

MS12 Stability Testing

MS12 Stability Testing

This document will outline the correct procedure to verify JGR's MS12 insertion loss stability.

The published specifications are as follows:

- Singlemode: ± 0.004 dB over 15 min after 30 min warm-up
- Multimode: ± 0.01 dB over 15 min after 30 min warm-up

It is recommended to use FC connectors.

MS12 Stability Testing

1. Configure a 30 min continuous acquisition test to initiate the warmup phase.

The screenshot displays the 'Acquisition Settings' window of the MS12001 - Cable Assembly Test System. The window title is 'MS12001 - Cable Assembly Test System'. The main heading is 'Acquisition Settings' with a sub-note: 'From this window, you can customize acquisition parameters.' The 'Access Level' is set to 'Supervisor'. The 'Acquisition' tab is selected among other tabs like System, Measurement Options, Database, User Access, Display, Switch Config, and Power-Level.

Ref. Sensitivity: Standard (selected), High

IOR Fiber Characteristics:

Wavelength	IOR
850	1.496
1300	1.487
1310	1.4677
1490	1.46806
1550	1.4682
1625	1.4682

IOR Default Values

IL Length Compensation: Yes (selected), No

Do not adjust measured value. Only apply length compensation to connector specifications

Wavelength	dB/km
850(50u)	2.3
1300(50u)	0.6
850(62.5u)	2.9
1300(62.5u)	0.6
1310	0.35
1490	0.24
1550	0.2
1625	0.23

IL Default Values

Continuous Acquisition: Single, Continuous (selected)

One acquisition every: 1 Seconds Test Duration: 30 Minute(s)

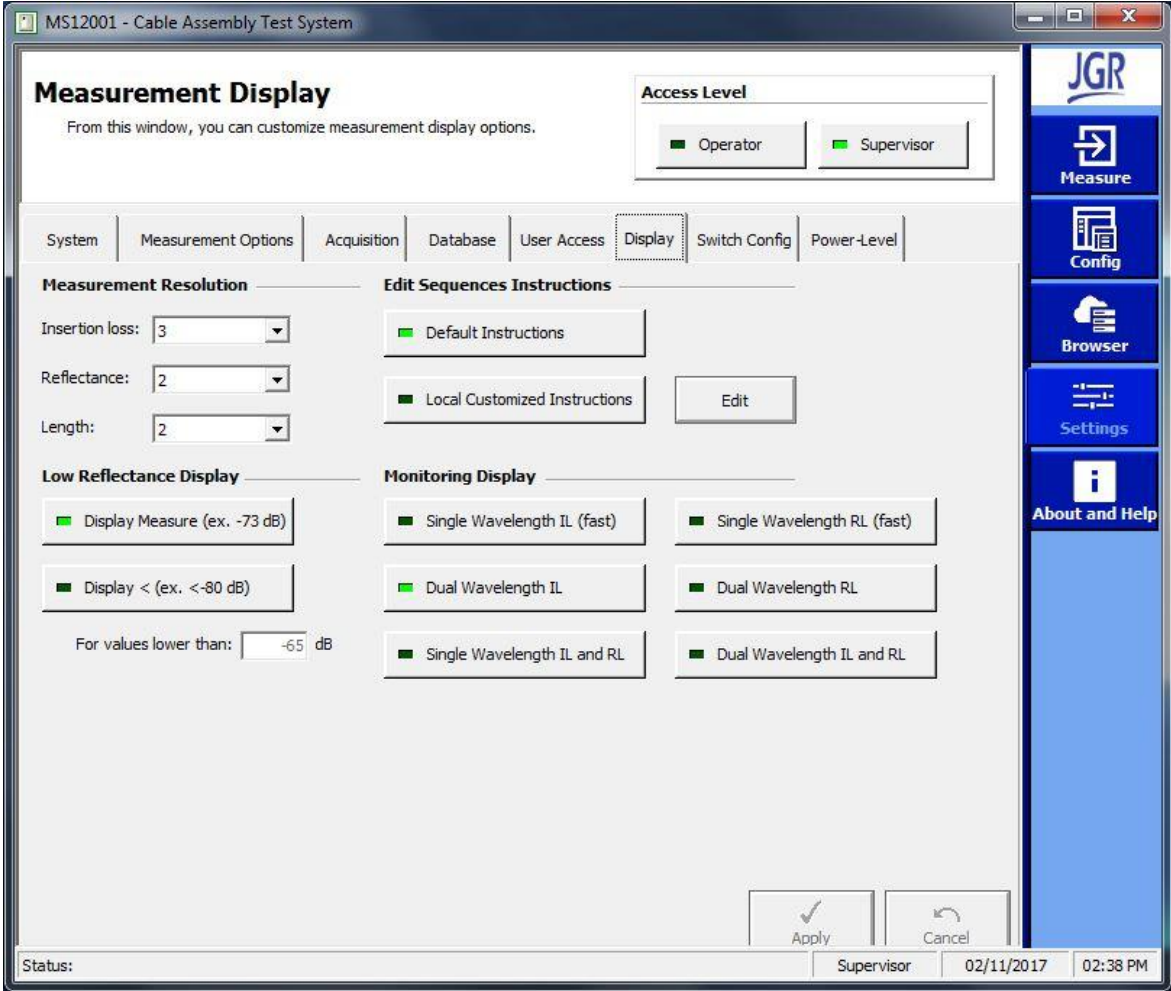
* Please note that if the measurement duration is longer than the frequency specified above, then the next acquisition will start immediately following the end of the current measurement.
The estimated number of acquisitions is: 1800
Time between start of acquisitions: 1 Seconds

Buttons: Apply, Cancel

Status: Supervisor 02/11/2017 02:37 PM

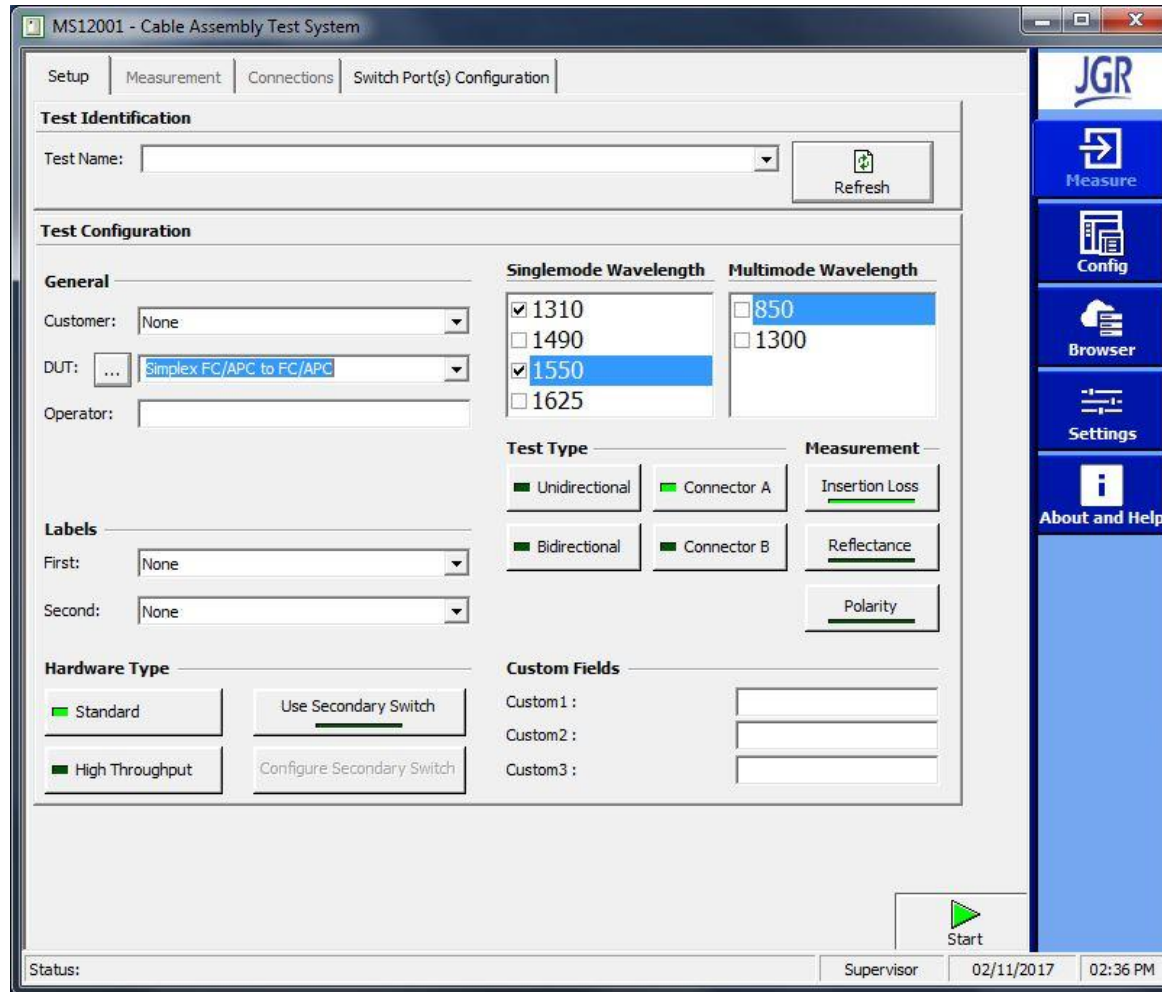
MS12 Stability Testing

2. Set the measurement display as follows:



MS12 Stability Testing

3. Setup an IL test with the appropriate wavelengths and DUT (simplex SM or MM depending on the MS12)



MS12 Stability Testing

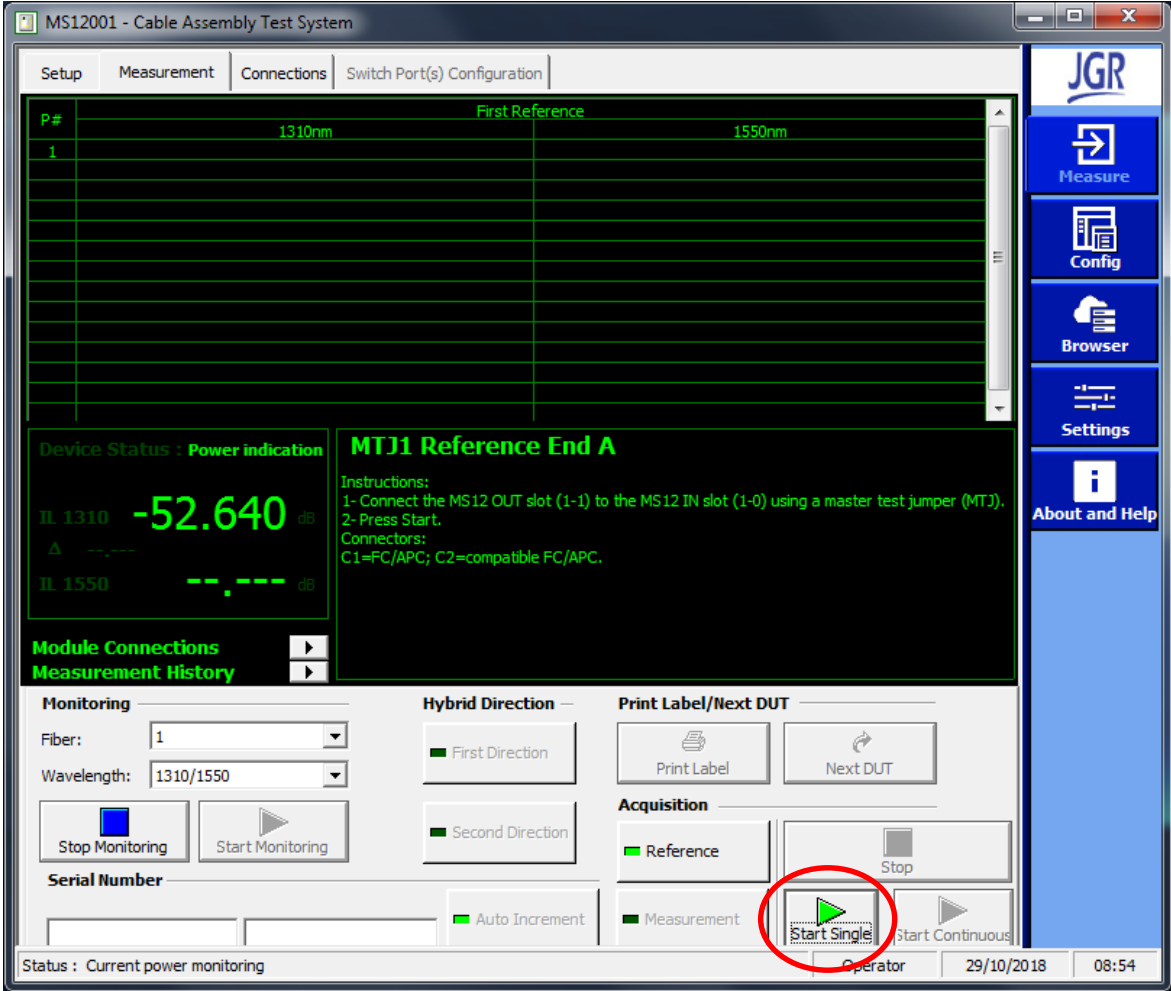
4. Fiber management and connector cleanliness must be optimized. Inspect the MS12 output and clean/polish as necessary.

Inspect and connect a 3m jumper and arrange the fiber as below. Use a heat gun to smooth out the fiber. The fiber should be relaxed without any twists or sharp bends.



MS12 Stability Testing

5. Take a reference measurement.



MS12 Stability Testing

6. Enter a serial number and click *Start Continuous*.

MS12001 - Cable Assembly Test System

Setup Measurement Connections Switch Port(s) Configuration

F#	1310	1550
1		

First Measurement IL (dB)

Device Status :

IL 1310 0.000 dB
Δ 0.000
IL 1550 0.000 dB

Measurement End A

Instructions:
1- Insert the Device Under Test (DUT) between the master test jumper (MTJ) and the power meter detector IN slot (1-5).
2- Press Start.
Connectors:
End A=FC/APC; End B=FC/APC.

Module Connections Measurement History

Monitoring
Fiber: 1
Wavelength: 1310/1550
Stop Monitoring Start Monitoring

Serial Number
stabilityTestWarmup| 1 Auto Increment

Hybrid Direction
First Direction
Second Direction

Print Label/Next DUT
Print Label Next DUT

Acquisition
Reference Stop
Measurement Start Single Start Continuous

Status : Current dual wavelength IL monitoring Supervisor 03/11/2017 09:55 AM

Click to view recent measurement history

MS12 Stability Testing

7. After 30 min, return to *Acquisition Settings* and change the test duration to 15 min as in step 1.

Begin a new continuous test with the same settings. Enter a new fixed serial number (ex: *stabilityTest*).

To retrieve the data, go to *Browser* and click *Filter Builder*.

Click *Add* and enter the following criteria:

The screenshot shows the MS12001 - Cable Assembly Test System software interface. The main window is titled "MS12001 - Cable Assembly Test System". At the top, there is a "Filter:" dropdown menu set to "stabilityTest". Below this are buttons for "Refresh", "Add", "Delete", and "Copy To".

The "Condition Builder" section is active. It has a "Selection Criteria" area with a table showing a single criterion: "Fixed Serial Number" with an "=" operator and "stabilityTest" as the value. Below this table is a text area containing the expression "Dum_FixSerialNr = 'stabilityTest'". To the right of the text area are buttons for "<- AND" and "<- OR". A "Number of Records to Retrieve" section is also present, with a "Value:" input field and a "Percent (%)" checkbox.

A "Note on Selection Criteria:" section provides instructions: "An expression is a combination of <Field Name><Operator><Value>. Expressions may be combined using AND or OR operators. Please make sure to insert each expression by using the appropriate button."

The "Field Selection & Sorting Criteria" section is also visible. It has a "Display These Fields" list with checkboxes for "Measurement Date", "Fixed Serial Number", "Incremental Serial Number", "Global Test Status", and several "Custom Field" and "Custom Title" options. The "Sort Criteria" section shows "Field name:" set to "Measurement Date" with "Ascending" and "Descending" options. Below this is a list containing "Dum_MeasurementDate" and an "<- Insert" button.

An "Important:" note states: "The fields in the sorting criteria must first be selected from in the Field Selection list."

At the bottom of the window are buttons for "Clear", "Apply", "Cancel", and "Close". The status bar at the very bottom shows "Status:", "Operator", "03/11/2017", and "10:07 AM".

MS12 Stability Testing

8. Click *Apply* and in the *Browser* screen, select the appropriate *Filter Selection*.

Click *Export* and open the file with *Excel*. Select all by pressing *Ctrl + A*.

Click *Data > Sort* and select *Sort by: Wavelength*.

Click *Add Level* and select *Then by: Incremental Serial Number*.

Click *Insert > Scatter > Scatter with straight lines*.

Right-click on the graph and click *Select Data*.

Delete the *Chart data range* and any *Legend Entries*.

Click *Add* and enter the first wavelength information. The *Series X values* can be left blank. The *Series Y values* should select all the *IL End A* cells for the first wavelength.

Repeat for the second wavelength.

Add/modify *Chart Elements* as desired.

MS12 Stability Testing

Example final data:

Stability Test (15 min)
MS12-3050-09FA
1234567

