

# Testing a Fanout-to-Multifiber

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# Testing a Fanout-to-Multifiber

This document will outline how to test a Fanout-to-Multifiber using the unidirectional or bidirectional method.

## Unidirectional

The advantage of unidirectional testing is speed. In a single pass, MS12001 will measure the RL of each connector and the total loss of both connectors:

- $IL_{TOTAL} = IL_A + IL_B$
- $RL_A$
- $RL_B$

## Bidirectional

With bidirectional testing, each side of the DUT is tested separately. The advantage is that the IL and RL of each connector is measured:

- $IL_A$
- $IL_B$
- $RL_A$
- $RL_B$

# Testing a Fanout-to-Multifiber

Begin by configuring the DUT. In this example, the DUT is a multimode 12 fiber FC/APC – MPO/PC fanout-to-multifiber.

The screenshot displays the 'MS12001 - Cable Assembly Test System' window. The 'DUT' (Device Under Test) configuration window is active, showing fields for identifying and configuring the device. The interface includes a sidebar with navigation buttons: Measure, Config, Browser, Settings, and About and Help. The main area is divided into sections for DUT Identification, DUT Configuration, and Polarity Type.

**DUT Identification**

This configuration window is used to identify devices under test (DUT). From this window, you can add, delete or modify a specific DUT.

Company: [ ] Customer: [ ] Connector: [ ] DUT: [ ] Test: [ ] Polarity: [ ]

Part number: [FC/APC\*12 - MPO/PC(M)]

Description: [ ] Assembly type: [Fanout-to-Multifiber]

Manufacturer: [ ] Number of fibers: [12]

Maximum fiber length (m): [10]

Fiber type: [Multimode - 50um] [Mandrel Free]

**DUT Configuration**

End A: [FC/APC MM] End B: [MPO/PC MM]

IL limits: 0.3 dB IL limits: 0.5 dB

Ref. limits: -35 dB Ref. limits: -25 dB

**Polarity Type**

Defined Type: [A]

Buttons: + Add, X Delete, Copy To, Apply, Cancel

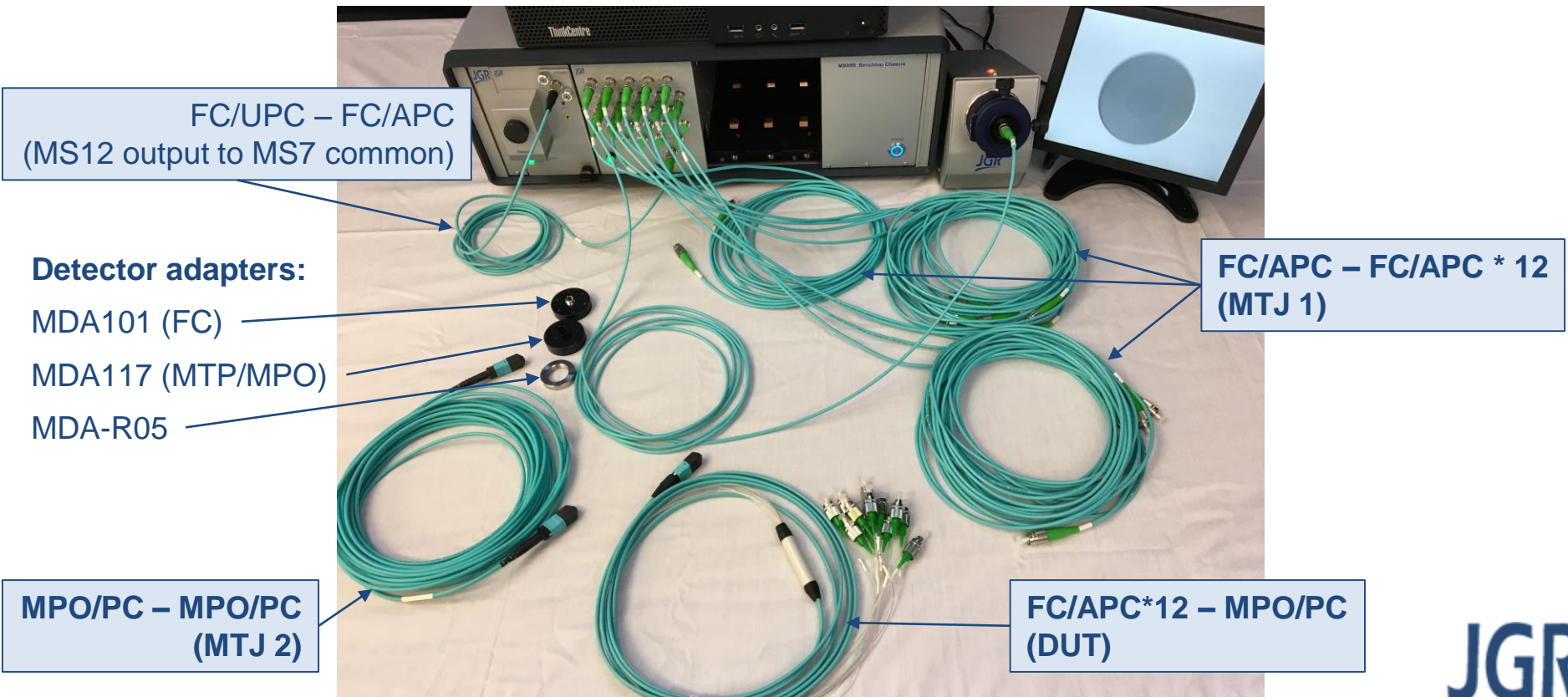
Status: [ ] Supervisor: [ ] 14/06/2018 11:31 AM

# Testing a Fanout-to-Multifiber

## Unidirectional Testing

Unidirectional testing will require the DUT to be tested between two master test jumpers:

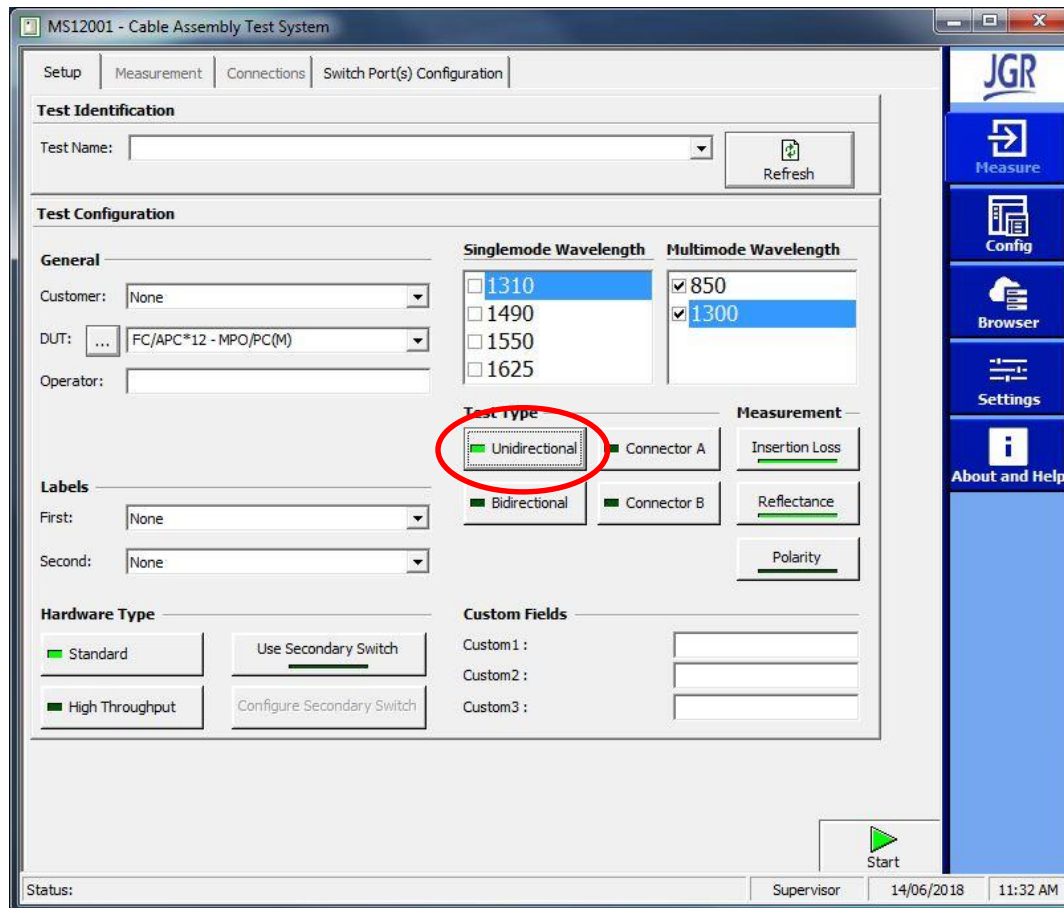
- MTJ 1 = 12 simplex FC/APC – FC/APC jumpers
- MTJ 2 = 12-fiber MPO/PC – MPO/PC ribbon cable



# Testing a Fanout-to-Multifiber

## Unidirectional Testing

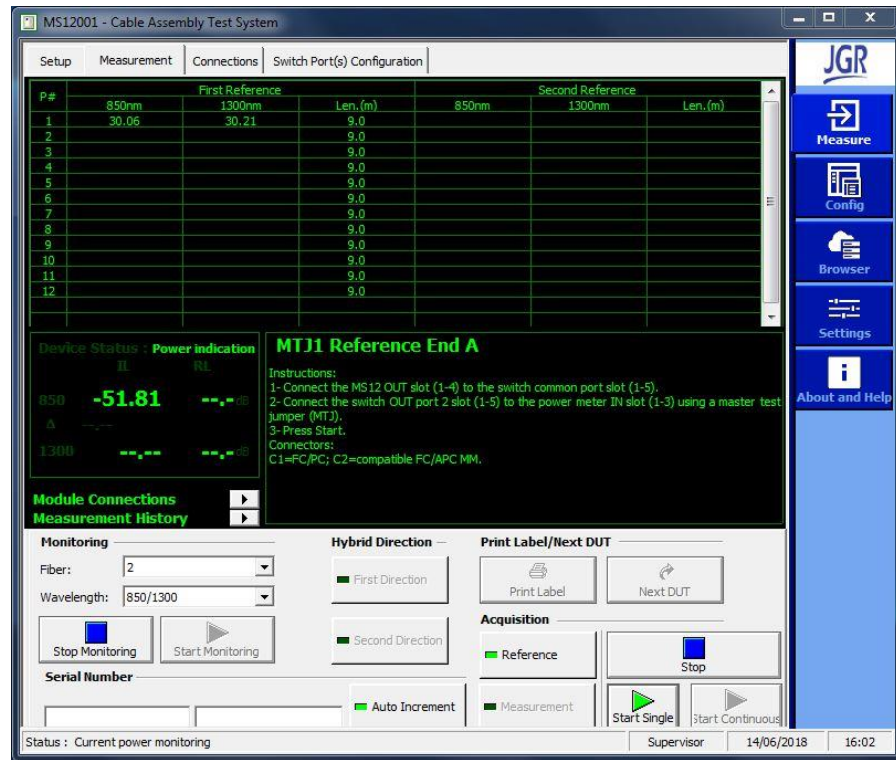
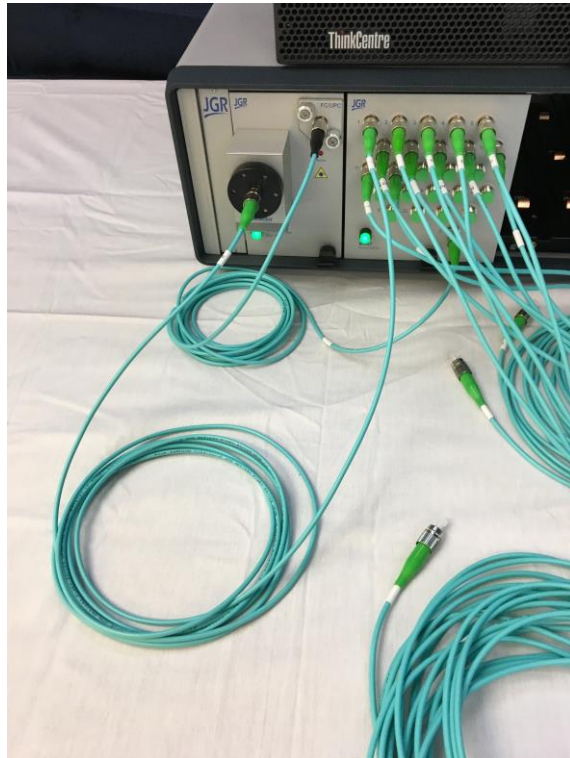
- Setup a unidirectional test type.



# Testing a Fanout-to-Multifiber

## Unidirectional Testing

- Reference each simplex FC/APC – FC/APC MTJ 1.

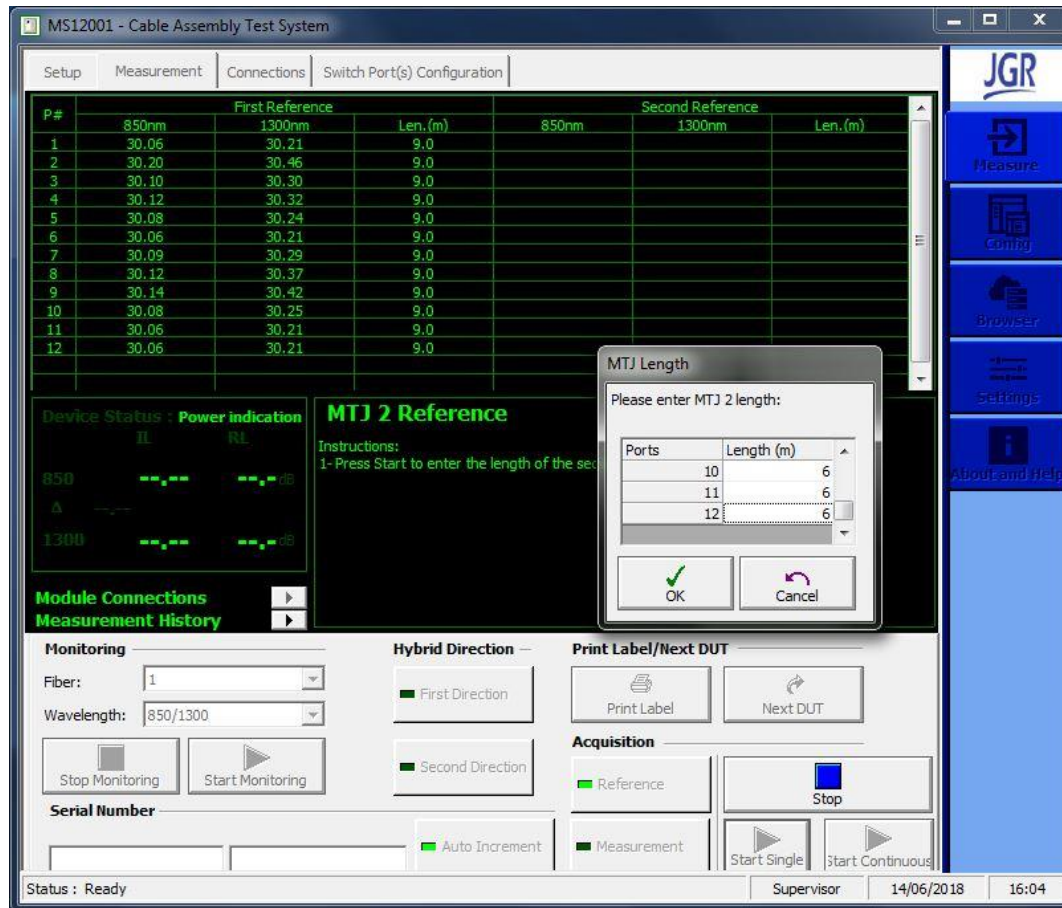




# Testing a Fanout-to-Multifiber

## Unidirectional Testing

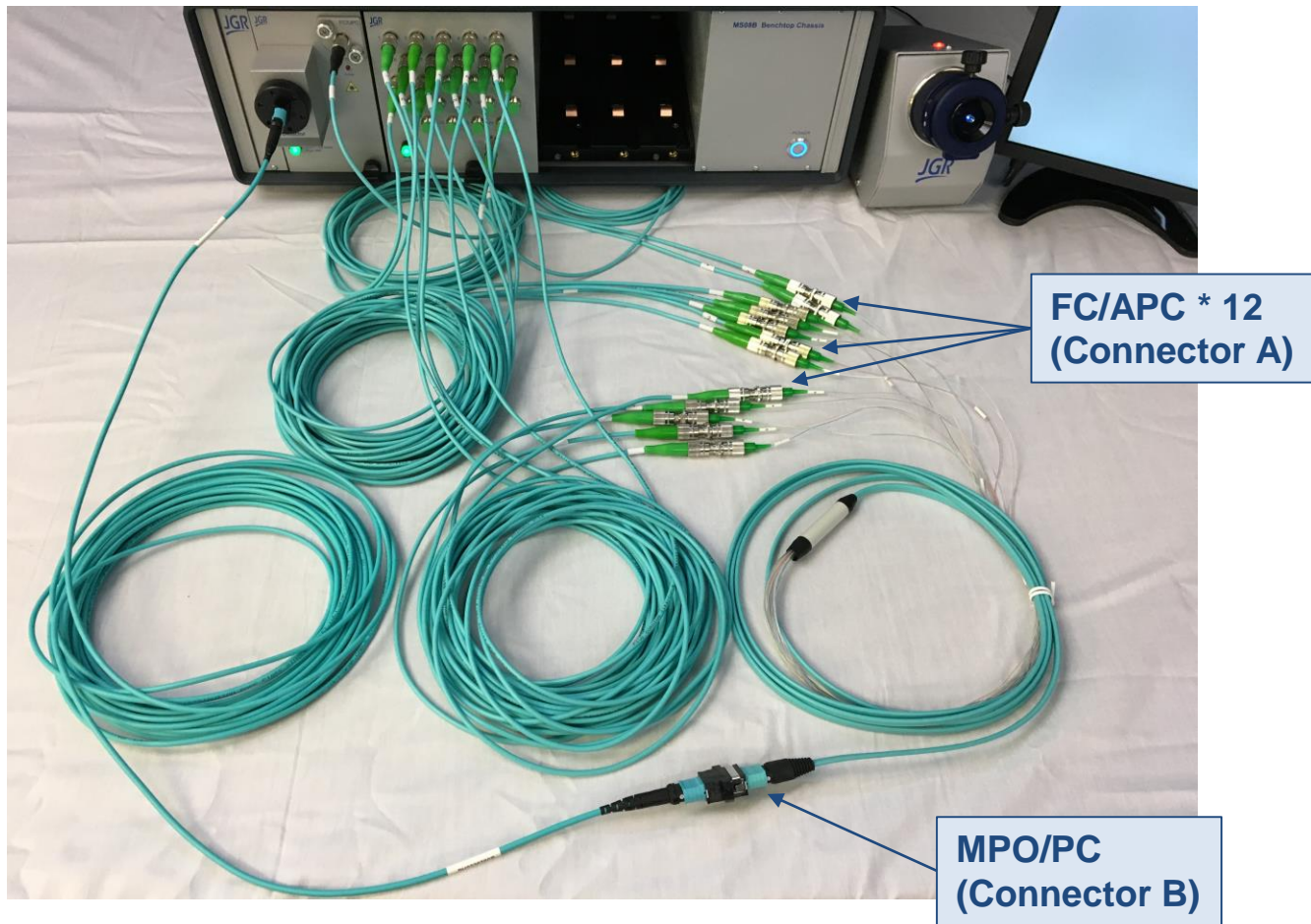
- The MTJ 2 reference only requires a length value. Since MTJ 1 and MTJ 2 cannot be connected together, enter the length manually.



# Testing a Fanout-to-Multifiber

## Unidirectional Testing

- Connect the DUT between MTJ 1 and MTJ 2.

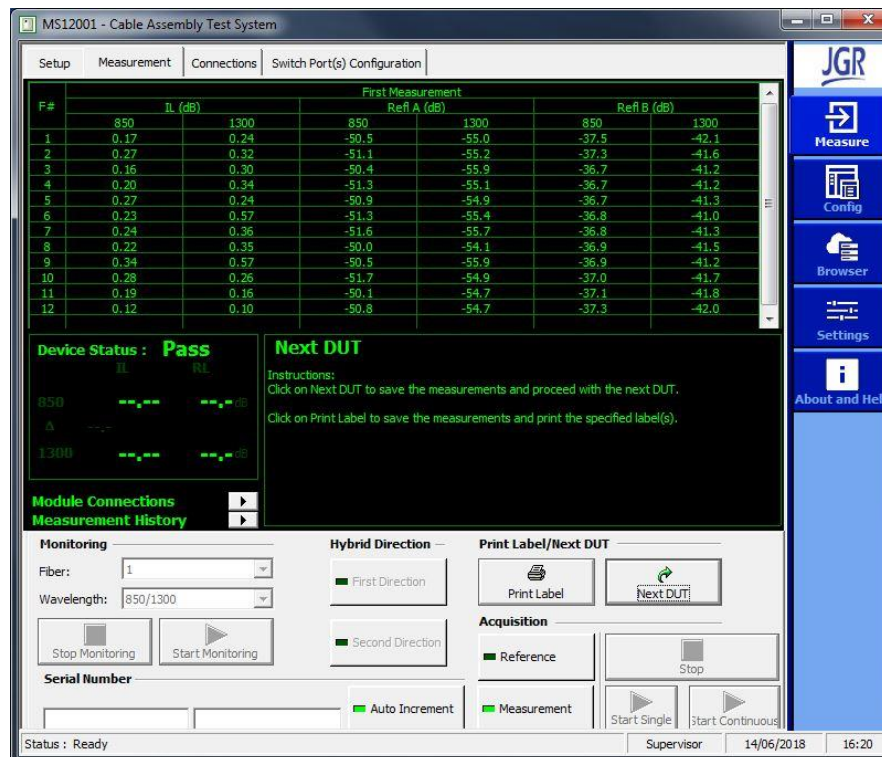




# Testing a Fanout-to-Multifiber

## Unidirectional Testing

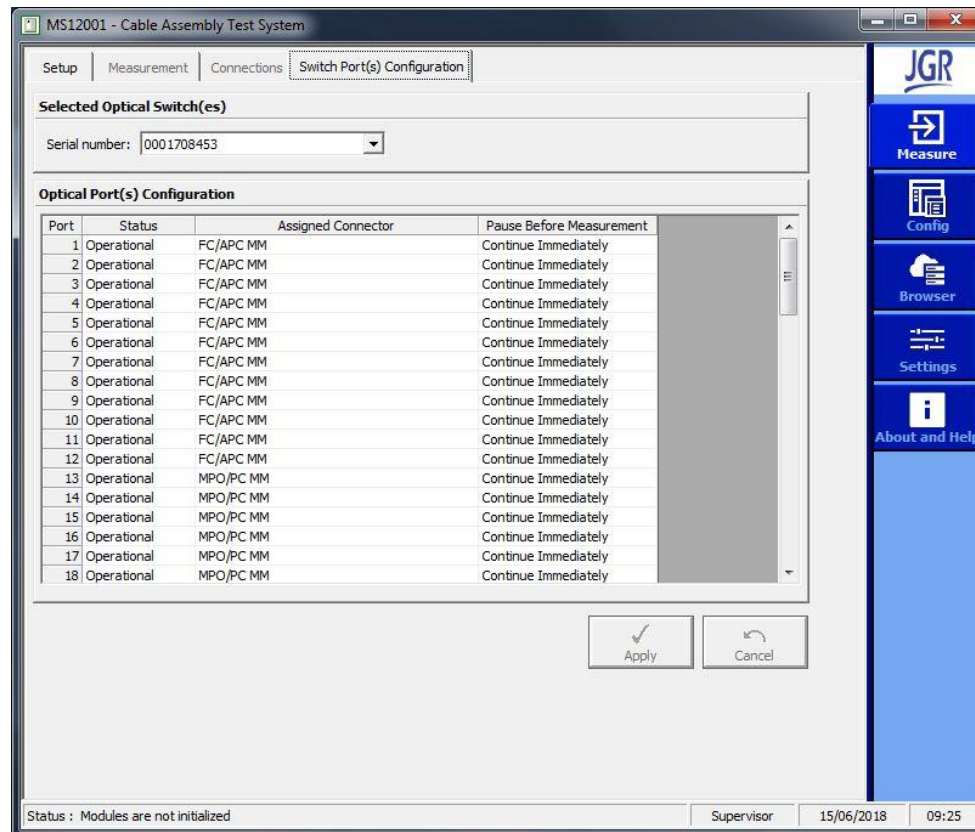
- Click *Start Single* to test the DUT
- In a single pass, MS12001 will measure  $IL_{TOTAL}$ ,  $RL_A$  and  $RL_B$
- Enter a serial number and click *Next DUT* to save the results and move on to the next DUT



# Testing a Fanout-to-Multifiber

## Bidirectional Testing

- By using a switch with twice as many ports as the DUT, both MTJs can be connected to the switch at the same time.
- Go to *Switch Port(s) Configuration* to assign the connectors to the appropriate ports.



[www.jgroptics.com](http://www.jgroptics.com)

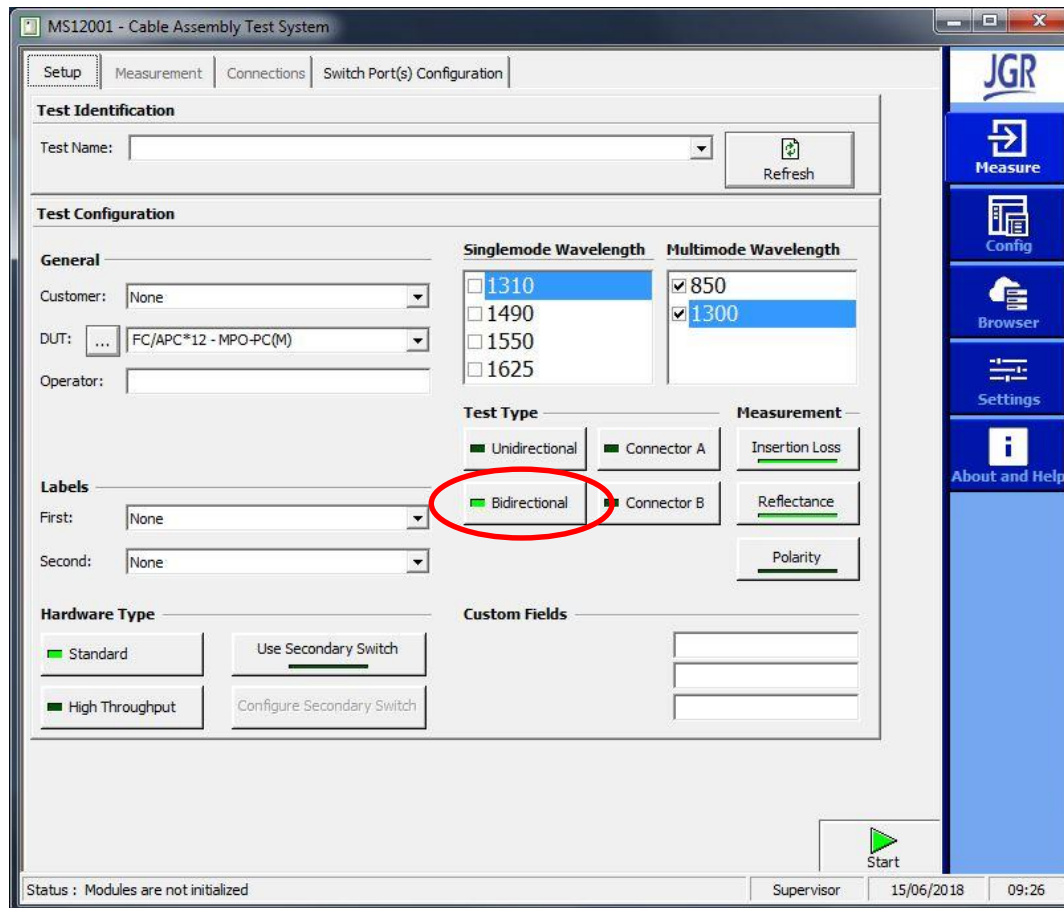
- MTJ for Connector A = 12 simplex FC/APC – FC/APC jumpers
- MTJ for Connector B = 12-fiber FC/APC – MPO/PC fanout



# Testing a Fanout-to-Multifiber

## Bidirectional Testing

- Setup a bidirectional test type.

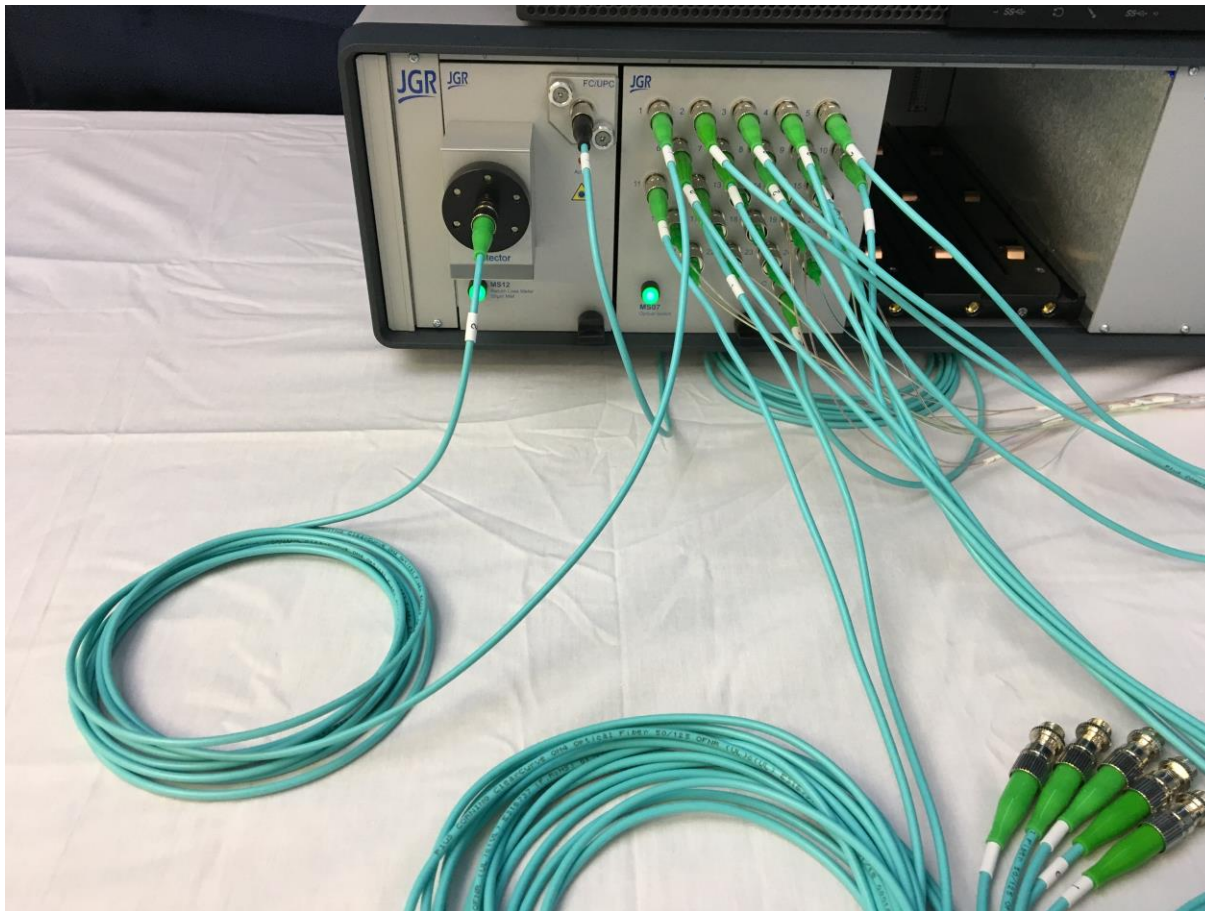




# Testing a Fanout-to-Multifiber

## Bidirectional Testing

- Reference each MTJ for the first direction.



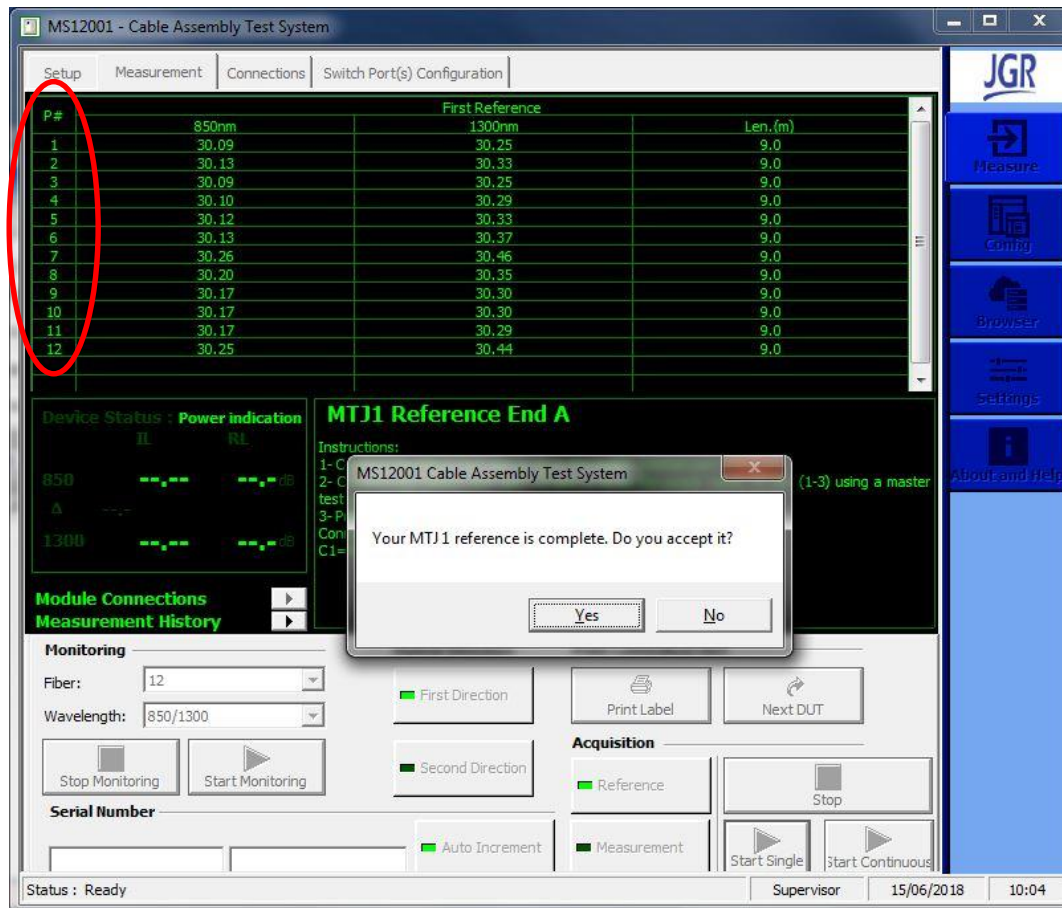


# Testing a Fanout-to-Multifiber

## Bidirectional Testing

- Reference each MTJ for the first direction.

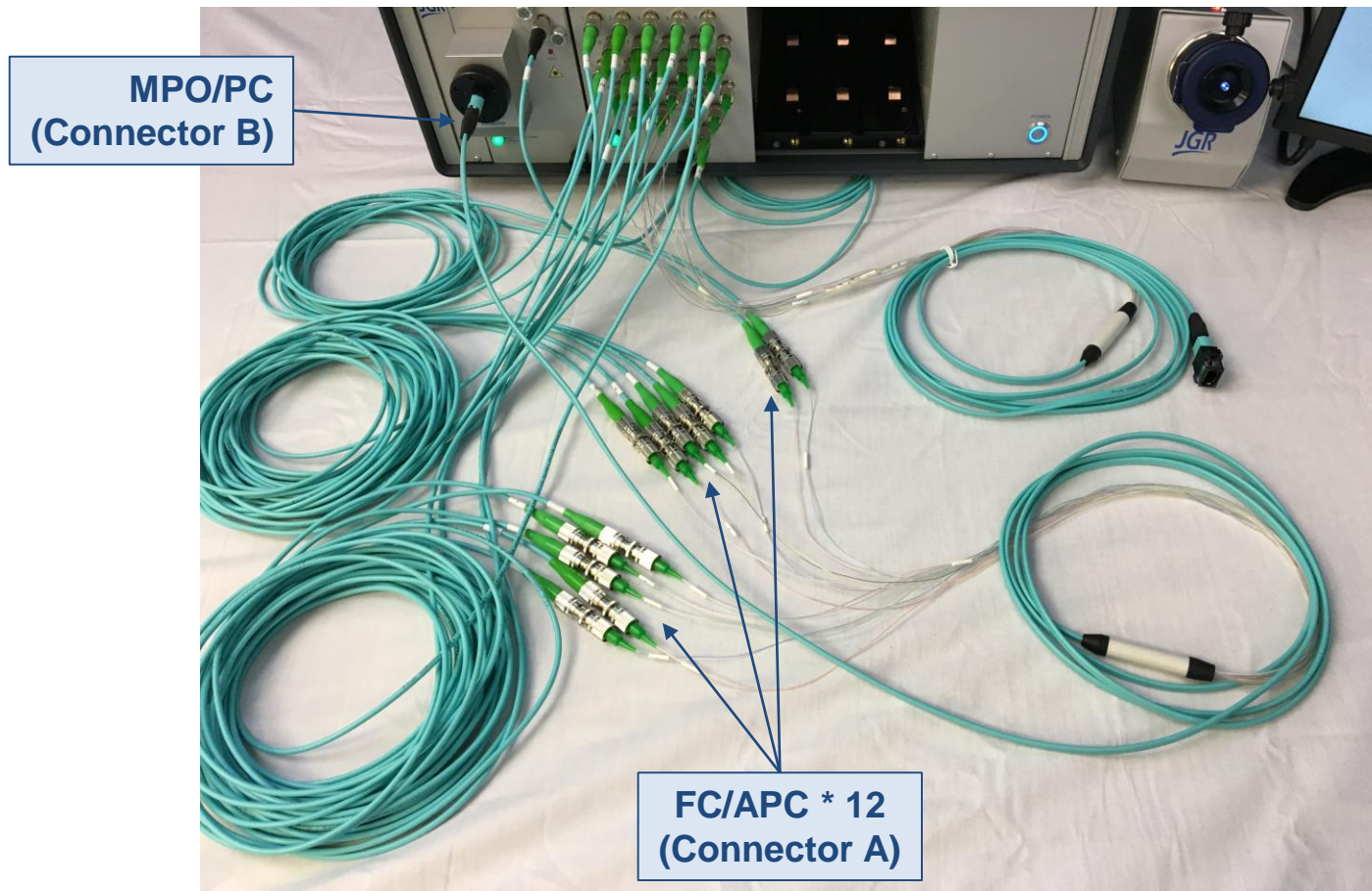
Ports 1-12 were  
assigned to  
FC/APC



# Testing a Fanout-to-Multifiber

## Bidirectional Testing

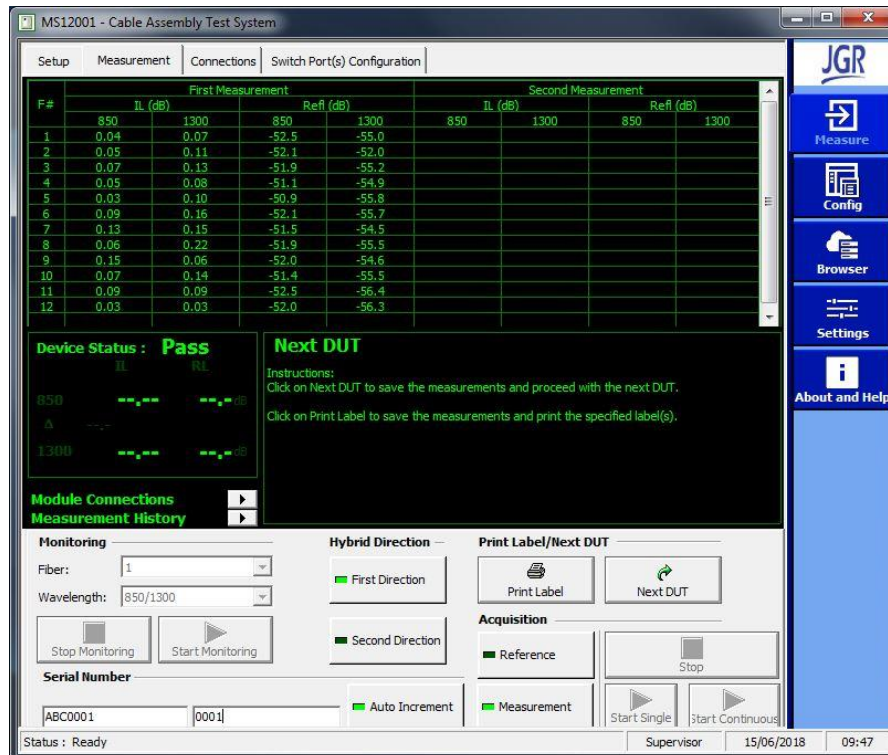
- Connect the DUT to measure in the first direction



# Testing a Fanout-to-Multifiber

## Bidirectional Testing

- Click *Start Single* to measure Connector A.
- Enter a serial number and click *Next DUT* to save the results and move on to the next DUT.
- When you wish to measure Connector B, click *Second Direction*.
- You can test Connector A of many DUTs before doing this. The results will be saved together in the database for the same serial number.



Note: when pressing *Second Direction*, a prompt will warn you that you will lose your reference for end A.

If you do not disconnect your MTJ you can save your first reference by going into *Settings > Measurement Options > Require New Reference* and selecting *No*.

This is only possible if the switch has twice as many ports as the number of fibers of the DUT.

# Testing a Fanout-to-Multifiber

## Bidirectional Testing

- Reference the MTJ for the second direction



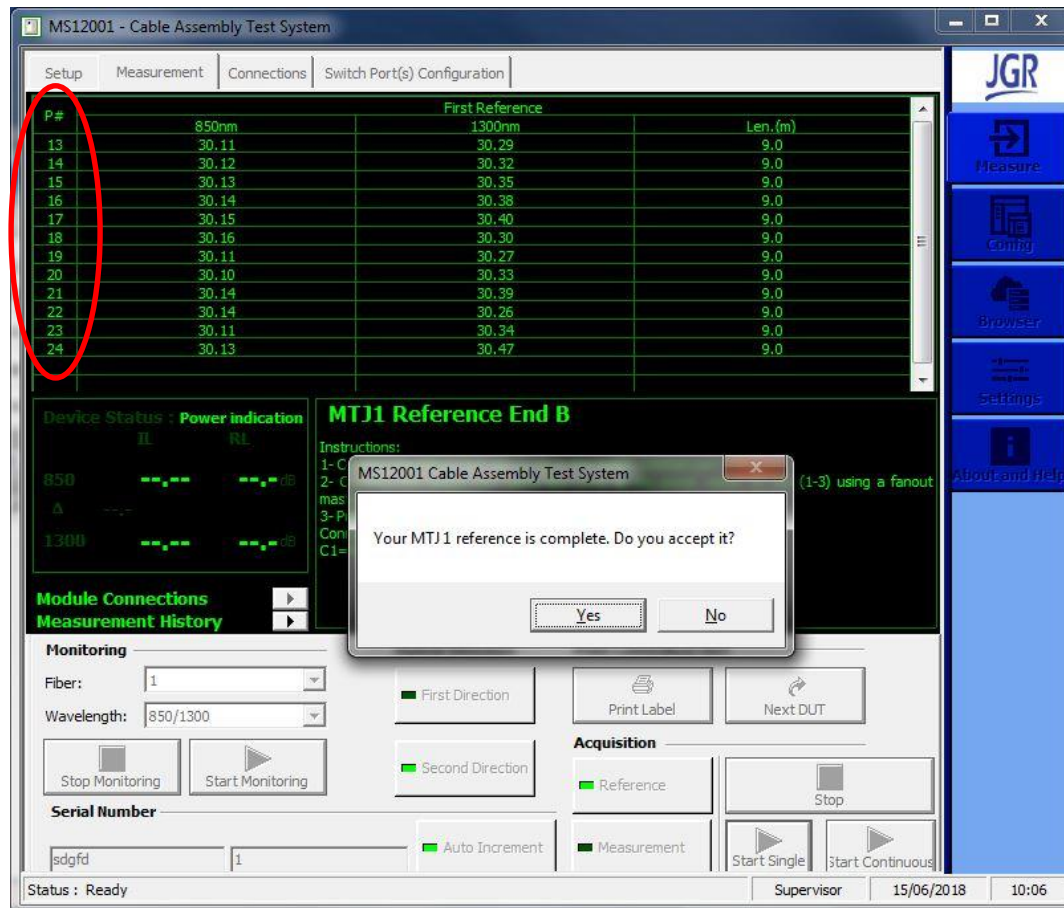


# Testing a Fanout-to-Multifiber

## Bidirectional Testing

- Reference the MTJ for the second direction

Ports 13-24 were assigned to MPO/PC

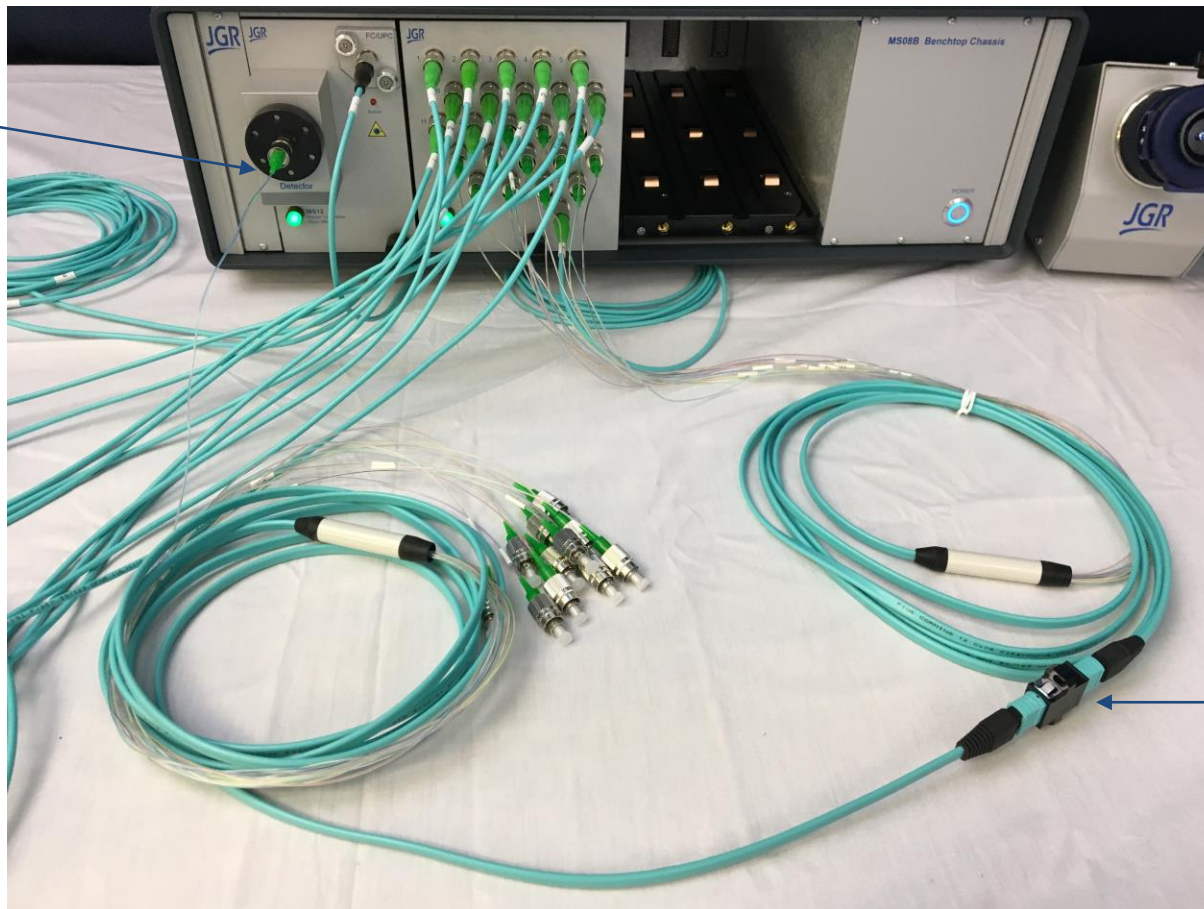




# Testing a Fanout-to-Multifiber

## Bidirectional Testing

- Connect the DUT to measure in the second direction



**FC/APC  
(Connector A)**

**MPO/PC  
(Connector B)**

# Testing a Fanout-to-Multifiber

## Bidirectional Testing

- The results for Connector A of the corresponding serial number are displayed.
- Click *Start Single* to measure Connector B.
- Click *Next DUT* to save the results and move on to the next DUT.

