012111318001	A06	0.02	46.7	0.00	48.1
TEST202012111318001	A07	0.04	47.3	0.00	48.5
TEST202012111318001	A08	0.01	47.5	0.00	47.9
TEST202012111318001	A09	-0.06	46.5	0.00	47.8
TEST202012111318001	A10	0.02	46.7	0.00	47.6
TEST202012111318001	A11	0.03	46.7	0.00	48.1
TEST202012111318001	A12	0.00	47.3	0.00	48.5
TEST202012111318001	A13	0.01	47.5	0.00	47.9
TEST202012111318001	A14	0.01	46.5	0.00	47.8

13. Maintenance

(1) Keep the surface of the sensor free from oil, dirt, or other contamination to ensure proper operation. Do not use the unclean and non-standard adapter or insert the badly polished interface.
(2) Try to use the same kind of adapter.
(3) Please use dust-proof cap to keep it clean when it is not in operation
(4) Please carefully plug in and pull out connectors to avoid it being scratched.
(5) Please regularly and gently clean the surface of the sensor with special cleaning swabs

14. Quality of Services

Caution: Repair it in the field is Forbidden.

18 monthes warranty for Our Insertion loss/Return loss test station

We warrant that Insertion loss/Return loss test station will be free from defects in material and workmanship for 18 months. Should the device fail at any time during this warranty period, we will, at its sole discretion, replace, and repair or refund the purchase price of the product. The worth of the repair or replace will not be higher than purchasing price of this unit.

9.2 If the problems occurred can not be solved by the trouble shooting methods, please contact us or the local distributor directly.

9.3 This warranty is limited to defects in our production, workmanship or material, we will repair or replace the unit free of charge. This warranty only applies to the unit under normal operation without any damage or wrong operation. The warranty does not include the following problems:

1. Repair the unit by yourself without our official authorization.
2. Wrong operation or accident,

9.4 As to the freight cost caused by repair or replace the unit under the warranty, it will be shared by the customer and our.

Warranty Registration Card

A warranty registration card is included with the original shipment of equipment. Please take a few moments to fill out the card and mail or fax it to us to ensure proper initiation of your warranty term and our maintenance, calibration or tracking of this unit.

We guarantee that any information you supply will remain confidential.

By returning this card, you will automatically be notified about updates, modifications, and recalibration.

Warranty Registration Card

Serial Number:_____

Model Number: _____

Date of Purchase:_____

Company Name:_____

Company Address:_____

TEL: _____ FAX:_____

E-mail:_____

Note：Please fax this note within one month from the date of receiving units。

YOUR OPINION

Do you have any comments on the quality of this product or the service from us?

_____

_____