







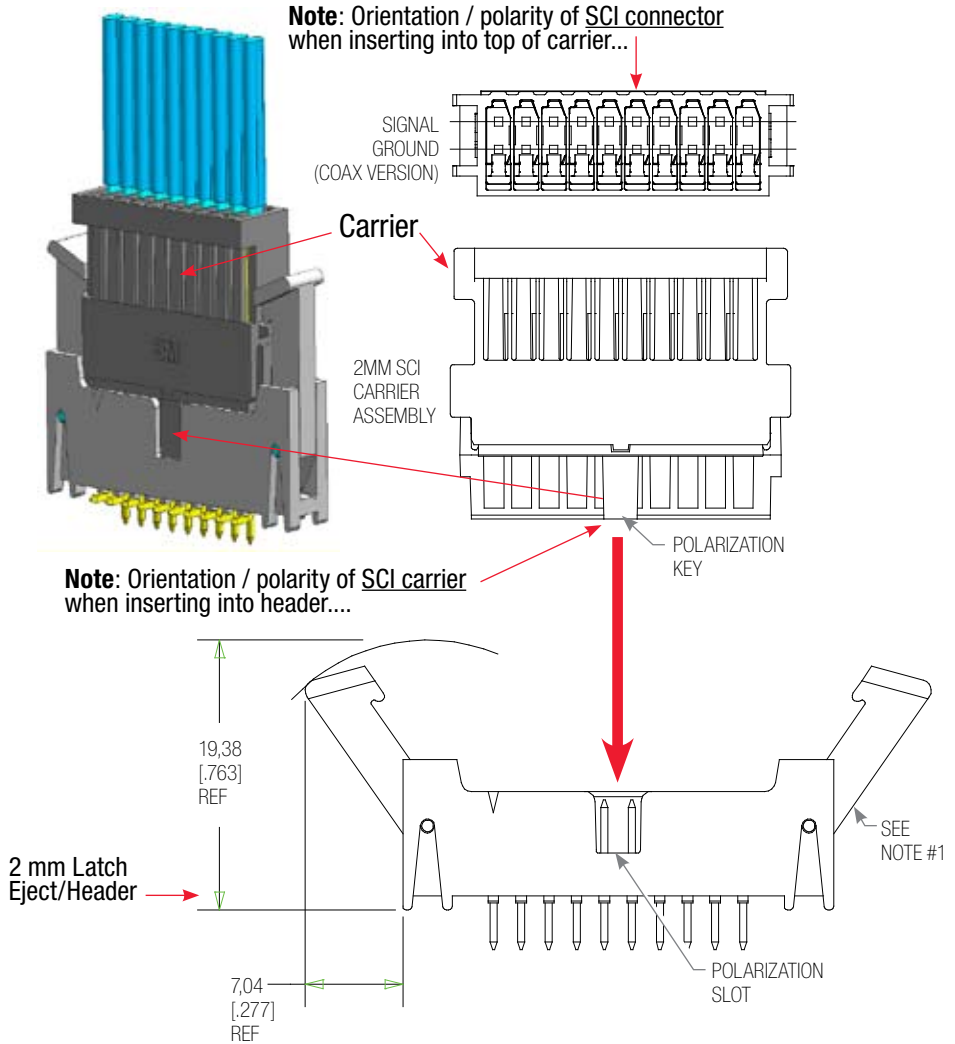








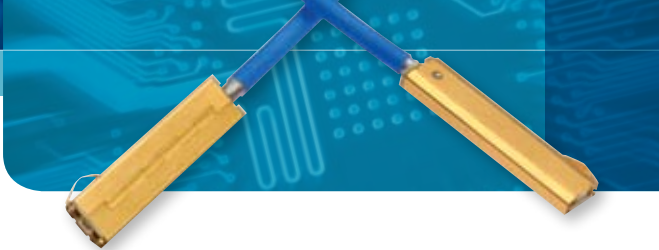
## C. 3M™ SCI Cable Assembly Carrier 2 mm



**Note 1:** Latches must be moved to approximate position shown before inserting carrier.

See 3M™ Latch/Eject Header Data Sheet TS-2199 for additional information.

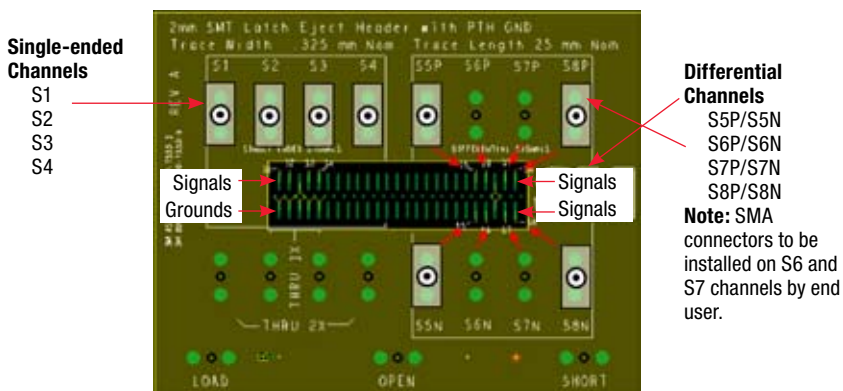




## 4.0 Testing Guidelines

Since this development kit provides the test engineer with multiple signal traces on one PCB, “double-ended” SCI cable assemblies may be connected to the same board to simulate a board-to-board connection scheme. If separate ground planes are desired, two kits (with test boards) may be purchased to perform similar “thru type” measurements.

**Single-ended** or **Differential** Signal Integrity testing that can be performed at locations as noted below...



# Testing Options:

## TDR / TDT Testing

**Note 1:** 35ps step input to board typically results in approx 38-40ps rise time at header.

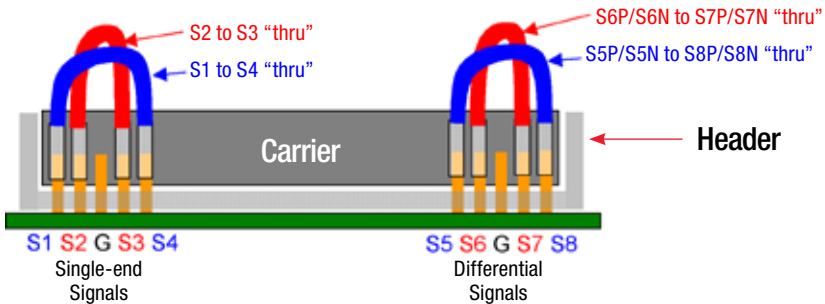
**Note 2:** Impedance of SMA connections typically 50 +/- 5Ω at 40ps rise time.

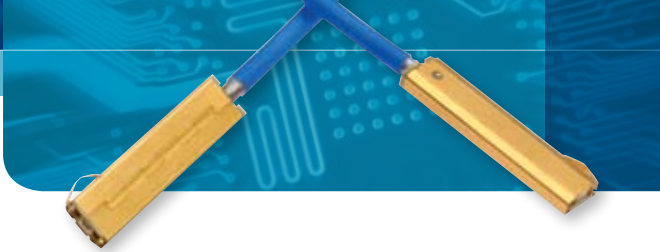
## Network analyzer “S-Parameter” and Eye Pattern Testing

**Note 1:** SMA and test board losses will be included in measurement unless calibrated out using calibration traces and structures provided.

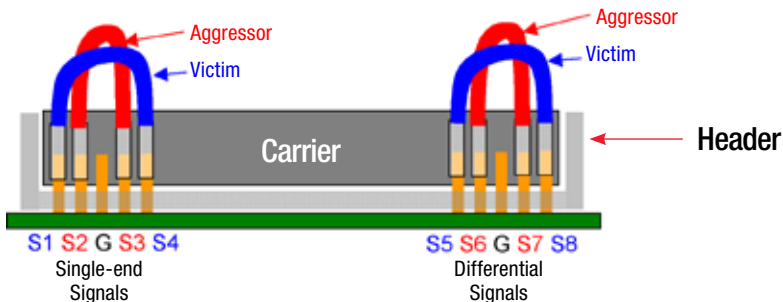
**Note 2:** End user will need to install SMA connectors for calibration traces in order to eliminate board loss and impedance mis-match of SMA connections.

## Examples of TDT, S-Parameter and Eye Pattern “thru” test set-up on the same board...

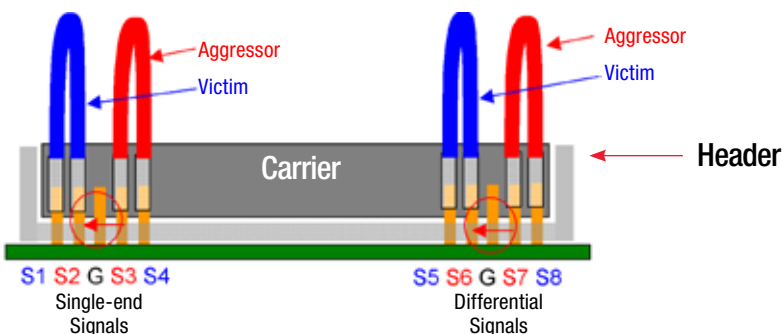




**Crosstalk** Test Setup example for “two adjacent aggressors” on the same board...



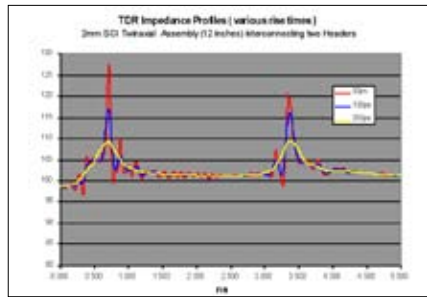
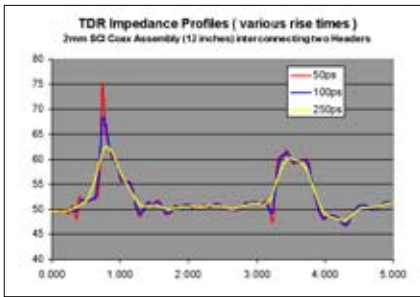
**Crosstalk** Test Setup example for a “single aggressor separated by grounded position” on the same board...



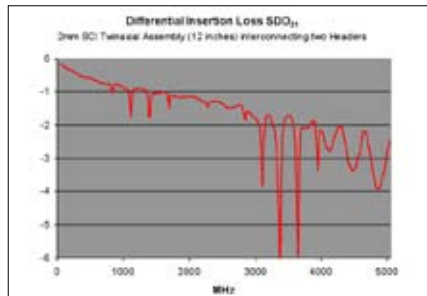
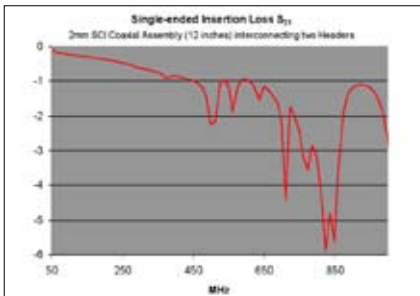
**NOTE:** Example test setups shown above utilize one test board; however, multiple boards may be purchased for board-to-board applications utilizing separate ground planes.

# 5.0 Examples of Test Data for a 3M™ SCI Cable Assembly 2 mm (12 inches) interconnecting two 3M™ Latch/Eject Headers

TDR profiles at various rise times examples...



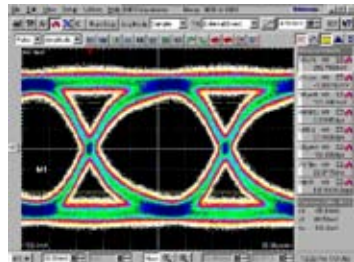
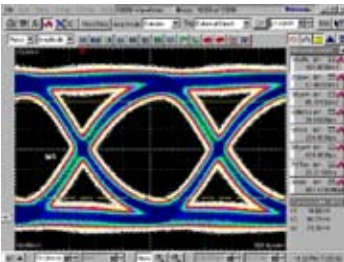
Insertion Loss (S-Parameter) examples...

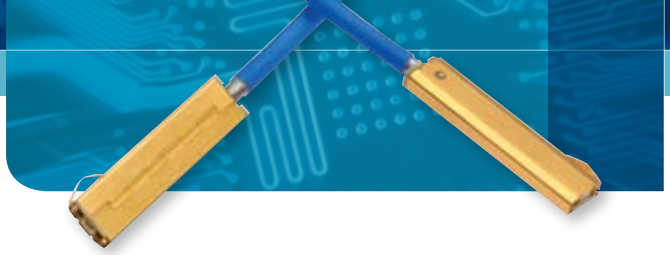


Eye Pattern example...

1Gbps Single-ended (50% eye height)

8Gbps Differential (50% eye height)





## 6.0 Additional Technical Assistance and Information

Please contact your local 3M Sales or Customer Service Representative if you would like additional assistance from our Signal Integrity Application Engineers.

- Website: [www.3M.com/interconnects](http://www.3M.com/interconnects)
- eTech Service Mailbox: [esd-interconnect-etechservice@mmm.com](mailto:esd-interconnect-etechservice@mmm.com)
- Customer Service: (800) 225-5373
- TS-2199 Data Sheet for 3M™ Latch Eject Header 2 mm
- TS-2105 Data Sheet for 3M™ SCI Cable Assemblies and Carriers 2 mm
- TS-2298 Data Sheet for 3M™ SCI 2 mm Design Kits with test boards, cable assemblies and headers

## NOTES

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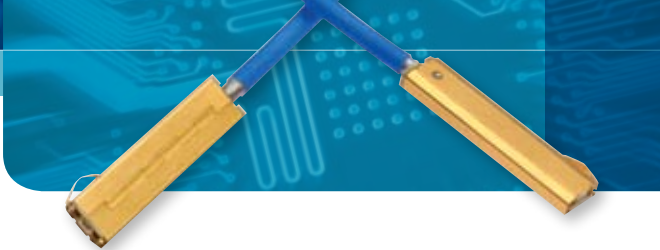
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## NOTES

A series of horizontal dotted lines for taking notes, spanning the width of the page below the 'NOTES' header.

Note: The test board used in the cover photo is for example only. See contents of this manual for full description of the actual board.

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