

STOP!

Don't Connect Unless You Inspect!

1. INTRODUCTION

MT-RJ Test Kits (listed in Figure 1) contain the cable assemblies and adapters needed to field test MT-RJ optical fiber system attenuation and polarity using optical power meters having either single or dual SC, straight tip (ST) style, or MT-RJ connector interface.

NOTE



Dimensions in this instruction sheet are in metric units [with U.S. customary units in brackets]. Figures are not drawn to scale.

TEST KIT	SYSTEM FIBER	TEST EQUIPMENT CONNECTOR INTERFACE	PARAGRAPH (For Instruction On Usage)
1278861-1	50/125- μ m	SC	2.1 or 2.2 NOTE
1278861-2	50/125- μ m	ST Style	2.1 or 2.2 NOTE
1278861-3	50/125- μ m	MT-RJ	2.3
1278861-4	50/125- μ m■	SC	2.1 or 2.2 NOTE
1278861-5	50/125- μ m■	ST Style	2.1 or 2.2 NOTE
1278861-6	50/125- μ m■	MT-RJ	2.3
1278862-1	62.5/125- μ m	SC	2.1 or 2.2 NOTE
1278862-2	62.5/125- μ m	ST Style	2.1 or 2.2 NOTE
1278862-3	62.5/125- μ m	MT-RJ	2.3
1278862-4	62.5/125- μ m■	SC	2.1 or 2.2 NOTE
1278862-5	62.5/125- μ m■	ST Style	2.1 or 2.2 NOTE
1278862-6	62.5/125- μ m■	MT-RJ	2.3
1278863-1	Singlemode	SC	2.1 or 2.2 NOTE
1278863-2	Singlemode	ST Style	2.1 or 2.2 NOTE
1278863-3	Singlemode	MT-RJ	2.3
1278863-4	Singlemode■	SC	2.1 or 2.2 NOTE
1278863-5	Singlemode■	ST Style	2.1 or 2.2 NOTE
1278863-6	Singlemode■	MT-RJ	2.3

■ MT-RJ SECURE* products

NOTE 2.1 for Fixed Receiver Interface and
2.2 for Interchangeable Receiver Interface

Figure 1

Important: The cable assemblies included with these kits are manufactured under strict production control. We DO NOT recommend constructing cable assemblies for use with these kits.

NOTE



*Because of their ease of use, we recommend using Noyes power meters with an MT-RJ connector interface available from:
Noyes Fibre Systems, East Gate Park
P.O. Box 398, Laconia, NH 03247*

For supporting data and explanations on testing procedures, refer to White Paper: *MT-RJ Optical Fiber Systems Testing* available at www.ampnetconnect.com under Documents/Literature Center/White Papers.

Reasons for reissue of this document are provided in Section 4, REVISION SUMMARY.

2. USING THE TEST KIT

CAUTION



Ensure that the test kit selected matches the fiber type (core size) and the test equipment connector interface.

2.1. Dual Fiber Test Meters with SC or ST Style Fixed Receiver Interface

Important Before Continuing:

Verify that all cable assemblies are in good condition.

A. Setting the Reference Values (Figure 2)

1. Connect the SC or ST style plugs of the pinless MT-RJ jumper J1 to Test Device 1 so that the "A" lead is connected to the receiver (Rx) and the "B" lead is connected to the transmitter (Tx).

For multimode testing, apply 5 non-overlapping wraps around each supplied mandrel in the Tx lead. Maintain the wraps during the reference calibration and for all loss measurements.

2. Connect the SC or ST style plugs of the pinned MT-RJ jumper J2 to Test Device 2 so that the "A" lead is connected to the receiver (Rx) and the "B" lead is connected to the transmitter (Tx).

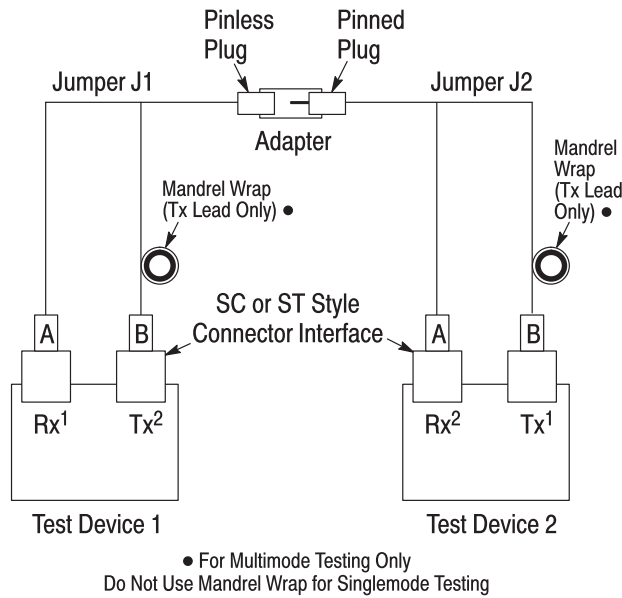
Setting the Reference Values

Figure 2

3. Connect the MT-RJ jumpers to the adapter.

NOTE

The fiber type determines the mandrel diameter. Refer to Figure 3.

4. Depending on the test equipment being used, record the two power values (in dBm), one in each direction, or zero the meters. These values are the reference values for subsequent testing.

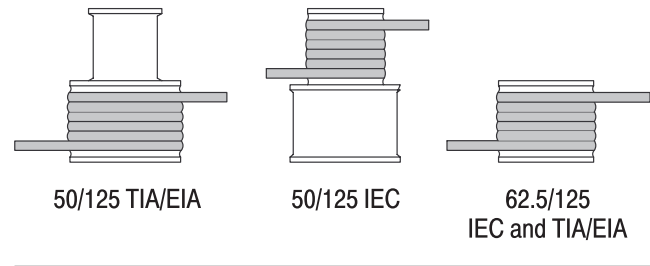
Mandrel Wrap Using Provided Mandrels

Figure 3

B. Testing the System (Figure 4)

1. Disconnect the pinless MT-RJ plug of jumper J1 from the adapter, then connect the plug to the MT-RJ jack at one end of the system under test.

2. Connect the standard MT-RJ jumper J3 (has pinless MT-RJ plugs at each end) to the adapter (which contains the pinned jumper J2) and to the MT-RJ jack at the other end of the system under test.

3. Run the system test, and record the power values. Calculate the link loss by subtracting those power values from the reference values previously taken. The resulting system attenuation should be less than or equal to the system losses allowed by Telecommunications Industry Association/Electronic Industries Alliance (TIA/EIA)-568-B.1, *Commercial Building Telecommunications Cabling Standards—Part 1*. Refer to Figure 5.

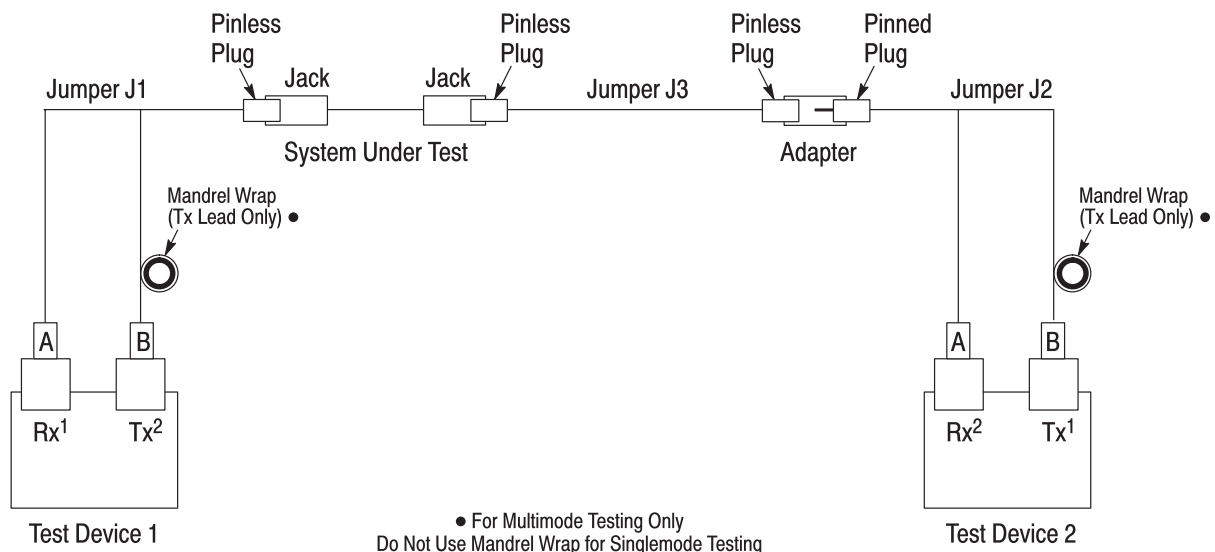
Testing the System

Figure 4

CABLING SUBSYSTEM	SYSTEM LENGTH (meters [ft])	MAXIMUM ATTENUATION (dB)			
		Multimode		Singlemode	
		850 nm	1300 nm	1310 nm	1500 nm
Horizontal	90 [295]	2.0	2.0	2.0	2.0
Centralized (Splice)	300 [984]	2.9	2.3	2.1	2.1
Centralized (Interconnect)	300 [984]	3.3	2.7	2.6	2.6
Building Backbone	300 [984]	2.6	2.0	1.8	1.8
Campus Backbone	1700 [5577]	7.5	4.0	2.4	2.4
Campus Backbone	2000 [6562]	8.5	4.5	2.5	2.5

Figure 5

2.2. Dual Fiber Test Meters with SC or ST Style Interchangeable Receiver Interface

Important Before Continuing:

Verify that all cable assemblies are in good condition.

A. Setting the Reference Values (Figure 6)

1. Connect jumper J1 to Test Device 1 so that the “B” lead is connected to the transmitter (Tx) and the MT-RJ plug is placed in the receiver (Rx) interface of Test Device 2.

For multimode testing, apply 5 non-overlapping wraps around each supplied mandrel in the Tx lead. Maintain the wraps during the reference calibration and for all loss measurements.

NOTE



The fiber type determines the mandrel diameter. Refer to Figure 3.

2. Connect jumper J2 to Test Device 2 so that the “B” lead is connected to the transmitter (Tx) and

the MT-RJ plug is placed in the receiver (Rx) of Test Device 1.

3. Depending on the test equipment being used, record the two power values (in dBm), one in each direction, or zero the meters. These values are the reference values for subsequent testing.

B. Testing the System (Figure 7)

1. Disconnect the MT-RJ plug of jumper J1 from Test Device 2. Disconnect the MT-RJ plug of jumper J2 from Test Device 1.
2. Replace the MT-RJ receiver (Rx) interface on both test devices with an SC or ST style connector receiver (Rx).
3. Connect the “A” leads (SC or ST style connectors) of jumper J1 and J2 to their respective receivers (Rx).
4. Connect the MT-RJ plugs of jumpers J1 and J2 to the MT-RJ jacks of the system under test.

Setting the Reference Values

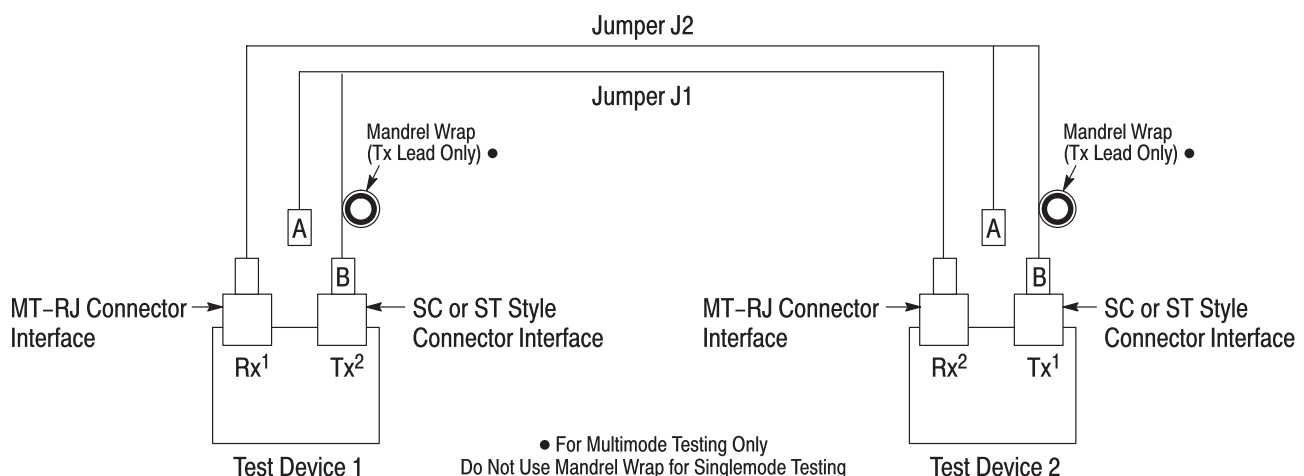


Figure 6

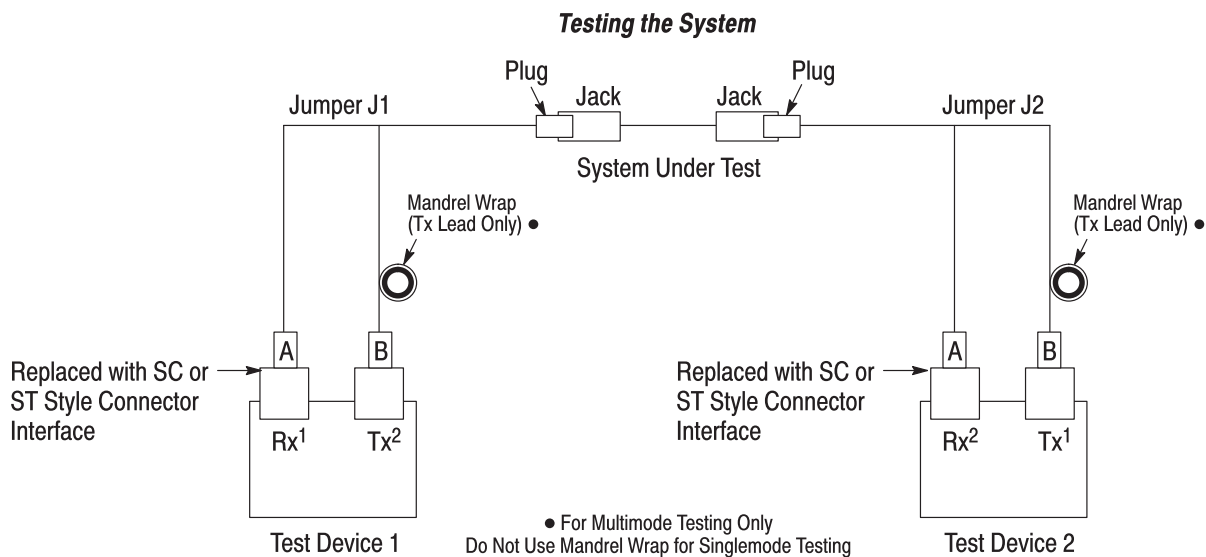


Figure 7

5. Run the system test, and record the power values. Calculate the link loss by subtracting those power values from the reference values previously taken. The resulting system attenuation should be less than or equal to the system losses allowed by TIA/EIA-568-B.1, *Commercial Building Telecommunications Cabling Standards—Part 1*. Refer to Figure 5.

2.3. Test Meters with Dual Fiber MT-RJ Interface

Important Before Continuing:

Verify that all cable assemblies are in good condition.

A. Setting the Reference Values (Figure 8)

1. Connect the pinless MT-RJ jumper J1 (between the test devices) to each interface.

Follow the test equipment manufacturer's recommendation for launch mode filtering.

2. Depending on the test equipment being used, record the two power values (in dBm), one in each direction, or zero the meters. These values are the reference values for subsequent testing.

B. Testing the System (Figure 9)

1. Disconnect jumper J1 from one of the devices, then connect it to the MT-RJ jack at one end of the system under test.

NOTE



MT-RJ SECURE cable assemblies must have the standard ends connected to the test equipment and the universal (amber) ends free to connect to the system under test.

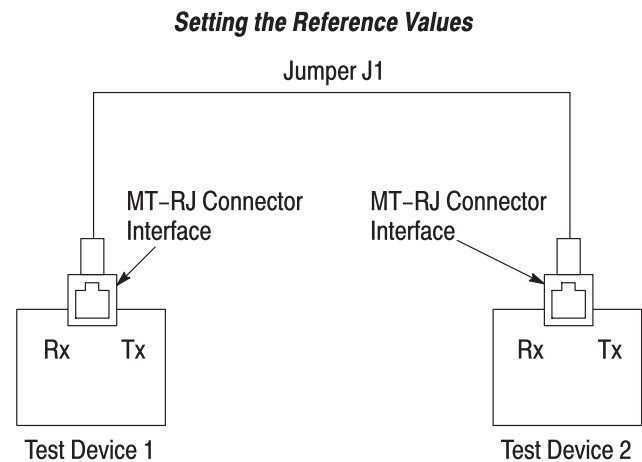


Figure 8

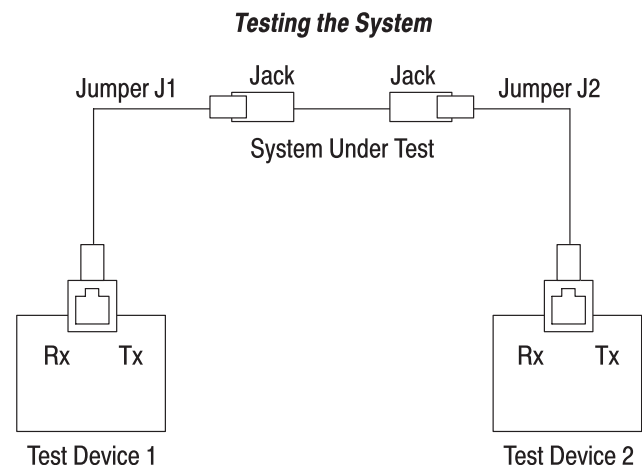


Figure 9

2. Connect jumper J2 to the other device and to the MT-RJ jack at the other end of the system under test.
3. Run the system test, and record the power values. Calculate the link loss by subtracting those power values from the reference values previously taken. The resulting system attenuation should be less than or equal to the system losses allowed by TIA/EIA-568-B.1, *Commercial Building Telecommunications Cabling Standards—Part 1*. Refer to Figure 5.

3. REPLACEMENT AND REPAIR

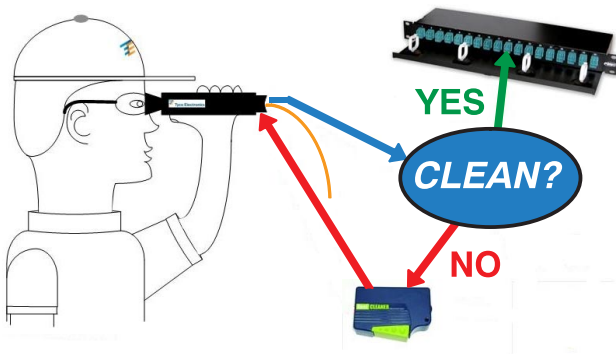
Test kit components are not repairable. Remove and replace damaged cable assemblies and adapters.

4. REVISION SUMMARY

Revisions to this instruction sheet include:

- Updated document to corporate requirements
- Added Stop! banner
- Changed orange to amber in NOTE of Paragraph 2.3, B
- Added Cleaning Flow Matrix to page 5

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DANGER: Never View Active Fiber Signals