

3M™ Shielded Controlled Impedance (SCI) Cable Assembly 2 mm Latch/Eject Development Kit

Engineers have been designing systems requiring cable-to-board interconnects and cable assemblies for various applications. In most of these designs, engineers are forced to compromise and make significant tradeoffs between critical design parameters—electrical performance vs. signal density vs. mechanical reliability vs. cost. These tradeoffs often leave the overall system design impaired with respect to one or more of these critical design parameters.

What if you could design using building blocks for high performance cable-to-board solutions that allow for a seamless compromise across the critical design parameters? Further, what if you can use an industry standard, high density 2 mm PCB footprint to achieve this?

The 3M Shielded Controlled Impedance (SCI) Cable Assembly 2 mm Latch/Eject Development Kit helps you evaluate the critical design parameter tradeoffs mentioned above and design a high performance solution that closely aligns with your requirements. It has all of the building blocks necessary to design a high performance cable-to-board solution with seamless tradeoffs between critical design parameters with an industry standard high density 2 mm footprint.

Development Kit Components

- The Development Kit includes
- SCI 2 mm Differential and Single-Ended Cable Assemblies (Coax and Twinax)
- 2x25 SMT or Through-hole 2 mm Latch/Eject Headers
- 2x25 Carrier to bundle the SCI Cable Assemblies
- Optional PCB with SMAs for testing
- CD-ROM containing technical application note, test instruction sheet and product technical data sheets
- Post-paid reply card to request product updates



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Features

The key features of this cable-to-board solution are:

- 1 Gbps single-ended, 5 Gbps differential or mix and match cable-to-board solution
- Robust latching for mechanically challenging environments
- Low crosstalk and skew
- Upgrade to higher speed and better crosstalk for molded and IDC cable assemblies
- High density—2 mm pitch—upgrade from 0.100"

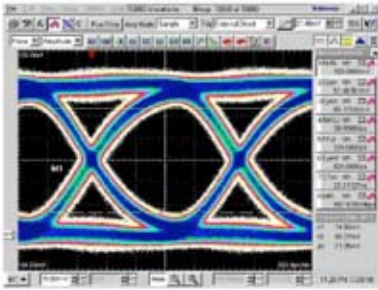
Applications

Typical applications of the SCI cable-to-board solution include:

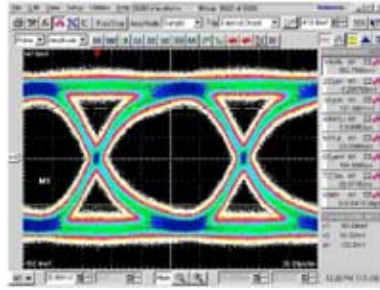
- Embedded computing systems
- Military and avionics test systems
- Bench top analytical tools (data acquisition)
- Systems requiring multi-signal high speed probes, such as burn-in systems
- Medical imaging systems—ultrasound systems, X-Ray systems
- Embedded control systems
- Machine vision systems



Bandwidth Performance



1 Gbps Single Ended



8 Gbps Differential

- Electrical Performance (two headers + two carriers + two connectors + 12" cable)
- 1 Gbps Single Ended, 5+ Gbps Differential

Crosstalk Performance

	Differential			Single Ended	
	Rise Time (ps)	Near End Crosstalk	Far End Crosstalk	Near End Crosstalk	Far End Crosstalk
Increasing Speed ↓	250	2.7%	2.9%	4.5%	7.2%
	100	5.8%	6.6%	9.0%	13.4%
	50	7.6%	9.5%	11.4%	16.0%

- Electrical Performance (two headers + two carriers + two connectors + 12" cable)
- Low Crosstalk at typical risetimes

Ordering Information for 3M™ Shielded Controlled Impedance (SCI) Cable Assembly - 2 mm Sample Development Kits

Part #	Description
9401	Kit with SMT Header, without PCB
9402	Kit with SMT Header, with PCB
9403	Kit with Through-hole Header, without PCB
9404	Kit with Through-hole Header, with PCB

For evaluation samples please call your local 3M sales representative or email isd_samples@mmm.com

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Important Notice

Before using this product, you must evaluate it and determine if it is suitable for your intended application. You assume all risks and liability associated with such use.

Warranty; Limited Remedy; Limited Liability.

3M's product warranty is stated in its Product Literature available upon request. **3M MAKES NO OTHER WARRANTIES INCLUDING, BUT NOT LIMITED TO, ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE.** If this product is defective within the warranty period stated above, your exclusive remedy shall be, at 3M's option, to replace or repair the 3M product or refund the purchase price of the 3M product. **Except where prohibited by law, 3M will not be liable for any indirect, special, incidental or consequential loss or damage arising from this 3M product, regardless of the legal theory asserted.**



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Additional Solutions from the 3M SCI Product Family

3M also offers 0.100" SCI High Performance Cable Assemblies with corresponding mating headers and carriers. These assemblies are used for multi-GHz, single-ended cable-to-board applications. See technical data sheets TS-0802 and TS-0803.

Anticipated Future Development:

High Density SCI (HDSCI) Cable Assemblies with a signal-to-signal pitch of 2 mm and a signal-to-ground pitch of 1 mm used for ultra high density, high performance single-ended applications of up to 10 Gbps when used with 3M™ MetPak™ HSHM Headers. HDSCI assemblies are typically customized for the application.