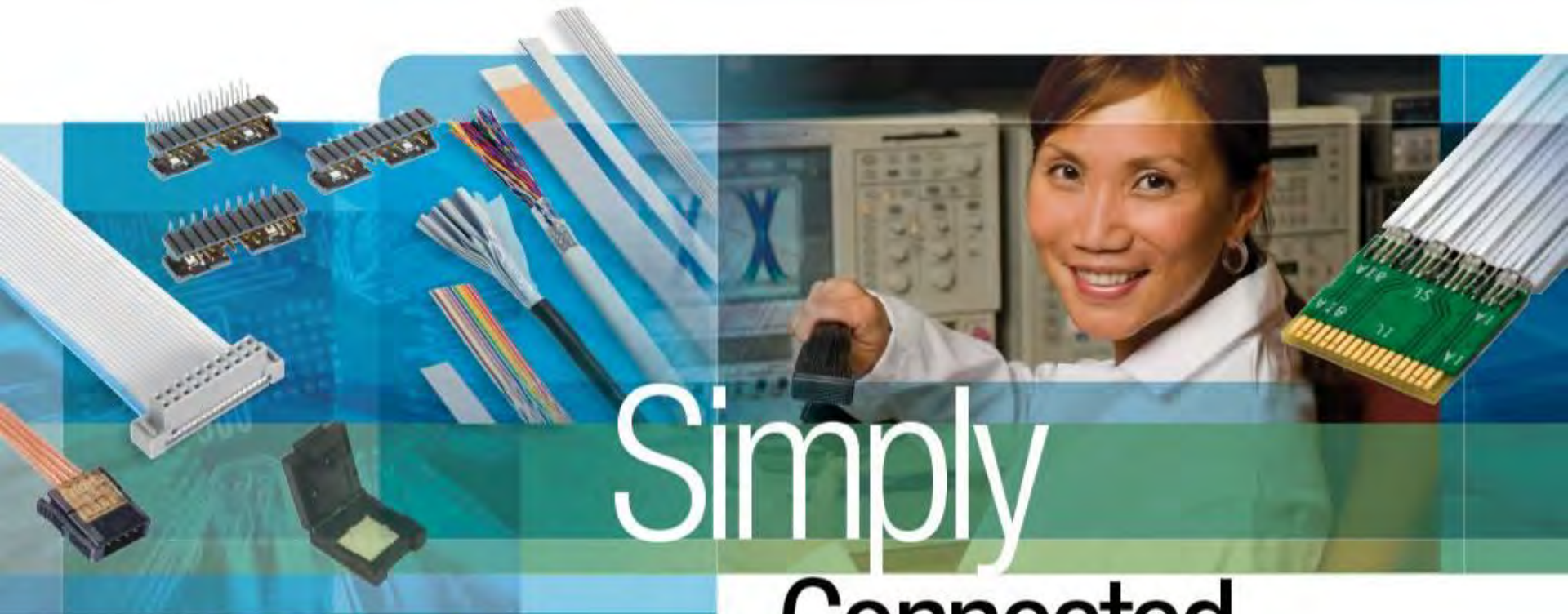


3M Electronic Solutions Division

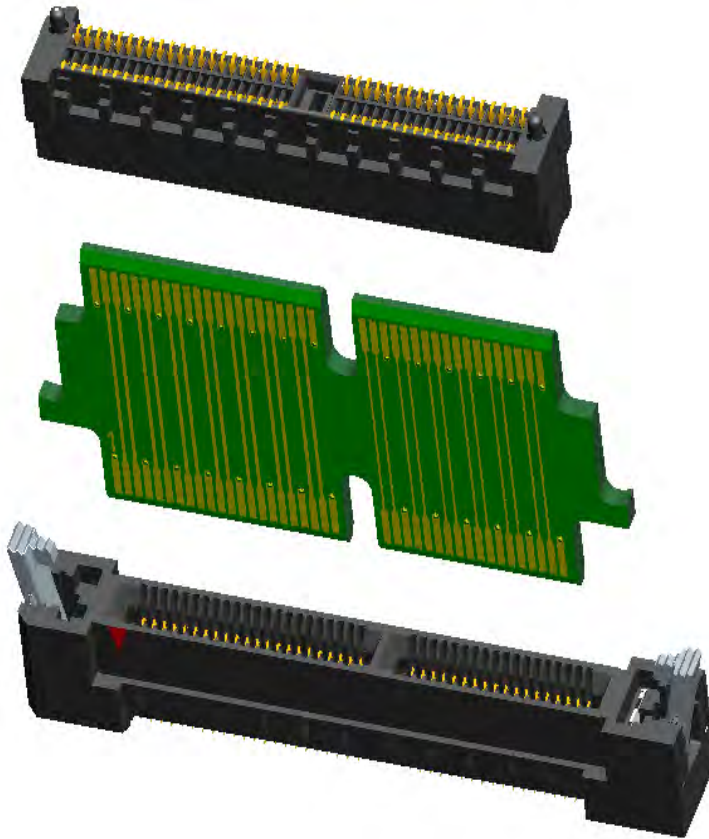
3M™ High-Speed Card-Edge Connector SPD08



Simply Connected



3M™ High-Speed Card-Edge Connector SPD08

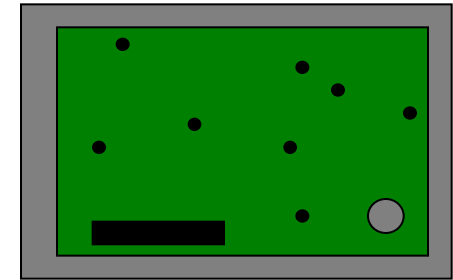
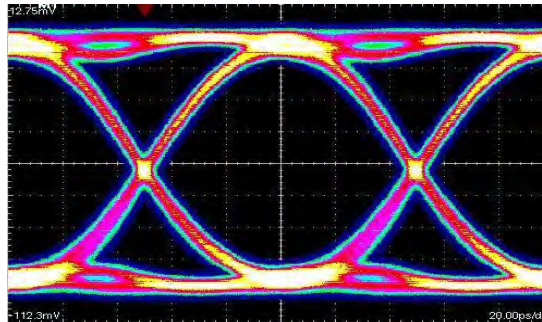
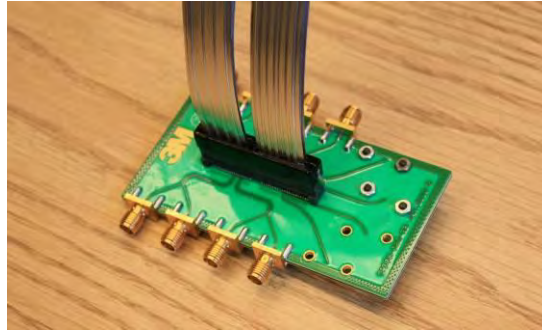
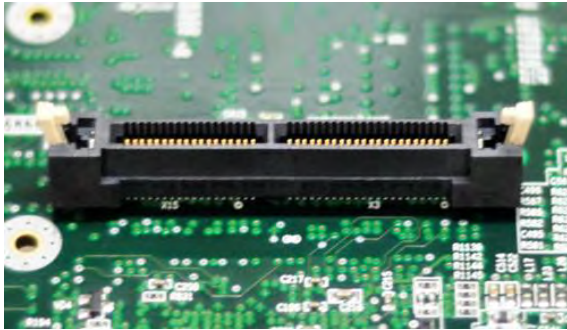


15 Gbps Board-to-Board and 25 Gbps Wire-to-Board Connector

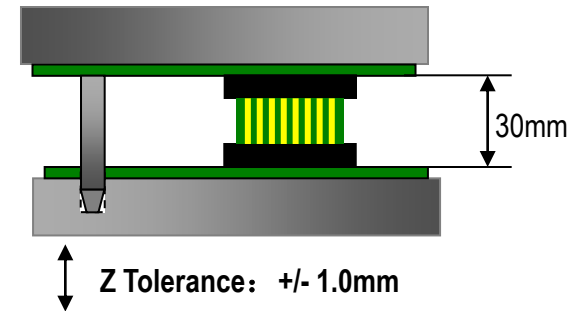


Product Features and Benefits

- High Density 0.8 0mm pitch SMT BM Socket, B-T-B / W-T-B application;



X,Y Tolerance: $\pm 0.8\text{mm}$



Z Tolerance: $\pm 1.0\text{mm}$

- High speed signal transmission performance up to **15 Gbps (B2B)** and **20 Gbps (W2B)**
- Flexible stack height, from **16 mm to 40 mm**
- Robust tolerance for misalignment - 0.8 mm in axis X, Y, 1.0 mm in axis Z (at 30 mm stack height)
- Current carrying capacity up to **3.0A** (single pin); 0.5 A current rating fully loaded
- High temp LCP resin for plastic housing (withstand 260 °C lead-free SMT)

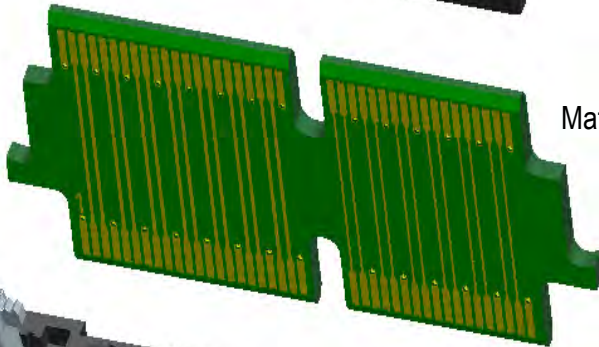


Board-to-Board Application

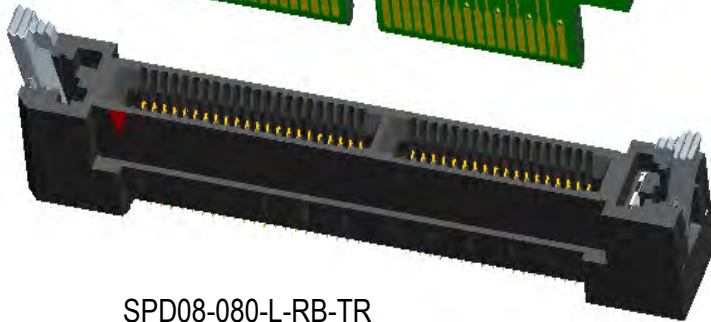
SPD08-080-RB-TR



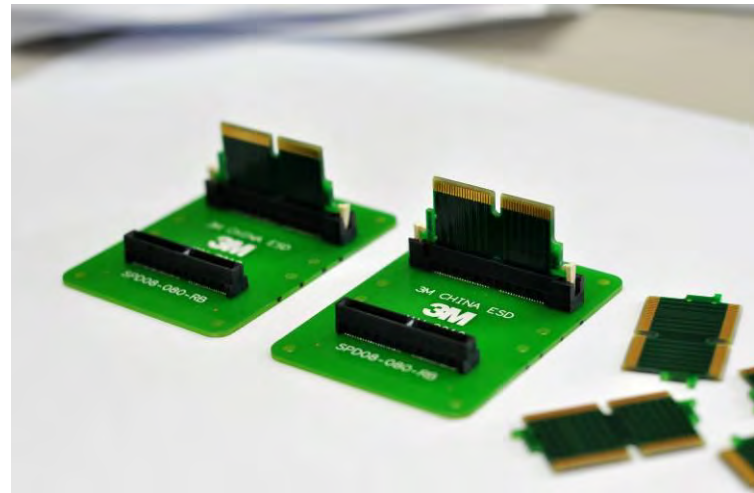
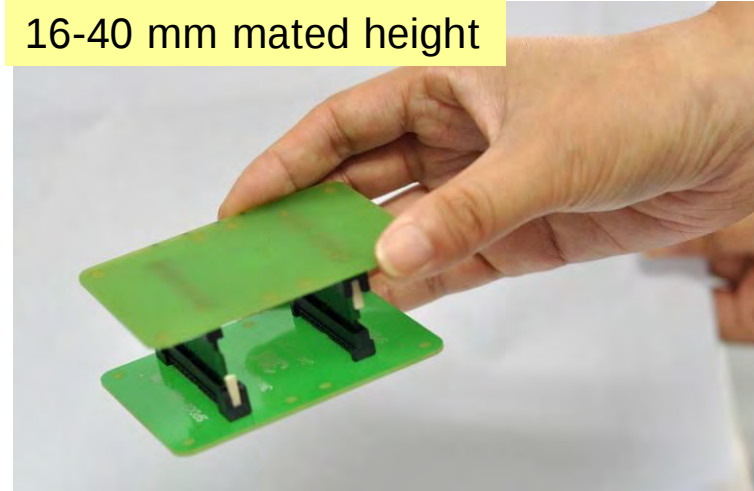
Mating Card



SPD08-080-L-RB-TR



16-40 mm mated height

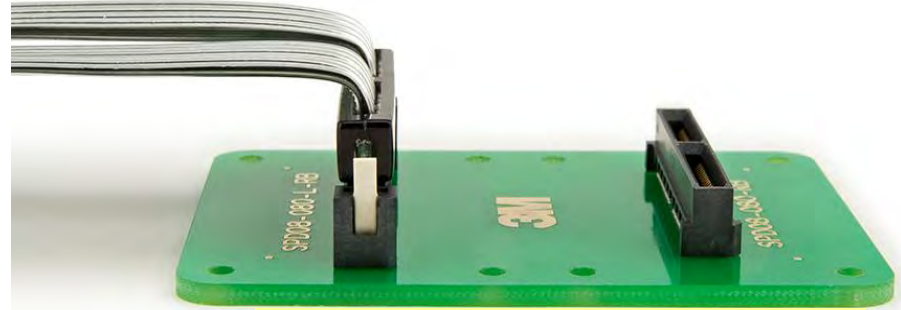


Spring contact can accept 1.57 ± 0.16 mm thick mating card with lower insertion force, average 0.40N/Pin. (mated with 1.57 mm thick card)

3M™ High-Speed Card-Edge Connector SPD08 + 3M™ Twin Axial Cable Application

Paddle Card design

Right Angle

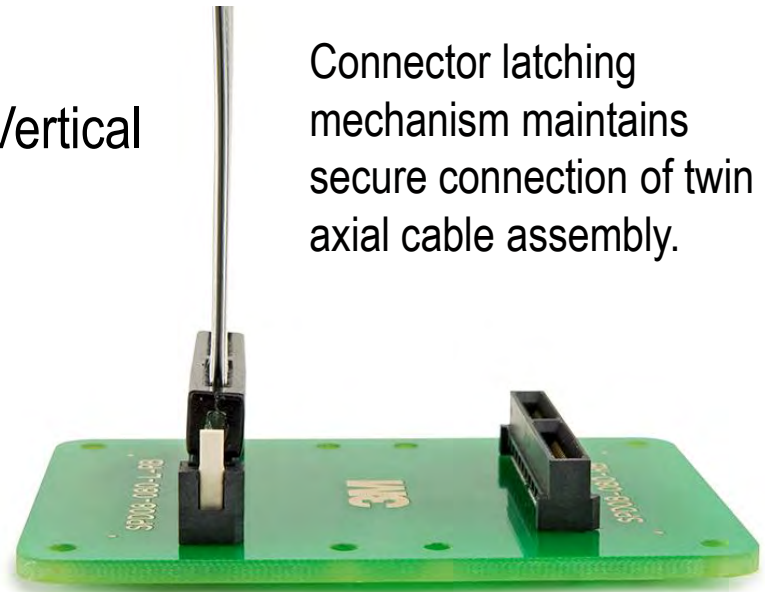


Typically used for internal protocols
such as PCI Express



Vertical

Connector latching
mechanism maintains
secure connection of twin
axial cable assembly.



Typical Applications

Base Stations, Servers, Hubs, Switches, Routers



Ordering Information

SPD08 - XXX - X - XX - XX

NO OF POSITIONS

020, 040, 060

064, 080, 100, 120, 140,

160, 180, 200

LATCHING OPTION

BLANK= W/O LATCH

L = WITH LATCH

PACKAGING OPTION

BLANK= TRAY

TR= TAPE & REEL (Std. Option)

PLATING OPTION

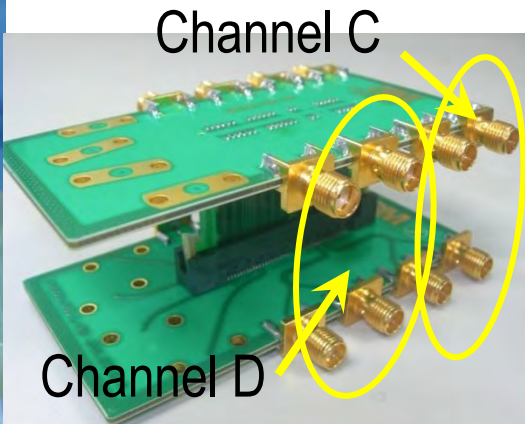
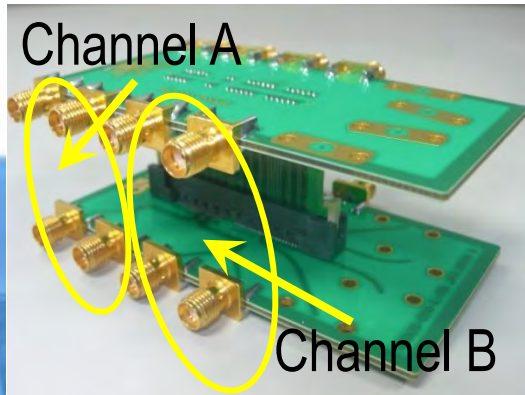
RB= 0.76um GOLD (Std. Option)

RA= 0.25um GOLD

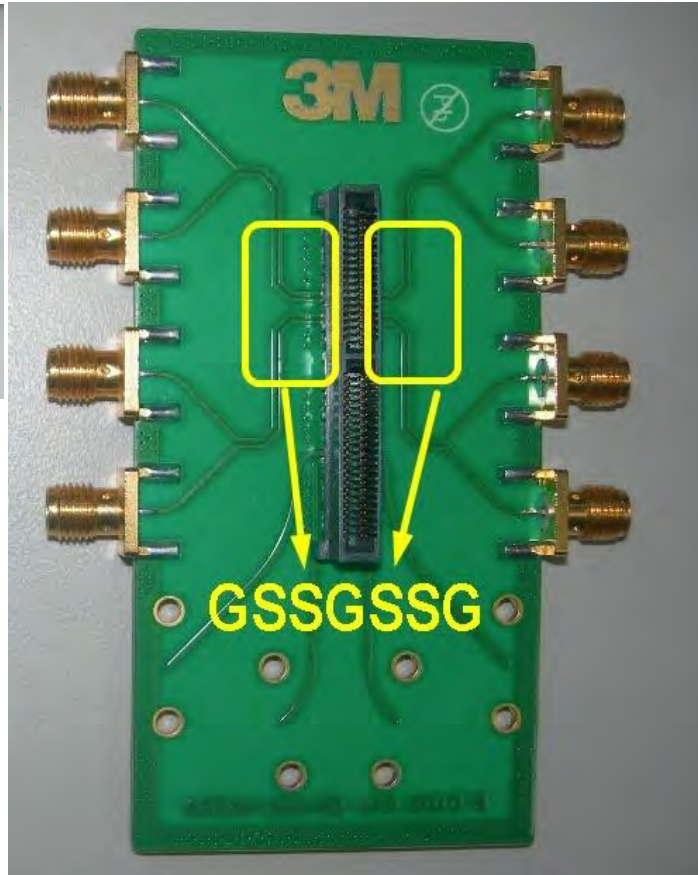
All positions are not tooled. Please refer to sales drawing for currently tooled positions.

B2B Performance Test

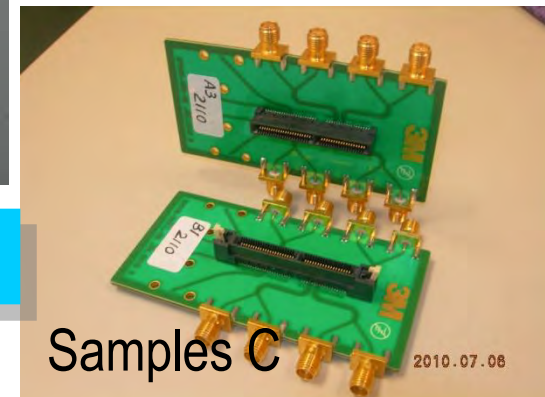
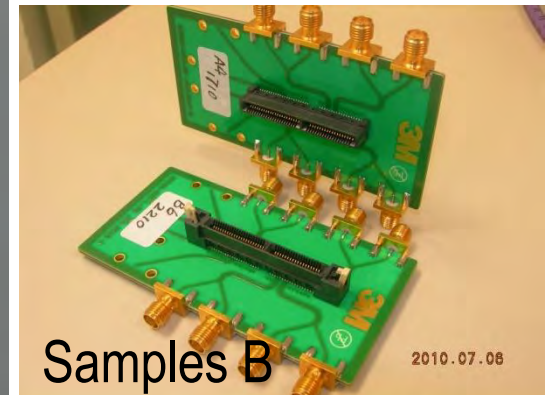
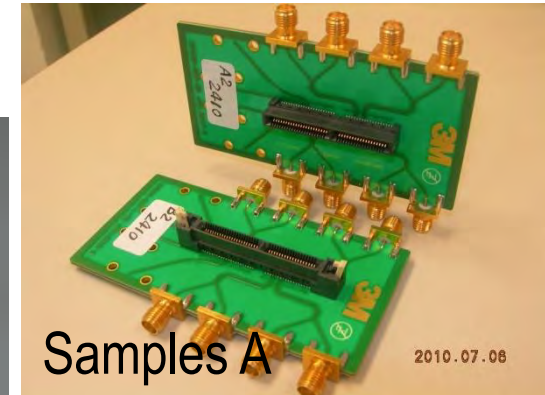
Test Ports and DUT Descriptions



DUT Test Channels



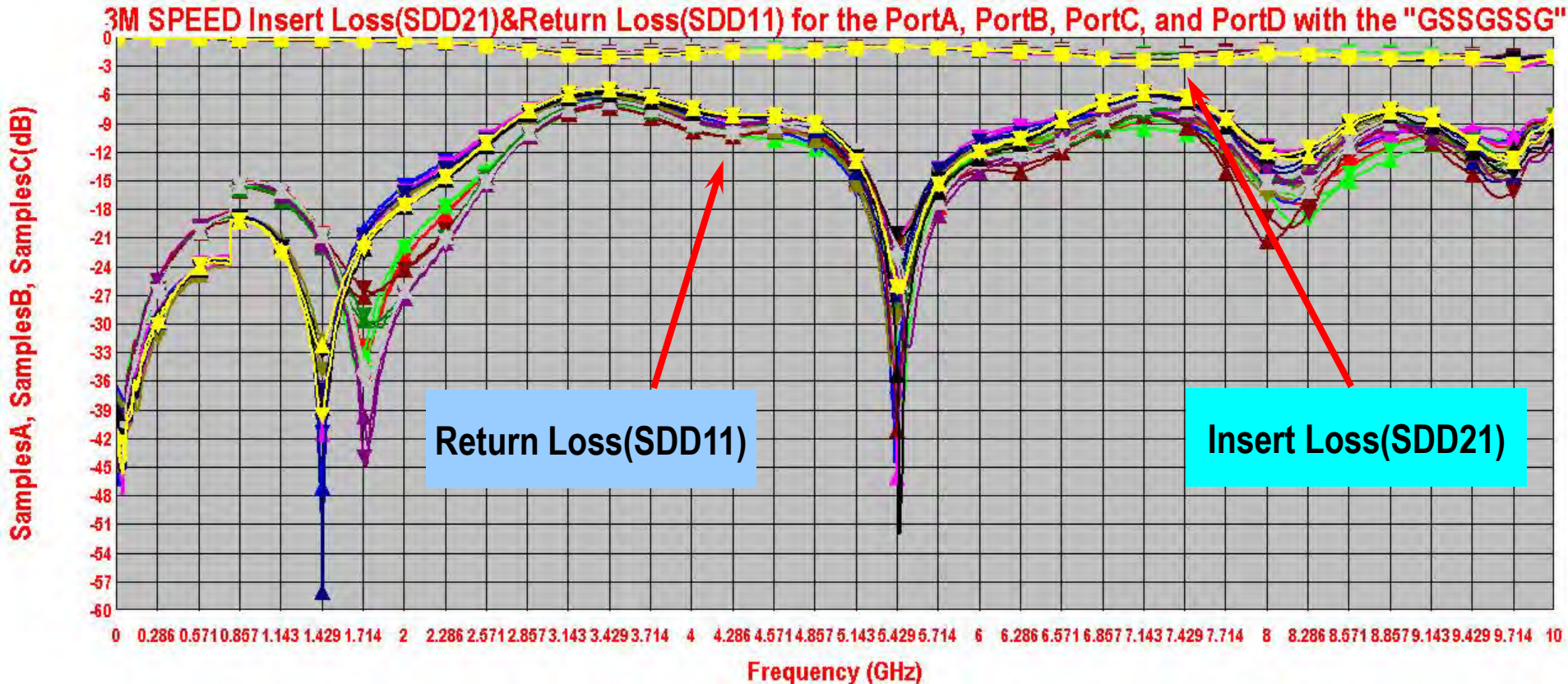
DUT Pin Mapping (GSSGSSG)



DUT Samples



3M™ High-Speed Card-Edge Connector SPD08 Insert Loss(SDD21) & Return Loss(SDD11) for the “GSSGSSG”



Test Curves for the Samples A, Samples B and Samples C.

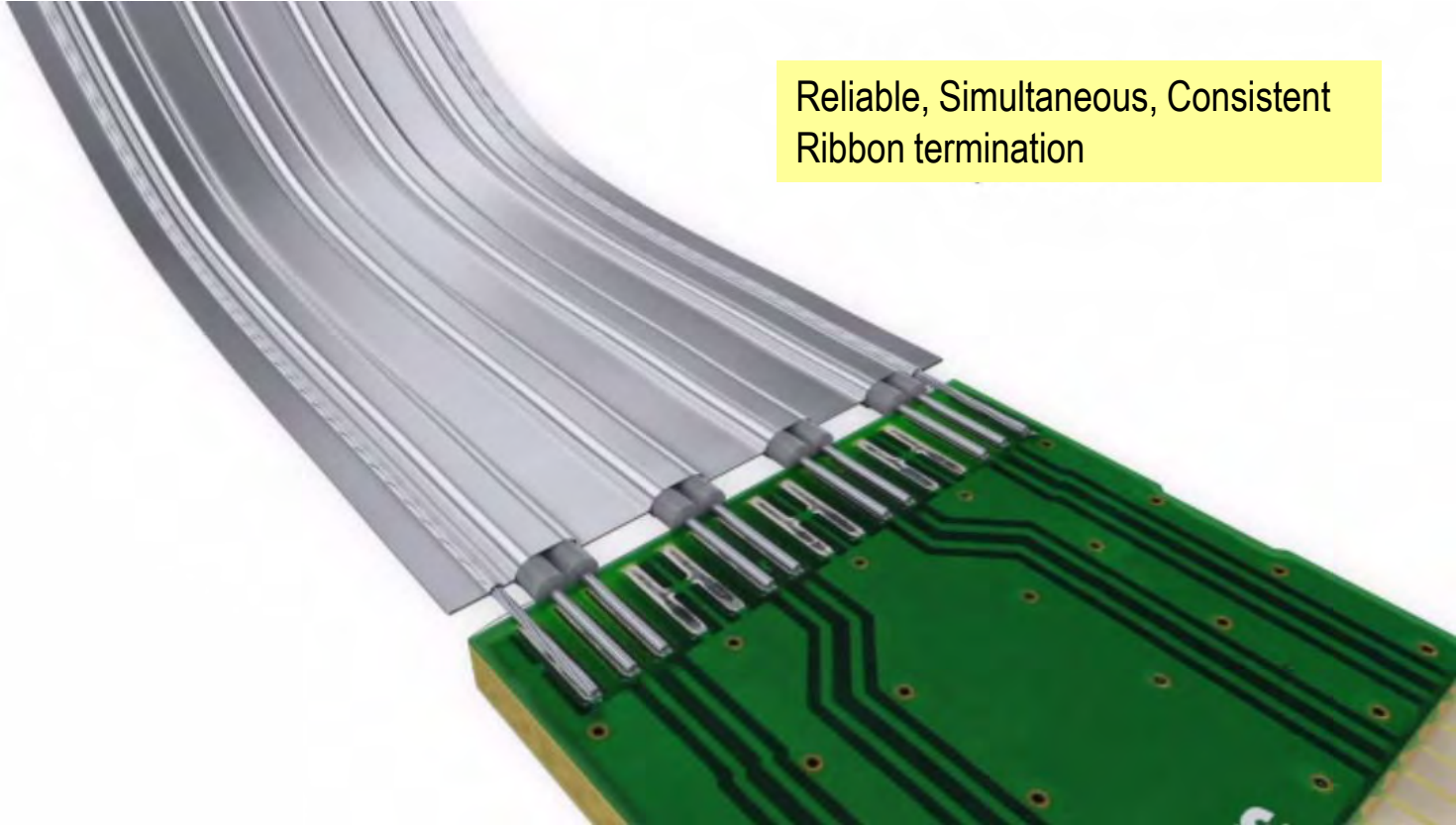
Insertion Loss 7.5GHz@-3dB



W2B Performance Test

3M™ Twin Axial Ribbon Cable Example

Reliable, Simultaneous, Consistent
Ribbon termination



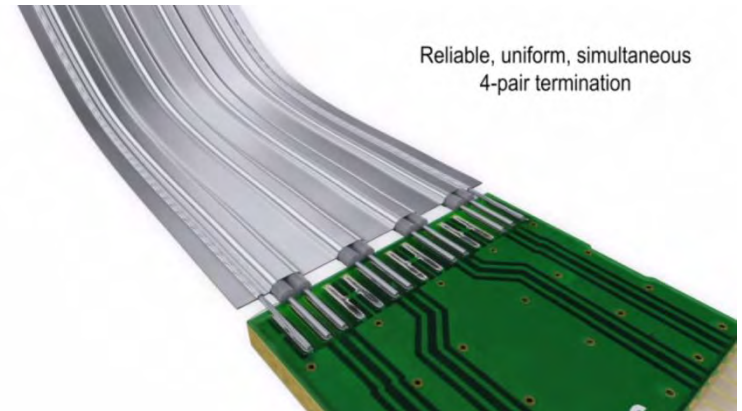
3M™ Twin Axial Ribbon Cable Features and Benefits

- **Thin and Foldable** enables excellent system density and “routability”
 - Thin profile enables enhanced routability for internal applications
 - Can be folded at very tight bend radii with virtually no performance sacrifice
- **Electrical Performance**
 - **High Bandwidth**; unique longitudinal shield has resonant free insertion loss up to at least 20 GHz
 - Excellent EMI performance
- **Ribbon construction fixes locations of signals and grounds improves the termination process**
 - Efficient termination process with no wire routing errors
 - Reduced termination variability improves reliability

3M™ High-Speed Card-Edge Connector SPD08 and 3M™ Twin Axial Ribbon Cable Assembly Example

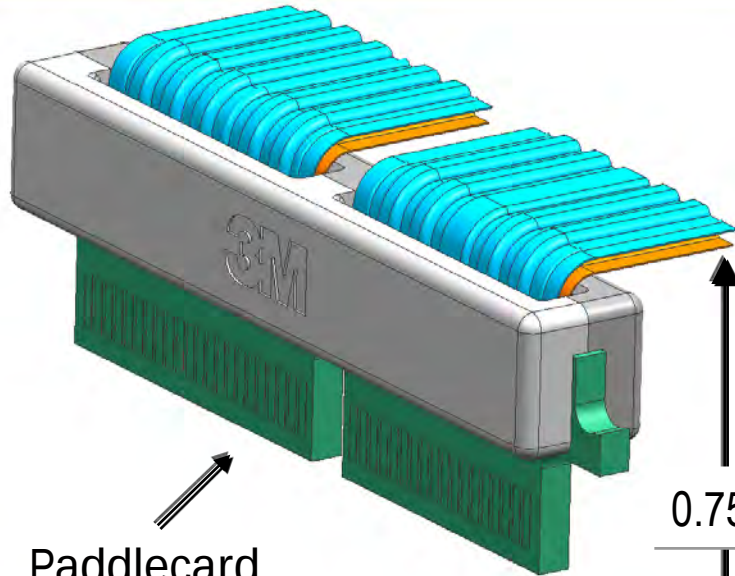
3M SPD08 0.8 mm Board-to-Board Connector
(Paddle-card/Card-edge compatible)

3M Twin Axial Ribbon Cable terminated to a
paddlecard



Reliable, uniform, simultaneous
4-pair termination

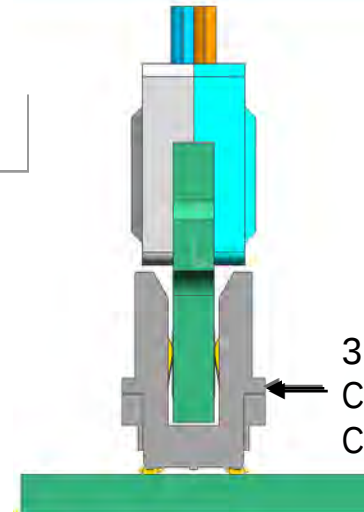
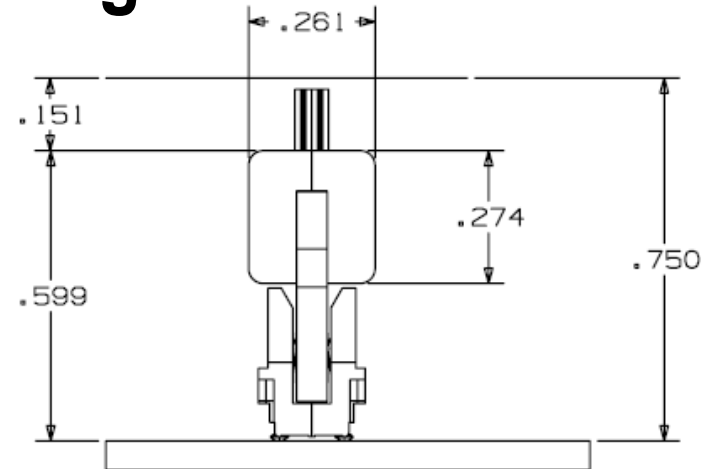
3M™ High-Speed Card-Edge Connector SPD08 + 3M™ Twin Axial Cable Plug Design...



Paddlecard
design

0.750 max height

Length 2.1" with latches open
80 total contacts



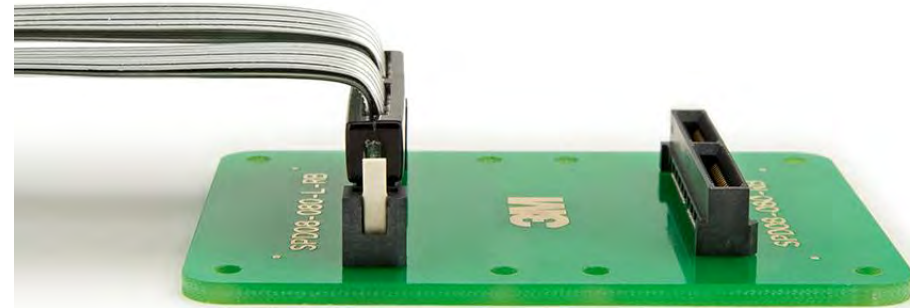
3M™ High-Speed
Card-Edge
Connector SPD08



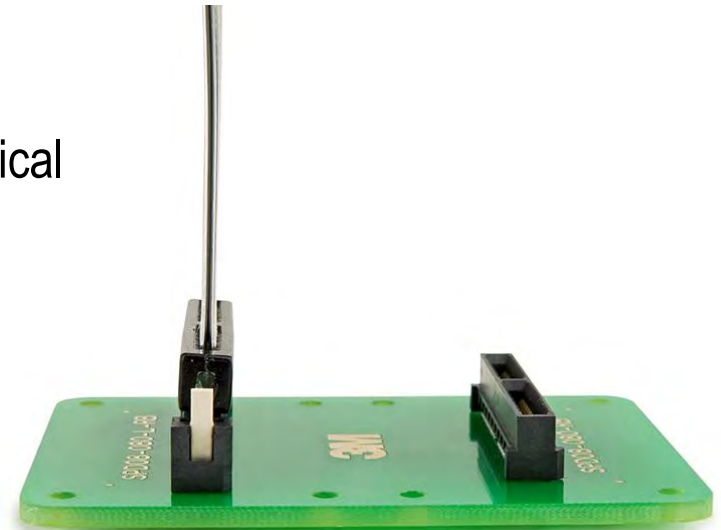
3M™ High-Speed Card-Edge Connector SPD08 + 3M™ Twin Axial Cable Assembly Prototype...

Right Angle

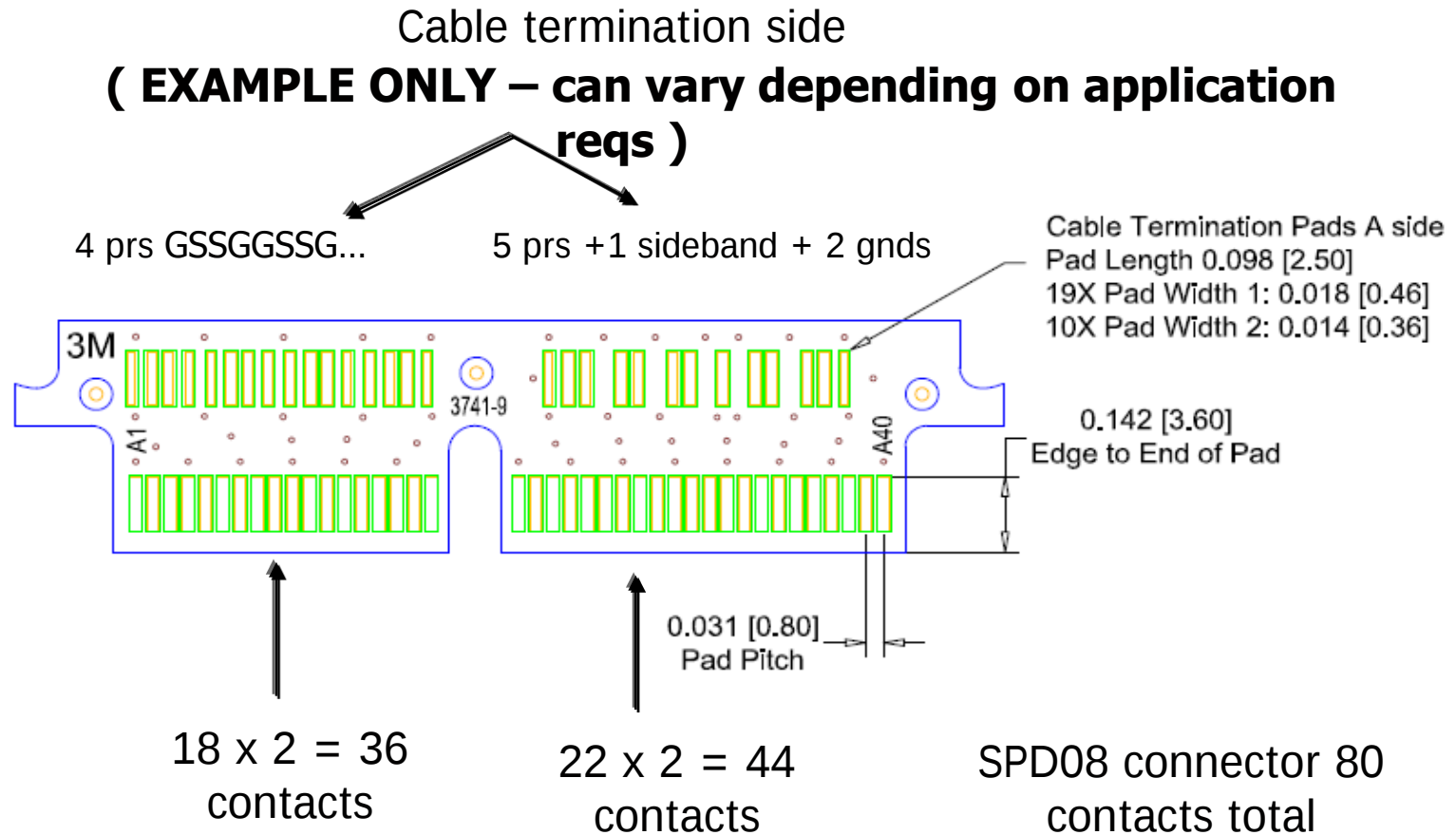
Paddlecard design



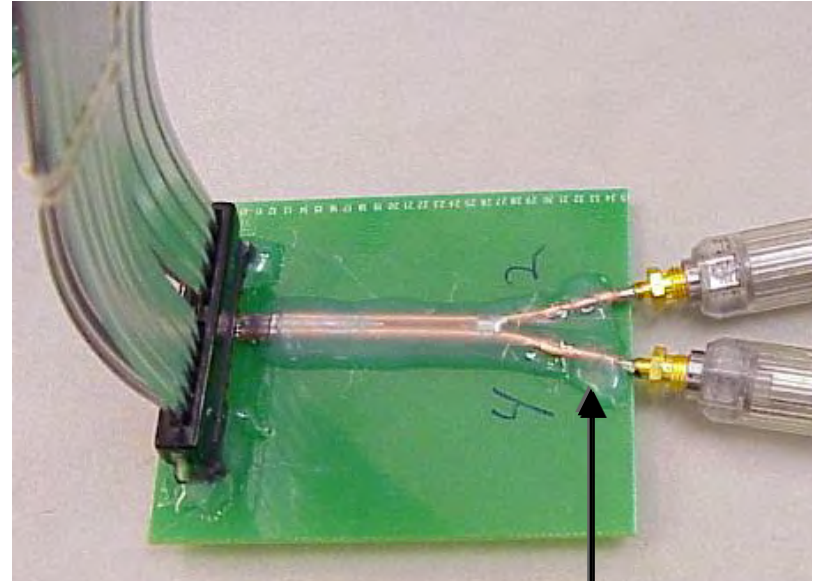
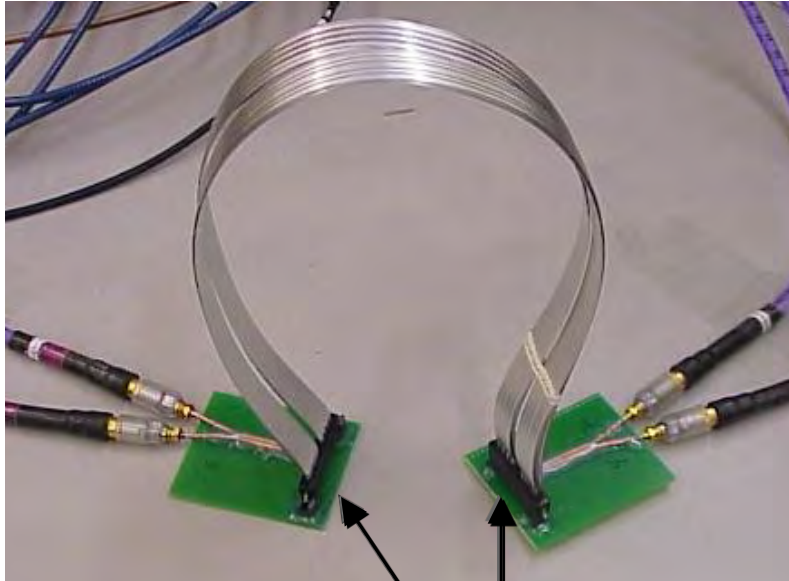
Vertical



3M™ High-Speed Card-Edge Connector SPD08 Paddlecard example

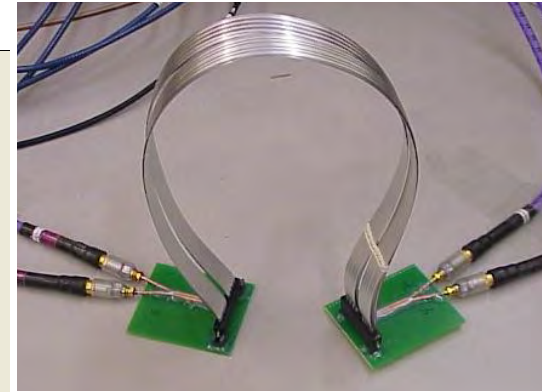
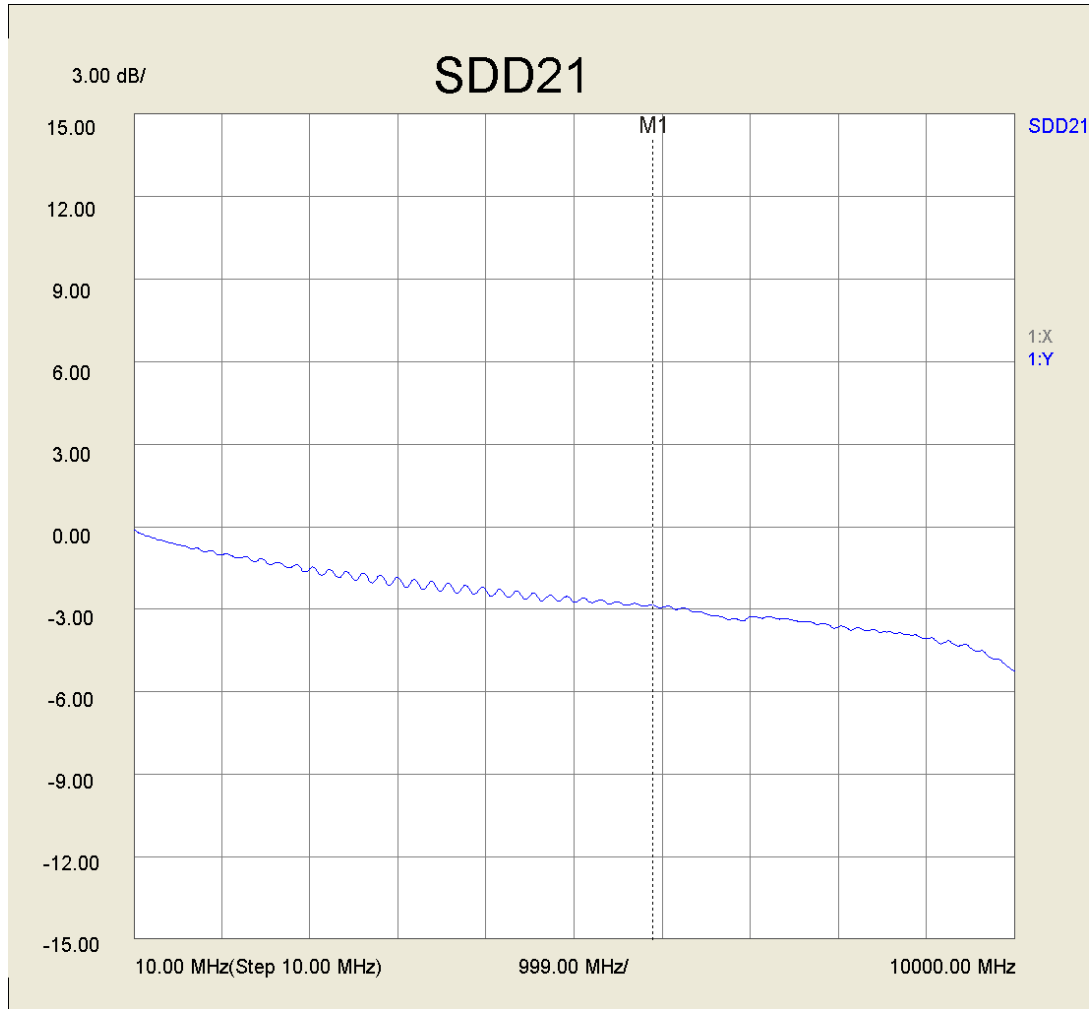


3M™ High-Speed Card-Edge Connector SPD08 + 3M™ Twin Axial Cable Assembly DUT...



Two SPD08 boardmount connectors and two paddle card connectors
interconnected by 0.5 meter 30(1) SPC twin axial cable with semi-rigid launches

DUT 6 GHz – 3 dB point



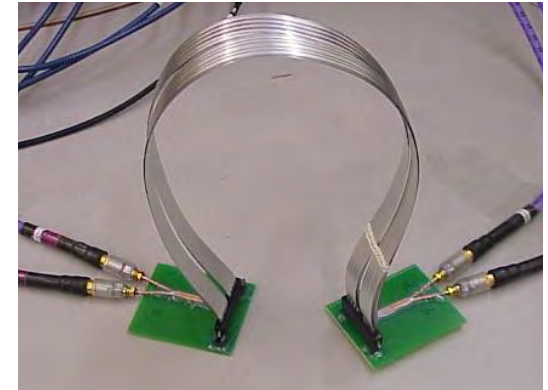
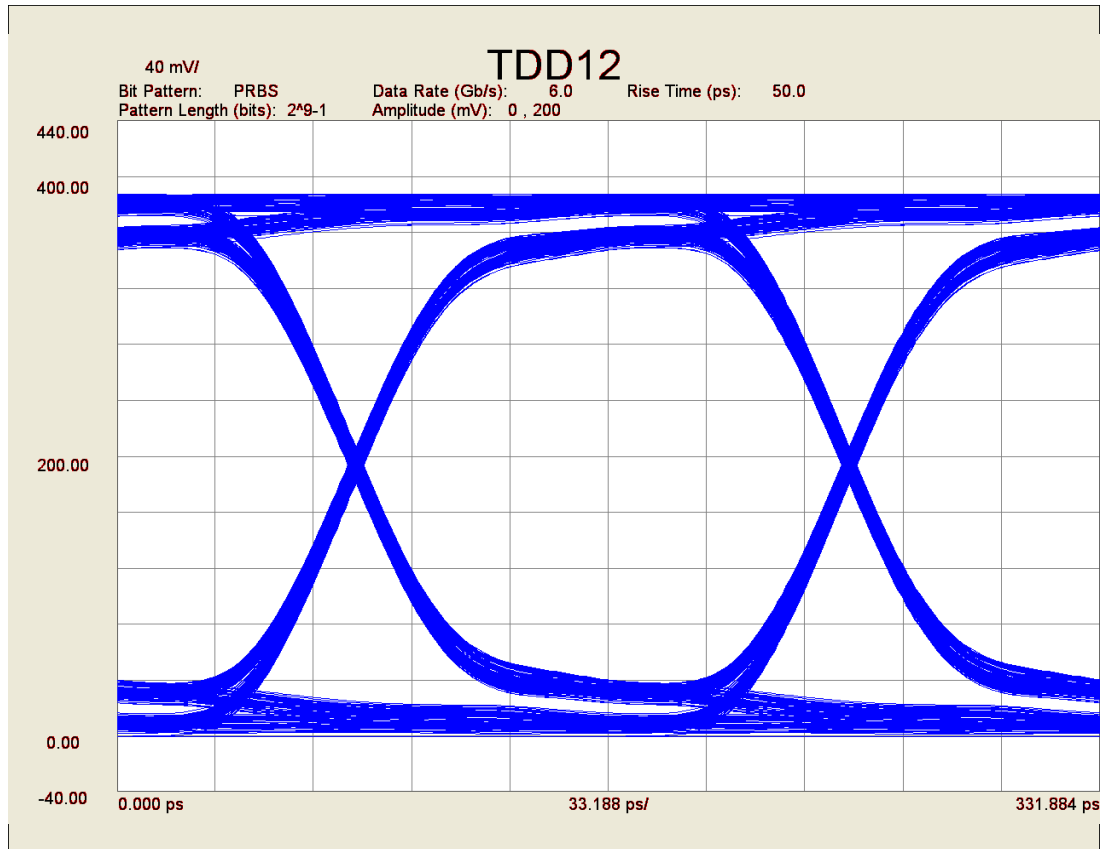
½ meter 30 AWG
SPC 3M™ Twin Axial
Cable Assembly

+ 2 each 3M™
High-Speed Card-
Edge Paddlecard
Connectors

+ 2 each 3M High-
Speed Boardmount
Connectors SPD08



6 Gbps / 50 ps rise time > 85% opening factor

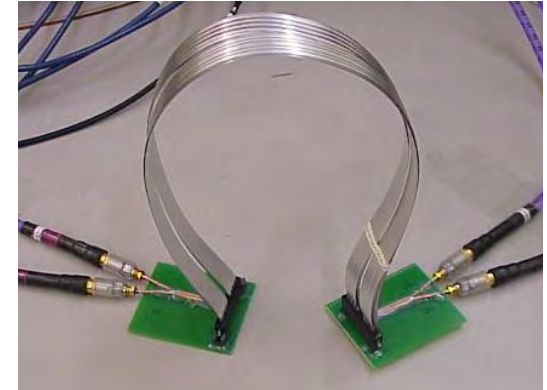
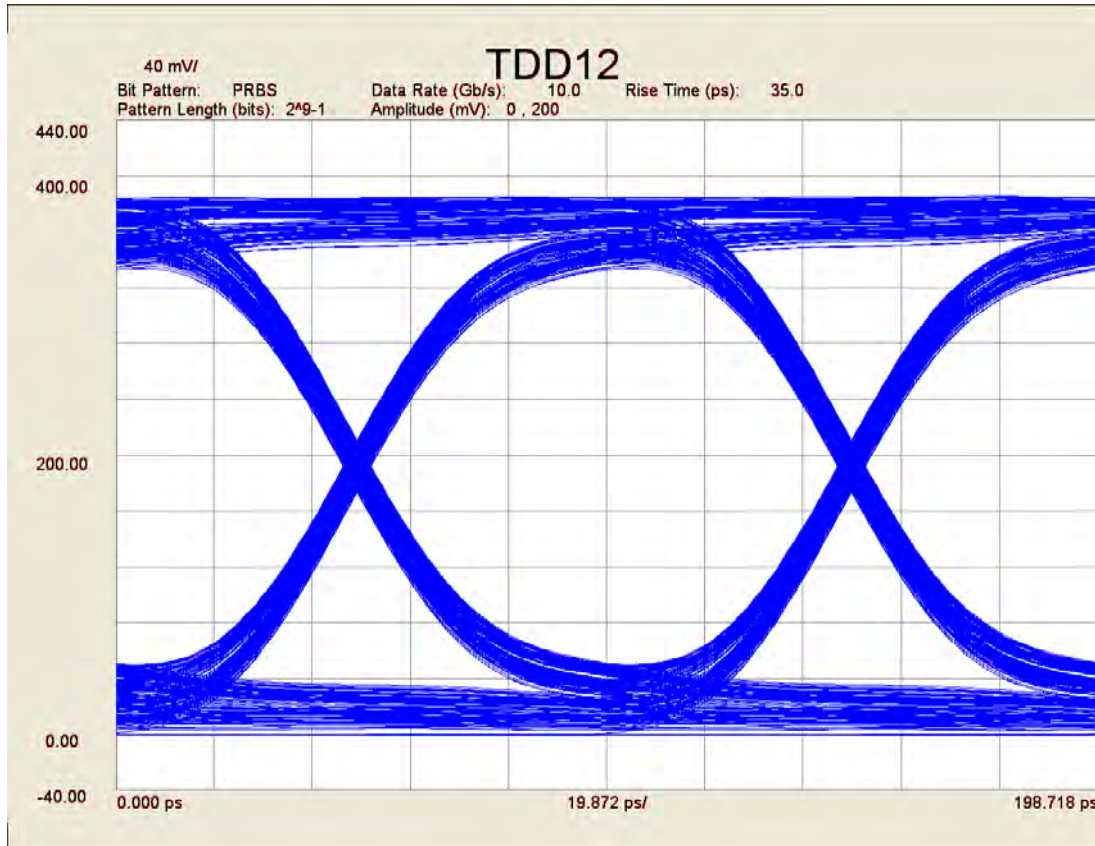


½ meter 30 AWG
SPC 3M™ Twin Axial
Cable Assembly

+ 2 each 3M™
High-Speed Card-
Edge Paddlecard
Connectors

+ 2 each 3M High-
Speed Boardmount
Connectors SPD08

10 Gbps / 35 ps rise time > 80% opening factor

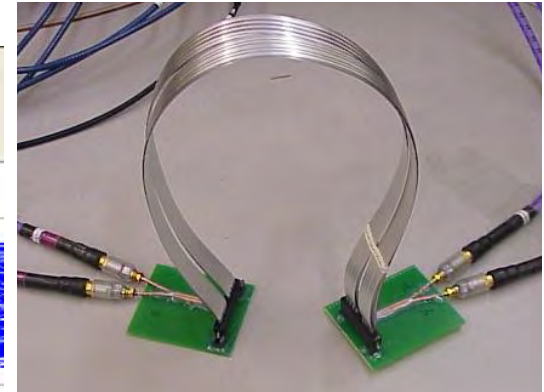
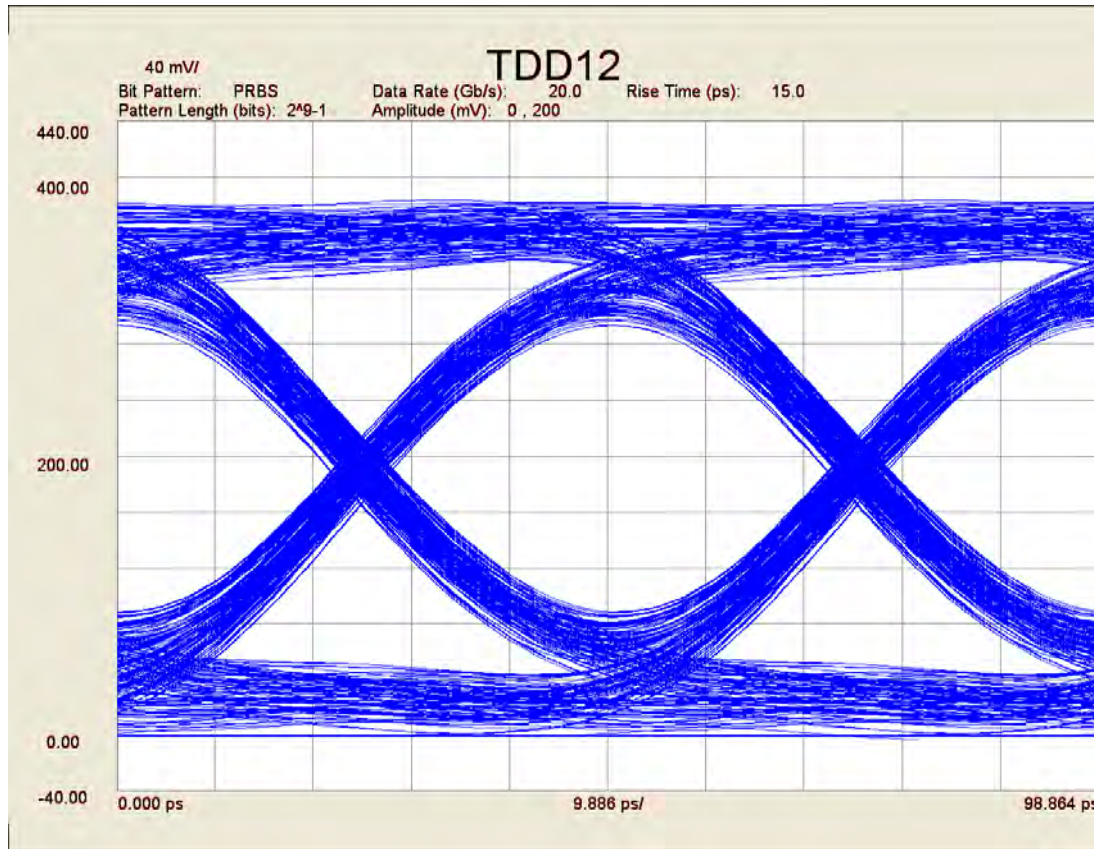


1/2 meter 30 AWG
SPC 3M™ Twin Axial
Cable Assembly

+ 2 each 3M™
High-Speed Card-
Edge Paddlecard
Connectors

+ 2 each 3M High-
Speed Boardmount
Connectors SPD08

20 Gbps / 15 ps rise time > 67% opening factor

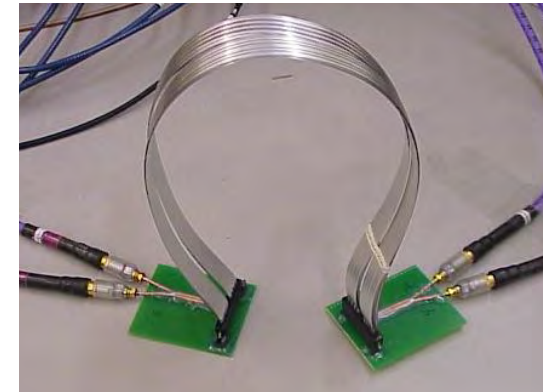
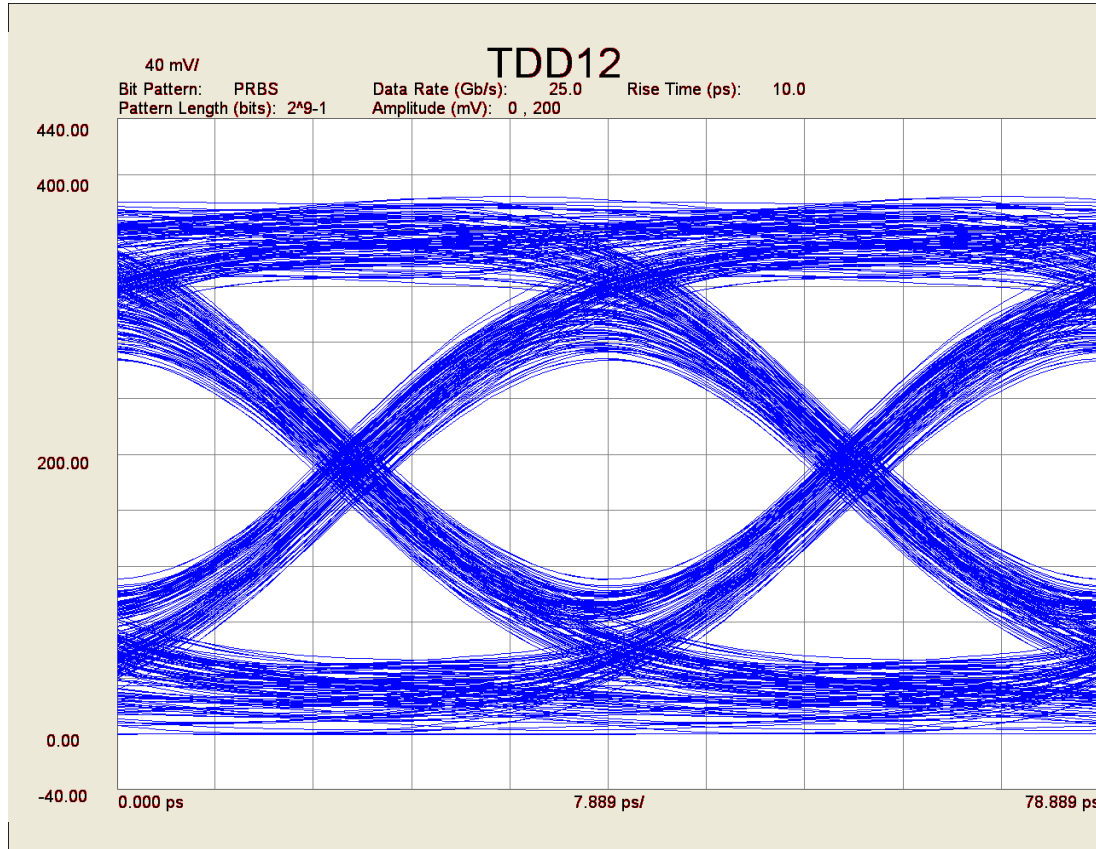


1/2 meter 30 AWG
SPC 3M™ Twin Axial
Cable Assembly

+ 2 each 3M™
High-Speed Card-
Edge Paddlecard
Connectors

+ 2 each 3M High-
Speed Boardmount
Connectors SPD08

25 Gbps / 10 ps rise time > 57% opening factor



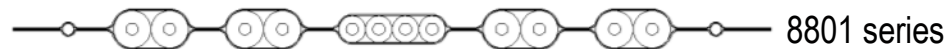
1/2 meter 30 AWG
SPC 3M™ Twin Axial
Cable Assembly

+ 2 each 3M™
High-Speed Card-
Edge Paddlecard
Connectors

+ 2 each 3M High-
Speed Boardmount
Connectors SPD08

3M™ Twin Axial Cable, SL8800 Series

- Wide range of AWG sizes with 85 ohm and 100 ohm differential impedance pairs
- Various pair and sideband combinations for differential pair serial interfaces such as Mini-SAS, and PCIe Gen 2 and Gen 3, SFP and QSFP applications
- Examples of standard cable designs with and without sidebands...



Drawings available at www.3Mtwinx.com



3M is a trademark of 3M Company.

Important Notice

The information we are furnishing you is being provided free of charge and is based on tests performed at internal 3M laboratory facilities. While we believe that these test results are reliable, their accuracy or completeness is not guaranteed. Your results may vary due to differences in test types and conditions. This information is intended for use by persons with the knowledge and technical skills to analyze, handle and use such information. You must evaluate and determine whether the product is suitable for your intended application. The foregoing information is provided "AS-IS". In providing this information, we make no warranties regarding product use or performance, including any implied warranty of merchantability or fitness for a particular 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.**