

Different Test Types

Different Test Types (Connector A)

- The first test type that will be explained is “Connector A”.

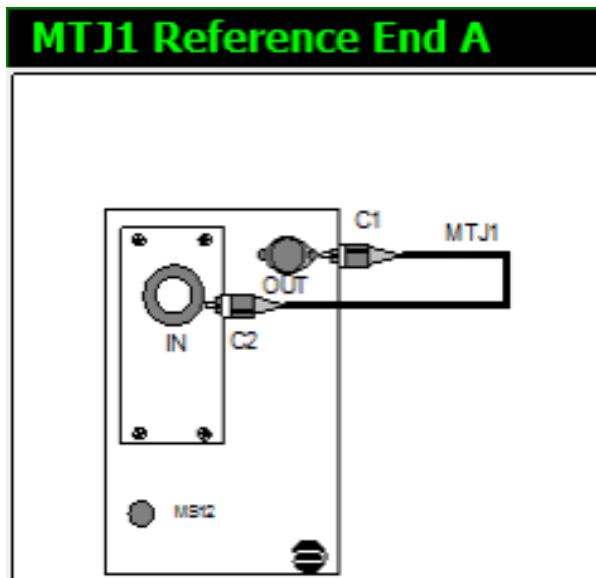
The screenshot displays the JGR Optics software interface, specifically the 'Test Configuration' tab. The interface is organized into several sections:

- Test Identification:** Includes a 'Test Name' field and a 'Refresh' button.
- Test Configuration:**
 - General:** Fields for 'Customer' (JGR Optics), 'DUT' (JGR Order Simplex SM), and 'Operator'.
 - Labels:** Fields for 'First' (None) and 'Second' (None).
 - Hardware Type:** Radio buttons for 'Standard' (selected) and 'High Throughput'.
 - Singlemode Wavelength:** A list of wavelengths (1310, 1490, 1550, 1625) with checkboxes. '1550' is selected.
 - Multimode Wavelength:** A list of wavelengths (850, 1300) with checkboxes. '850' is selected.
 - Test Type:** Radio buttons for 'Unidirectional', 'Connector A' (selected and circled in red), 'Bidirectional', and 'Connector B'.
 - Measurement:** Radio buttons for 'Insertion Loss' (selected) and 'Reflectance'.
 - Custom Fields:** Three input fields labeled 'Custom1', 'Custom2', and 'Custom3'.

On the right side of the interface, there is a vertical toolbar with icons for 'Measure', 'Config', 'Browser', 'Settings', and 'About and Help'. At the bottom right, there are 'Start', 'Help', and 'Exit' buttons.

Different Test Types (Connector A)

- This test will test one end of the DUT. To start there needs to be a reference for Master Test Jumper 1 (MTJ1).
- The bring up the window on the left click on the “Module Connections” arrow.



The screenshot shows the JGR software interface with the 'Connections' tab selected. The 'Module Connections' window is open, displaying the 'MTJ1 Reference End A' instructions. A confirmation dialog box is also visible, asking 'Your MTJ 1 reference is complete. Do you accept it?' with 'Yes' and 'No' buttons.

P#	1310nm	1550nm	Len.(m)
1	0.00	0.01	3.0

Device Status : Power indication
IL RL

1310 --- dB
1550 --- dB

Instructions:
1- Connect the MS12 OUT slot (1-1) to the MS12 IN slot (1-0) using a master test jumper (MTJ).
2- Press Start.
Connectors:
C1=FC/APC; C2=compatible JGR Order.

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

Serial Number

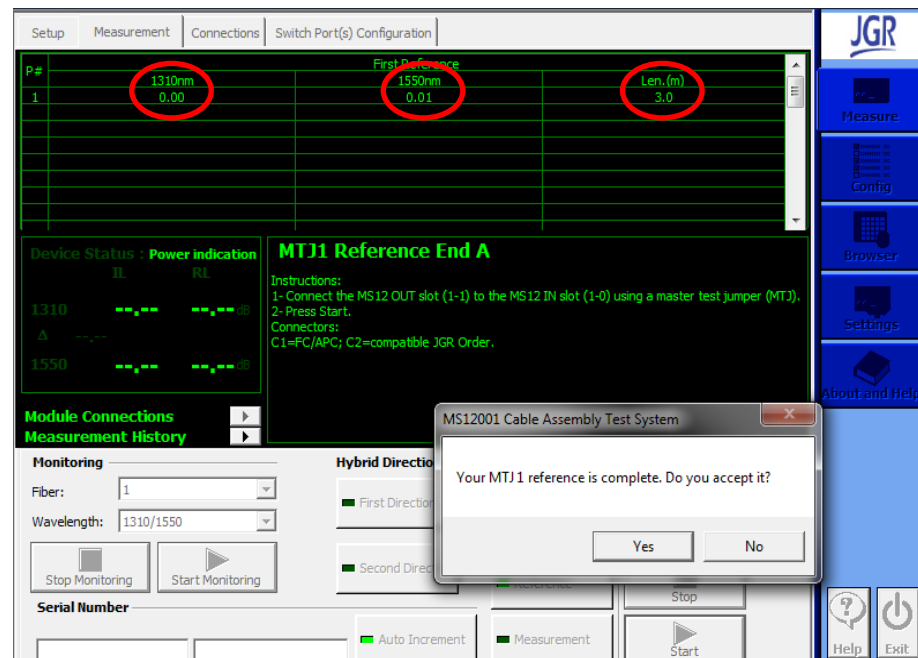
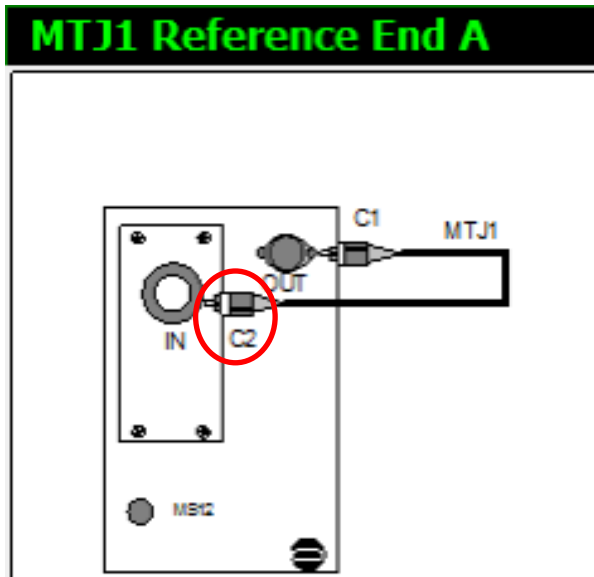
Hybrid Direction
First Direction
Second Direction

Auto Increment Measurement Start

MS12001 Cable Assembly Test System
Your MTJ 1 reference is complete. Do you accept it?
Yes No

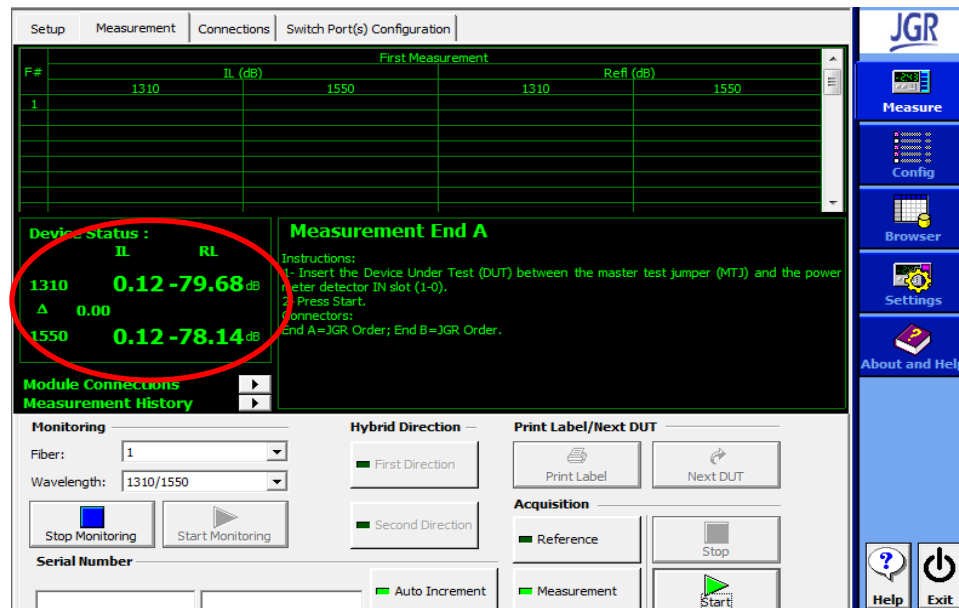
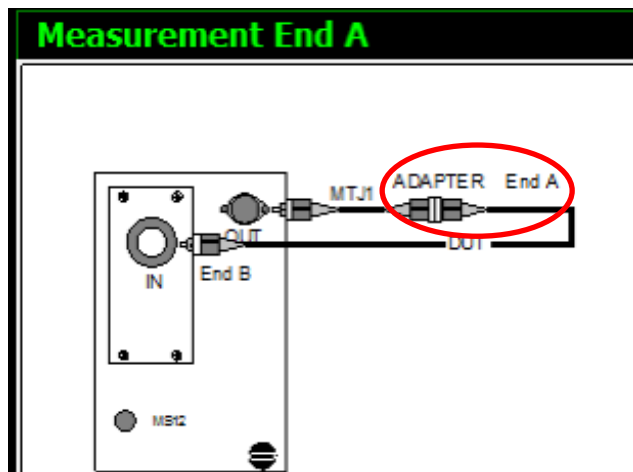
Different Test Types (Connector A)

- As seen on the right figure, ensure that the reference values are low. If they are above 0.5dB check for contaminants, damage, or the mating of the connectors may be poor.
- The length is also a good indicator if there is a problem with MTJ1.
- Note that for multimode MTJ1, end (C2) must be a UPC connector.



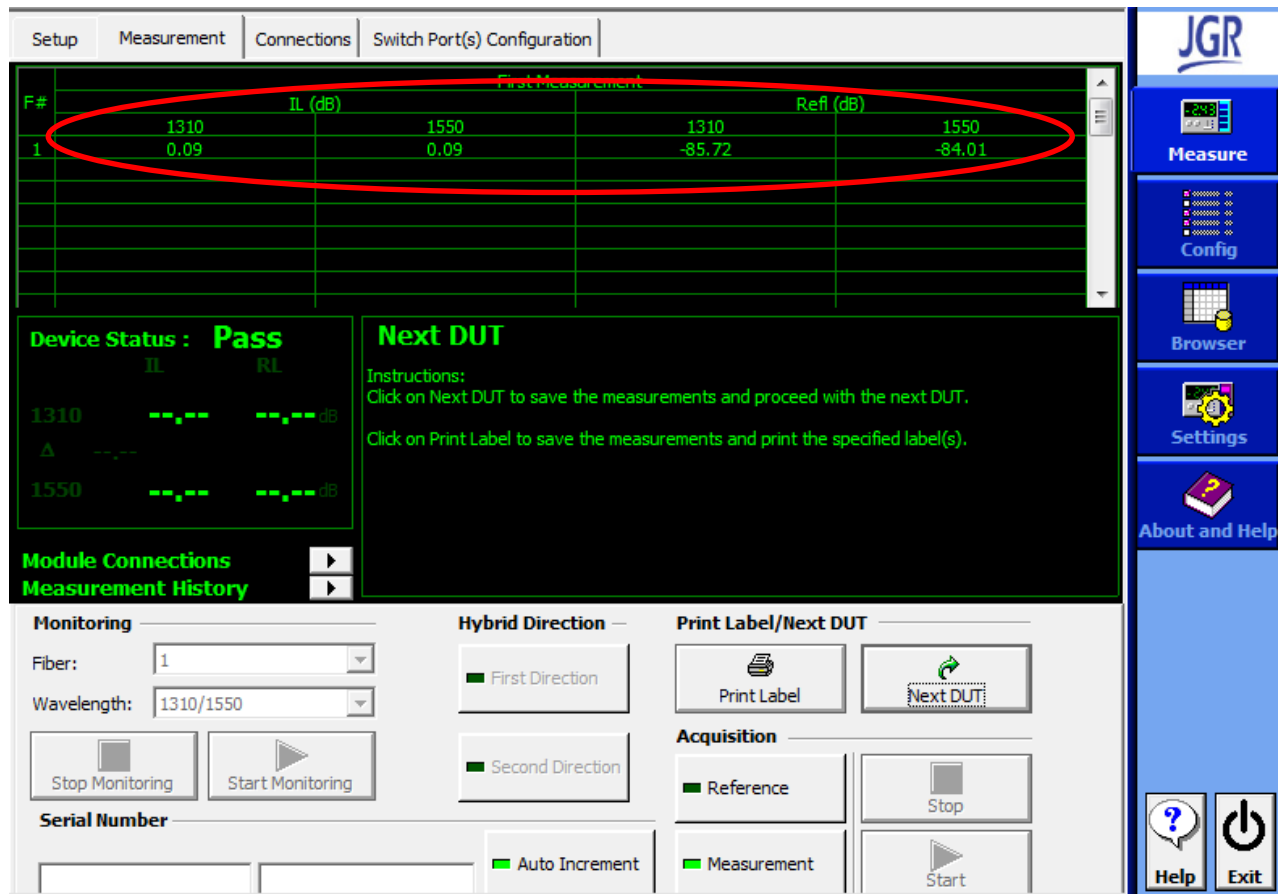
Different Test Types (Connector A)

- When ready to test, connect the DUT as shown in the left figure. The measurement taken will be that of Connector labelled End A.
- In the figure on the right it is possible to see the real-time dual display of an APC connection. The display is **not** a real measurement but more of a guide for the operator to know if the connection is good.



Different Test Types (Connector A)

- As seen in the figure, the measurement has been taken. These are the values of the connection between MTJ1 and the DUT at End A.



Different Test Types (Connector B)

- The next test type that will be explained is “Connector B”.

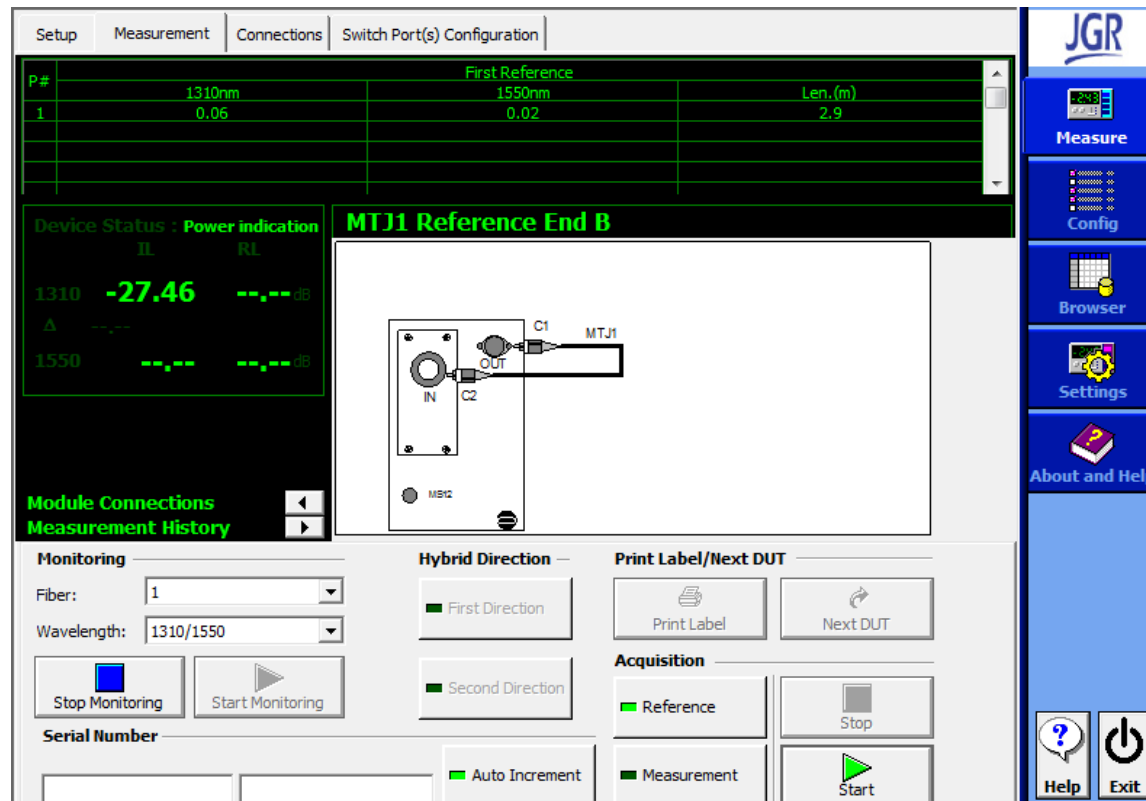
The screenshot displays the JGR Optics software interface, specifically the 'Setup' tab. The interface is divided into several sections:

- Test Identification:** Includes a 'Test Name' dropdown menu and a 'Refresh' button.
- Test Configuration:**
 - General:** Fields for 'Customer' (JGR Optics), 'DUT' (JGR Order Simplex SM), and 'Operator'.
 - Labels:** Fields for 'First' and 'Second' labels, both set to 'None'.
 - Hardware Type:** Radio buttons for 'Standard' (selected) and 'High Throughput'.
 - Singlemode Wavelength:** Checkboxes for 1310, 1490, 1550 (selected), and 1625.
 - Multimode Wavelength:** Checkboxes for 850 and 1300.
 - Test Type:** Radio buttons for 'Unidirectional', 'Bidirectional', 'Connector A', and 'Connector B' (selected and circled in red).
 - Measurement:** Radio buttons for 'Insertion Loss' and 'Reflectance'.
 - Custom Fields:** Input fields for 'Custom1', 'Custom2', and 'Custom3'.

On the right side of the interface, there is a vertical toolbar with icons for 'Measure', 'Config', 'Browser', 'Settings', and 'About and Help'. At the bottom right, there are 'Start', 'Help', and 'Exit' buttons.

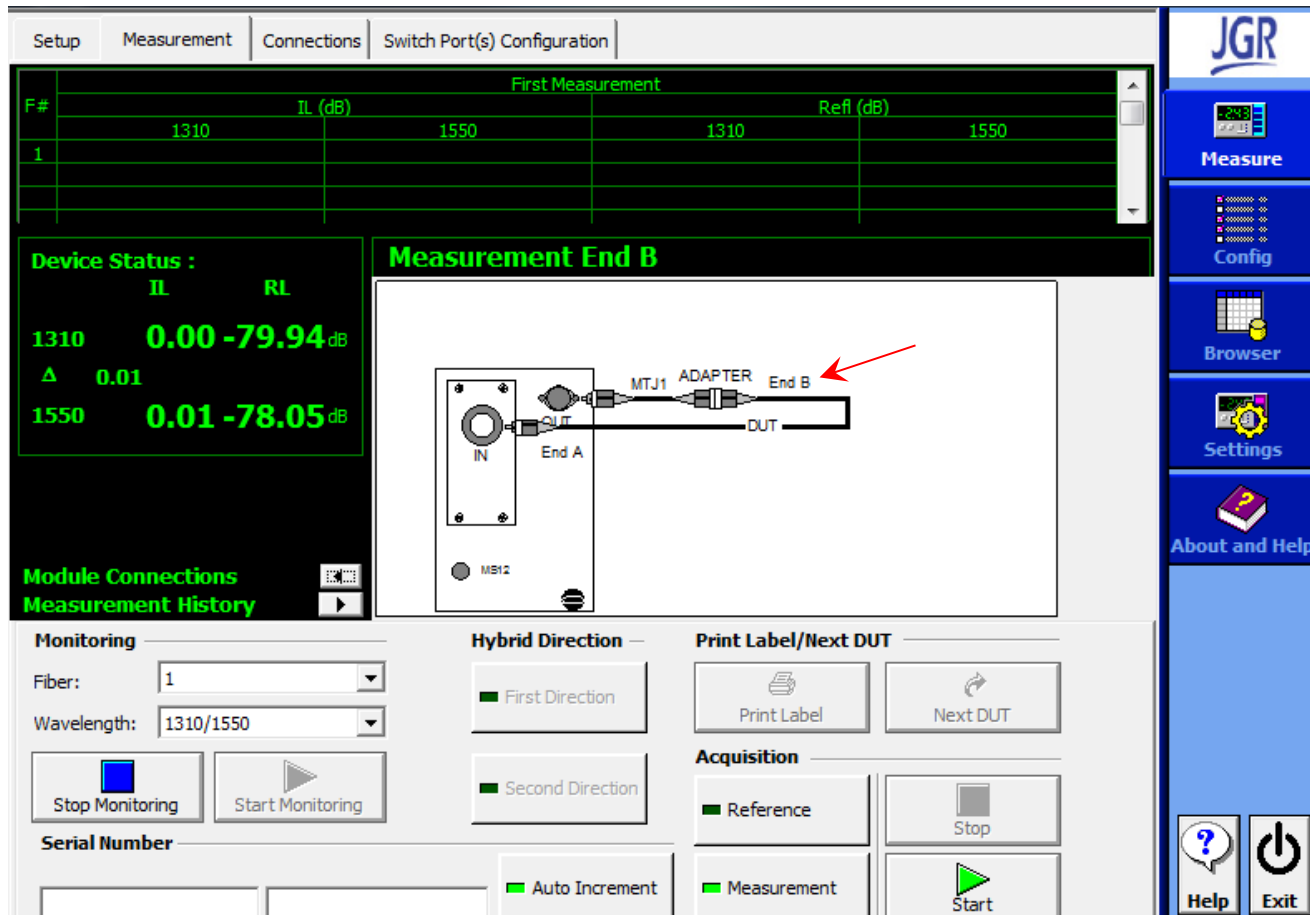
Different Test Types (Connector B)

- This Test Type is the same as Connector A test type. The only difference is that the operator is now checking the opposite connector, End B. The figure shows the reference being taken.



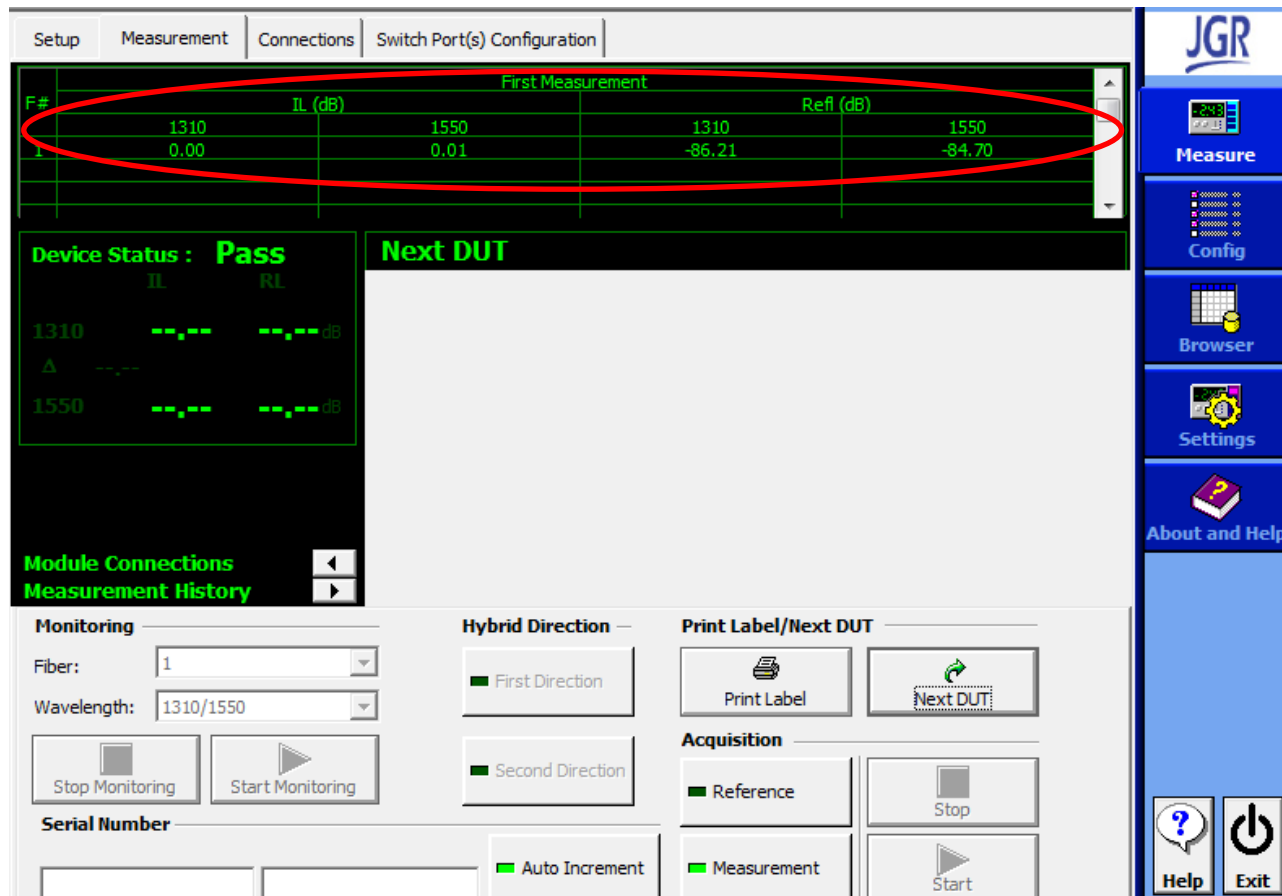
Different Test Types (Connector B)

- As seen in the figure below, the DUT is flipped in order to measure End B.



Different Test Types (Connector B)

- As seen in the figure, the measurement has been taken. These are the values of the connection between MTJ1 and the DUT at End B.



Different Test Types (Unidirectional)

- The next test type that will be explained is “Unidirectional”.

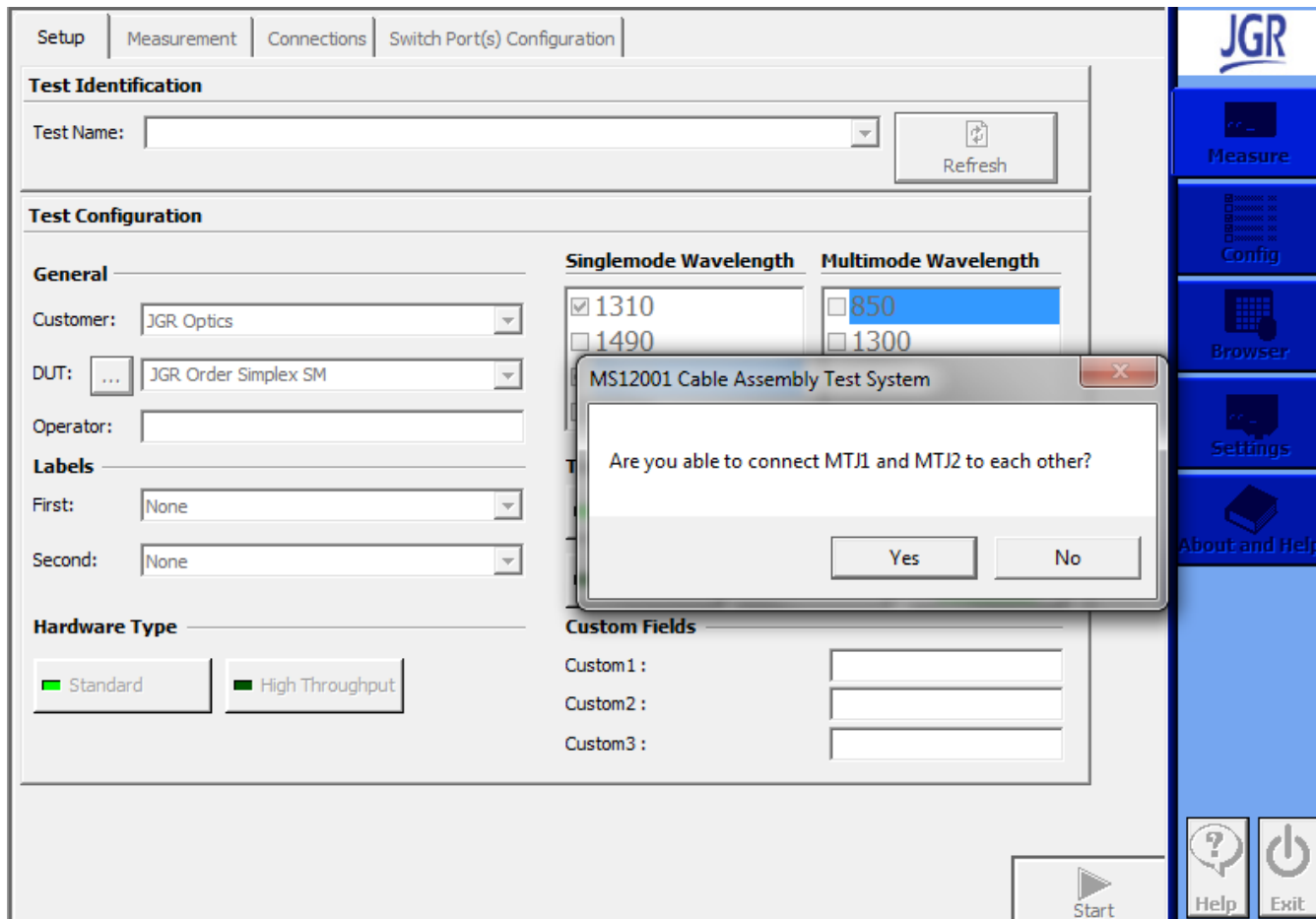
The screenshot displays the JGR Optics software interface, specifically the 'Test Configuration' window. The window is divided into several sections:

- Test Identification:** Includes a 'Test Name' field and a 'Refresh' button.
- Test Configuration:**
 - General:** Includes 'Customer' (JGR Optics), 'DUT' (JGR Order Simplex SM), and 'Operator' fields.
 - Labels:** Includes 'First' and 'Second' dropdown menus, both set to 'None'.
 - Hardware Type:** Includes 'Standard' and 'High Throughput' buttons, with 'Standard' selected.
- Singlemode Wavelength:** A list of wavelengths (1310, 1490, 1550, 1625) with checkboxes. '1550' is selected.
- Multimode Wavelength:** A list of wavelengths (850, 1300) with checkboxes. '850' is selected.
- Test Type:** A section with a red circle around the 'Unidirectional' button. Other options include 'Bidirectional', 'Connector A', and 'Connector B'.
- Measurement:** A section with 'Insertion Loss' and 'Reflectance' buttons, both of which are selected.
- Custom Fields:** Three input fields labeled 'Custom1:', 'Custom2:', and 'Custom3:'.

On the right side of the interface, there is a vertical toolbar with buttons for 'Measure', 'Config', 'Browser', 'Settings', and 'About and Help'. At the bottom right, there are 'Start', 'Help', and 'Exit' buttons.

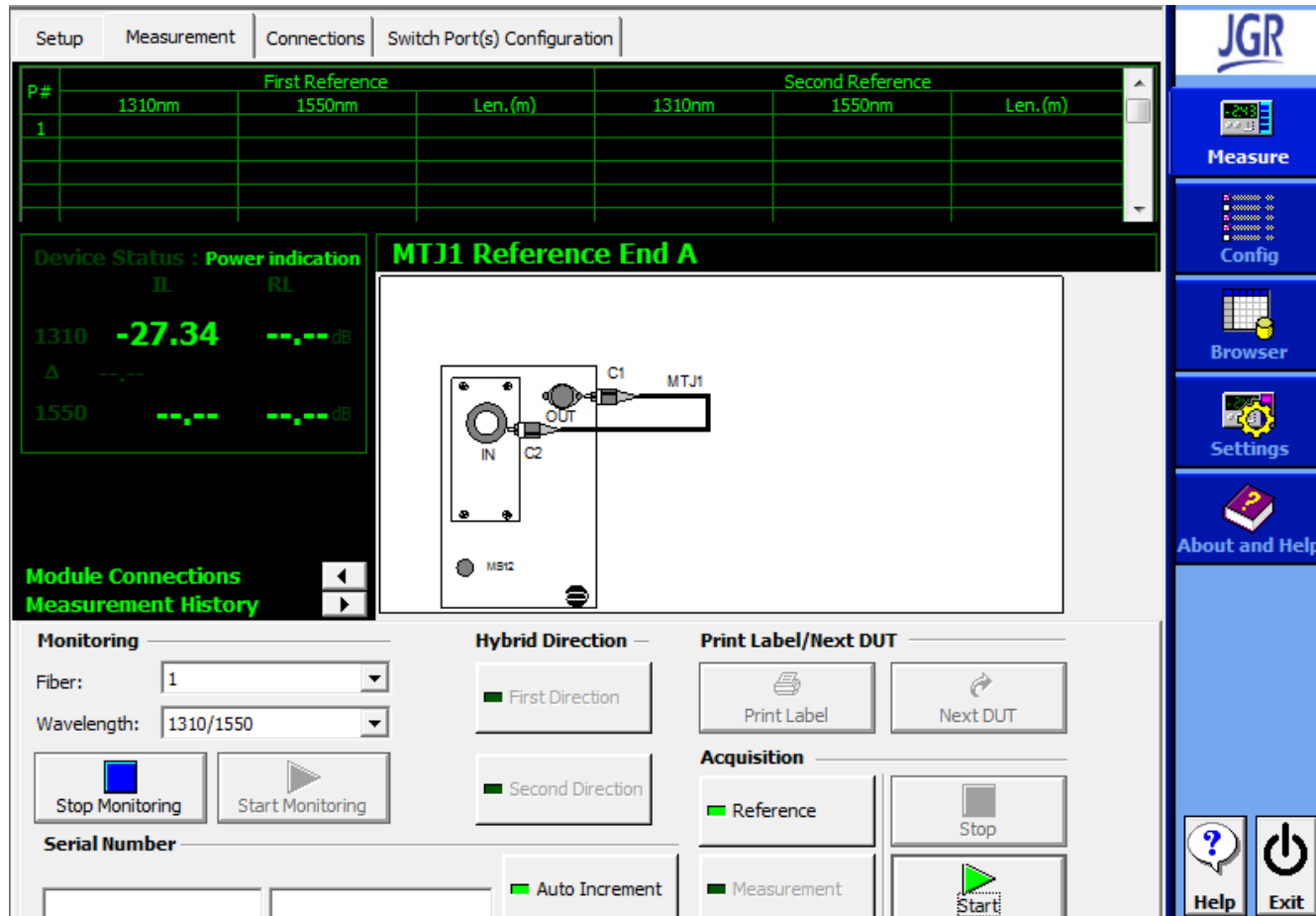
Different Test Types (Unidirectional)

- MS12001 will verify with the user that MTJ1 and MTJ2 (two Master Test Jumpers) can be connected together.



Different Test Types (Unidirectional)

- The figure below demonstrates MTJ1 being connected and referenced out.



Different Test Types (Unidirectional)

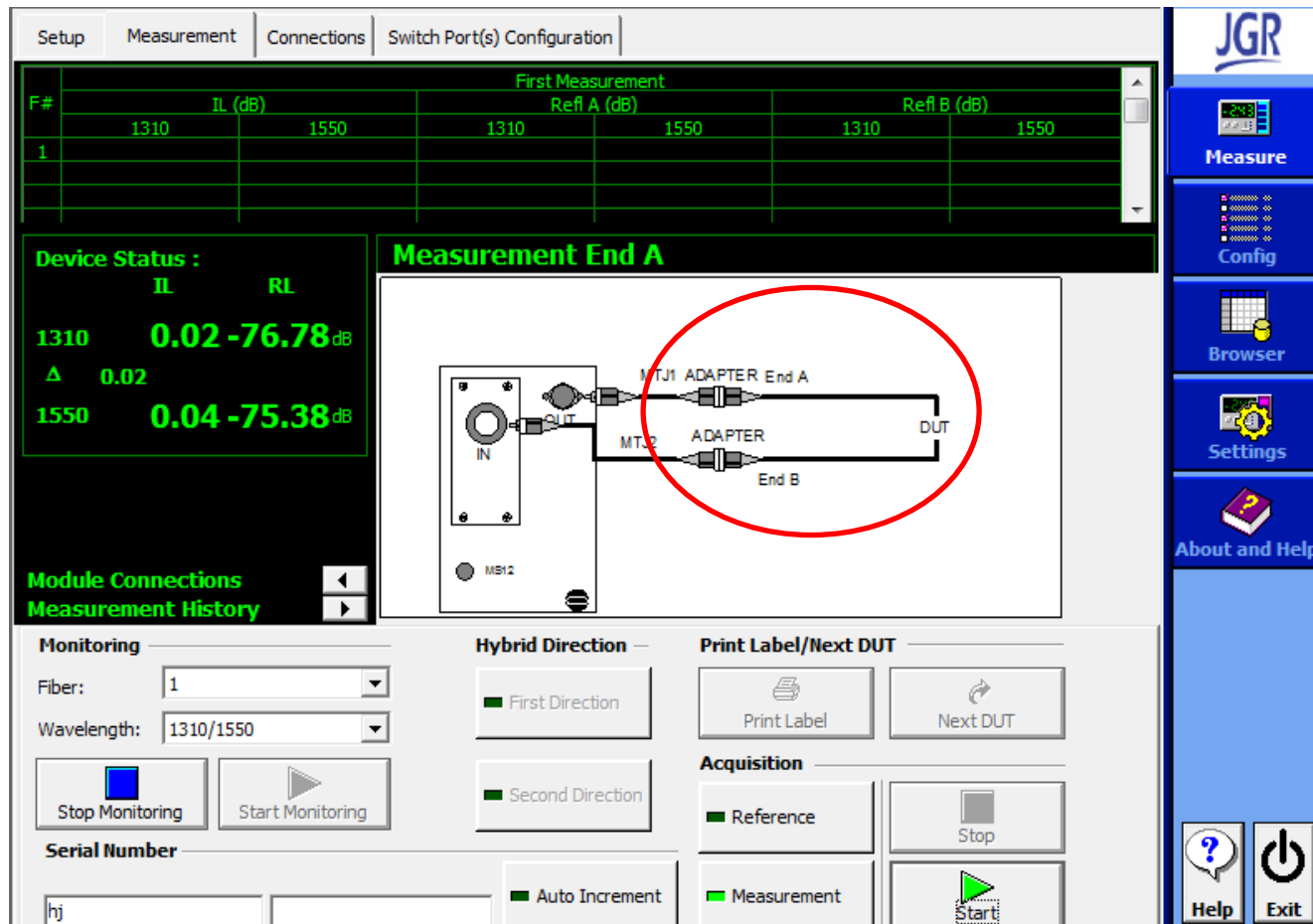
- The figure below demonstrates MTJ1 connected to MTJ2, in order for MTJ2 to be referenced out.

The screenshot displays the JGR software interface with the following components:

- Top Tabs:** Setup, Measurement, Connections, Switch Port(s) Configuration.
- Table:** A table with 7 columns: P#, First Reference (1310nm, 1550nm), Len.(m), Second Reference (1310nm, 1550nm), and Len.(m). Row 1 shows values: 1, 0.07, 0.02, 2.9.
- Device Status:** Power indication, IL, RL. Measurements for 1310 and 1550 nm are shown as -27.45 dB and --- dB respectively.
- MTJ 2 Reference Diagram:** A schematic showing a device with IN and OUT ports. An ADAPTER connects MTJ1 (C1, C2, C3) to MTJ2. A red arrow points to the MTJ2 connection point.
- Monitoring Section:** Fiber: 1, Wavelength: 1310/1550. Buttons for Stop Monitoring and Start Monitoring.
- Serial Number:** A field for entering the serial number.
- Hybrid Direction:** First Direction and Second Direction checkboxes.
- Print Label/Next DUT:** Buttons for Print Label and Next DUT.
- Acquisition:** Reference and Measurement checkboxes, and buttons for Stop and Start.
- Right Sidebar:** JGR logo, Measure, Config, Browser, Settings, About and Help, Help, and Exit buttons.

Different Test Types (Unidirectional)

The figure below demonstrates the connected DUT in between MTJ1 and MTJ2.



Different Test Types (Bidirectional)

- The next test type that will be explained is “Bidirectional”.

The screenshot displays the JGR Optics software interface, specifically the 'Test Configuration' window. The window is divided into several sections:

- Test Identification:** Includes a 'Test Name' field and a 'Refresh' button.
- Test Configuration:**
 - General:** Fields for 'Customer' (JGR Optics), 'DUT' (JGR Order Simplex SM), and 'Operator'.
 - Labels:** Fields for 'First' and 'Second' labels, both set to 'None'.
 - Hardware Type:** Two buttons: 'Standard' and 'High Throughput'.
 - Singlemode Wavelength:** A list of wavelengths with checkboxes: 1310 (checked), 1490, 1550 (checked and highlighted), and 1625.
 - Multimode Wavelength:** A list of wavelengths with checkboxes: 850 and 1300.
 - Test Type:** Two buttons: 'Unidirectional' and 'Bidirectional' (highlighted with a red circle).
 - Measurement:** Two buttons: 'Insertion Loss' and 'Reflectance'.
 - Custom Fields:** Three input fields labeled 'Custom 1', 'Custom 2', and 'Custom 3'.

On the right side of the interface, there is a vertical toolbar with icons for 'Measure', 'Config', 'Browser', 'Settings', and 'About and Help'. At the bottom right, there are 'Start', 'Help', and 'Exit' buttons.

Different Test Types (Bidirectional)

- As with the Connector A and Connector B tests, only a reference for MTJ1 is taken.

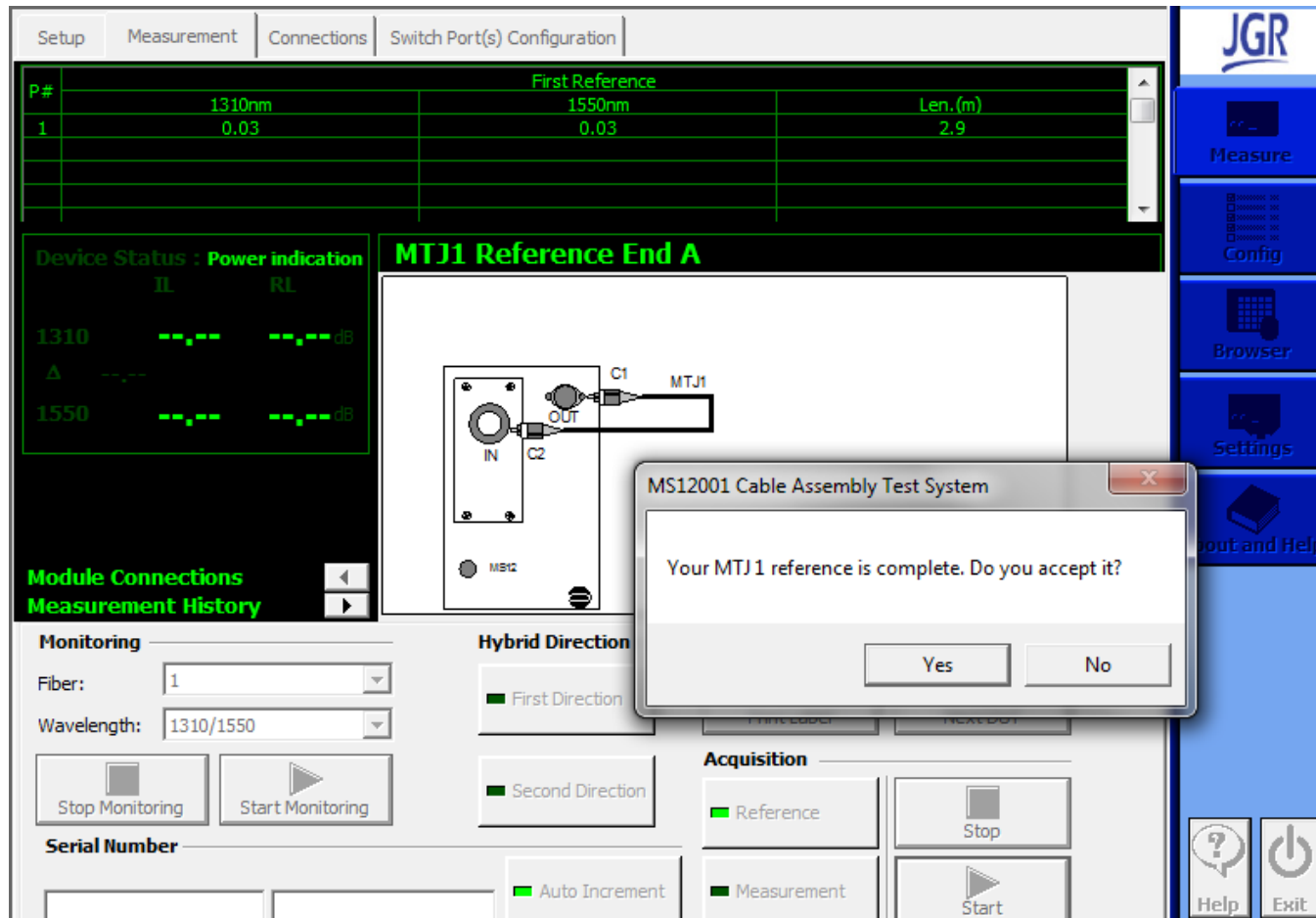
The screenshot displays the JGR Optics software interface for a bidirectional test. The top navigation bar includes tabs for Setup, Measurement, Connections, and Switch Port(s) Configuration. The main window is divided into several sections:

- Table:** A table with columns P#, Wavelength, First Reference, and Len.(m). The first row shows P# 1, 1310nm, 1550nm, and Len.(m).
- Device Status:** A section titled "Power indication" showing IL and RL values for 1310nm and 1550nm. The 1310nm IL value is -27.32 dB.
- MTJ1 Reference End A:** A diagram showing the test setup for MTJ1. It includes an IN port, an OUT port, and a C1 connector. The MTJ1 component is connected to the OUT port.
- Monitoring:** A section with a Fiber dropdown (set to 1) and a Wavelength dropdown (set to 1310/1550). It includes buttons for Stop Monitoring and Start Monitoring.
- Serial Number:** A section with a Serial Number input field and an Auto Increment checkbox.
- Hybrid Direction:** A section with checkboxes for First Direction and Second Direction.
- Print Label/Next DUT:** A section with buttons for Print Label and Next DUT.
- Acquisition:** A section with checkboxes for Reference and Measurement, and buttons for Stop and Start.

The right sidebar contains a vertical menu with icons and labels for Measure, Config, Browser, Settings, and About and Help. At the bottom of the sidebar are buttons for Help and Exit.

Different Test Types (Bidirectional)

- When the operator is satisfied with the reference, click “Yes”.



Different Test Types (Bidirectional)

- Connect the DUT with MTJ1 and End A connected.

The screenshot displays the JGR software interface for bidirectional measurements. The top navigation bar includes tabs for Setup, Measurement, Connections, and Switch Port(s) Configuration. The main window is divided into several sections:

- Table:** A table with columns for F#, IL (dB), Refl (dB), and two sets of measurements for 1310 and 1550 nm. The table is currently empty.
- Device Status:** A panel showing IL and RL values for 1310 and 1550 nm. For 1310 nm, IL is 0.08 and RL is -80.56 dB. For 1550 nm, IL is 0.15 and RL is -78.61 dB. A delta value of 0.07 is also shown.
- Measurement End A:** A diagram showing the connection setup. A DUT is connected to an ADAPTER, which is connected to MTJ1. End A is connected to the ADAPTER, and End B is connected to the DUT. A red arrow points to End A.
- Monitoring:** A section with a Fiber dropdown set to 1, a Wavelength dropdown set to 1310/1550, and buttons for Stop Monitoring and Start Monitoring.
- Serial Number:** A field for entering the serial number.
- Hybrid Direction:** A section with buttons for First Direction and Second Direction.
- Print Label/Next DUT:** Buttons for Print Label and Next DUT.
- Acquisition:** A section with buttons for Reference, Stop, and Start.

The right sidebar contains icons for Measure, Config, Browser, Settings, and About and Help. The bottom right corner features Help and Exit buttons.

Different Test Types (Bidirectional)

- Once the first measurement is taken, the DUT should be flipped to measure the connection between End B and MTJ1.

The screenshot displays the JGR software interface for bidirectional measurements. The top tabs include Setup, Measurement, Connections, and Switch Port(s) Configuration. The main window is divided into several sections:

- Measurement Table:** A table with columns for F#, IL (dB), and Refl (dB) for both First and Second measurements. The first row of data is circled in red.
- Device Status:** A section showing IL and RL values for two wavelengths (1310 and 1550 nm).
- Measurement End B:** A diagram showing the test setup with a DUT, MTJ1, and an ADAPTER. A red arrow points to End B.
- Monitoring:** A section with dropdowns for Fiber (1) and Wavelength (1310/1550), and buttons for Stop Monitoring and Start Monitoring.
- Serial Number:** A section with a text input field and an Auto Increment checkbox.
- Hybrid Direction:** A section with checkboxes for First Direction and Second Direction.
- Print Label/Next DUT:** A section with buttons for Print Label and Next DUT.
- Acquisition:** A section with checkboxes for Reference and Measurement, and buttons for Stop and Start.

The right sidebar contains buttons for Measure, Config, Browser, Settings, and About and Help. The bottom right corner features Help and Exit buttons.

F#	First Measurement		Second Measurement	
	IL (dB)	Refl (dB)	IL (dB)	Refl (dB)
1	0.09	0.13	-86.21	-85.06

Device Status:

Wavelength	IL (dB)	RL (dB)
1310	0.05	-80.26
1550	0.06	-79.00

Measurement End B Diagram:

The diagram shows a DUT (Device Under Test) connected to an MTJ1 (Monolithic Thin Junction) and an ADAPTER. The connection is labeled End B. A red arrow points to End B.

Different Test Types (Bidirectional)

- The Bidirectional Test Type is a combination of Connector A Test Type, and Connector B Test Type.

