

## **PCI Express Right-angle Card Edge Connector S-Parameter Testing**

Test 398 (5.8mm)

JF Sawdy, Manager, Signal Integrity Engineering

4/18/05 revised 3/9/06

### **Sample Tested**

5.8mm (0.230 inch) stack height X16 connector (Meritec Part No. 983171-164-2MPF)

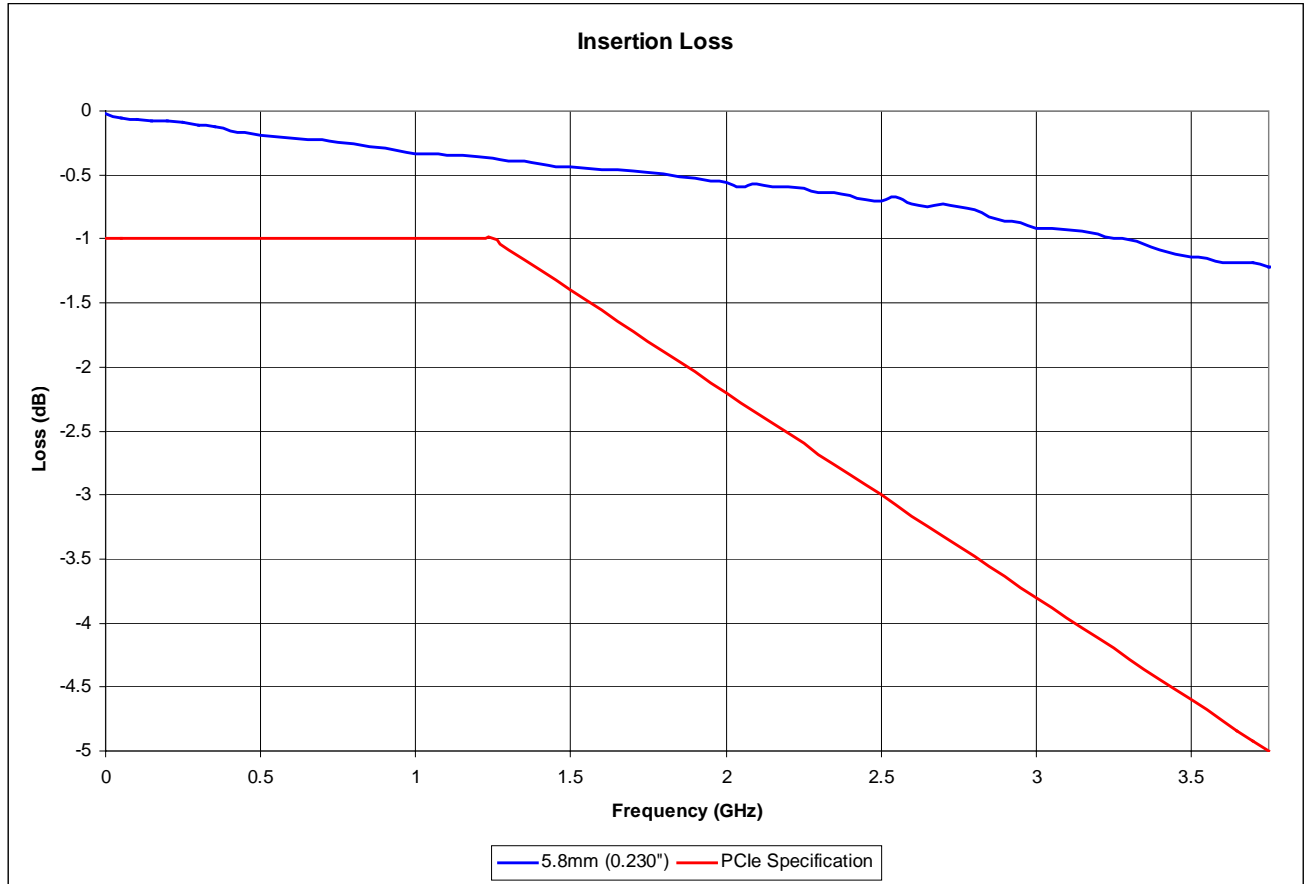
### **Test Equipment**

Tektronix CSA8200 Digital Sampling Oscilloscope with 80E04 TDR Sampling Heads atSpeed's *Oculus eXtractor*<sup>™</sup> software for S-parameter extraction from TDT measurements

Meritec X16 PCI Express Test PC Boards (as shown in photos). These boards were designed to mimic the Test Fixture shown in Section 3 of the *PCI Express Connector High Speed Electrical Test Procedure, Revision 1.0, dated July 19, 2002*

### **Results**

The 5.8mm (0.230 inch) stack height connector passes all of the S-parameter requirements: insertion loss, return loss and NEXT crosstalk per Table 5-2 in *PCI Express Base Specification, Revision 1.1, dated March 28, 2005*.

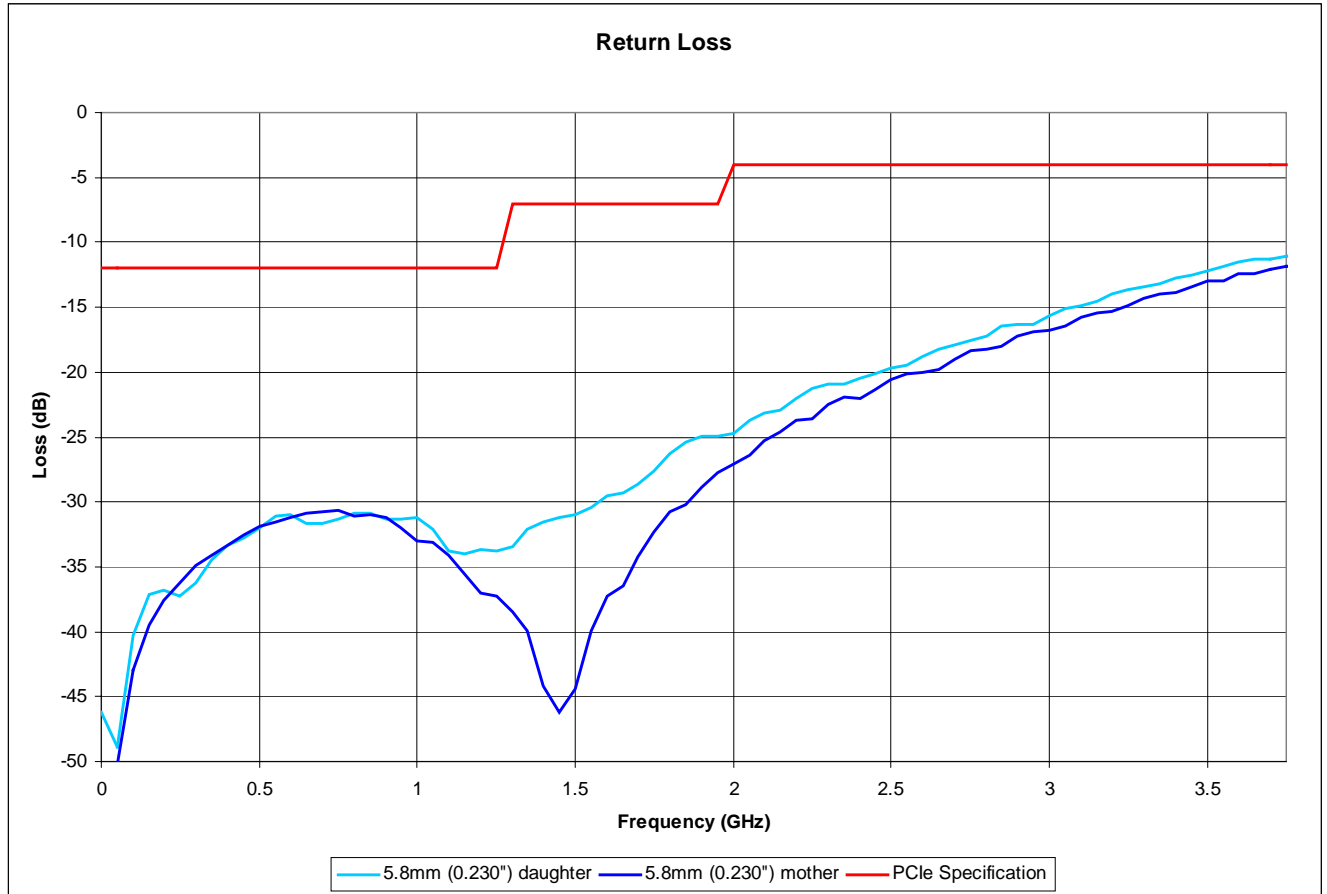


### Insertion Loss

(through the entire signal path including 1.2" of 6 mil PCB traces, the connector vias, the right-angled PCI Express connector and the daughter card edge fingers)

Red line indicates PCI Express maximum loss limits  
Measured connectors are well within the specification

Property of Meritec - © Meritec 2006



### Return Loss

(through the entire signal path including 1.2" of 6 mil PCB traces, the connector vias, the right-angled PCI Express connector and the daughter card edge fingers)

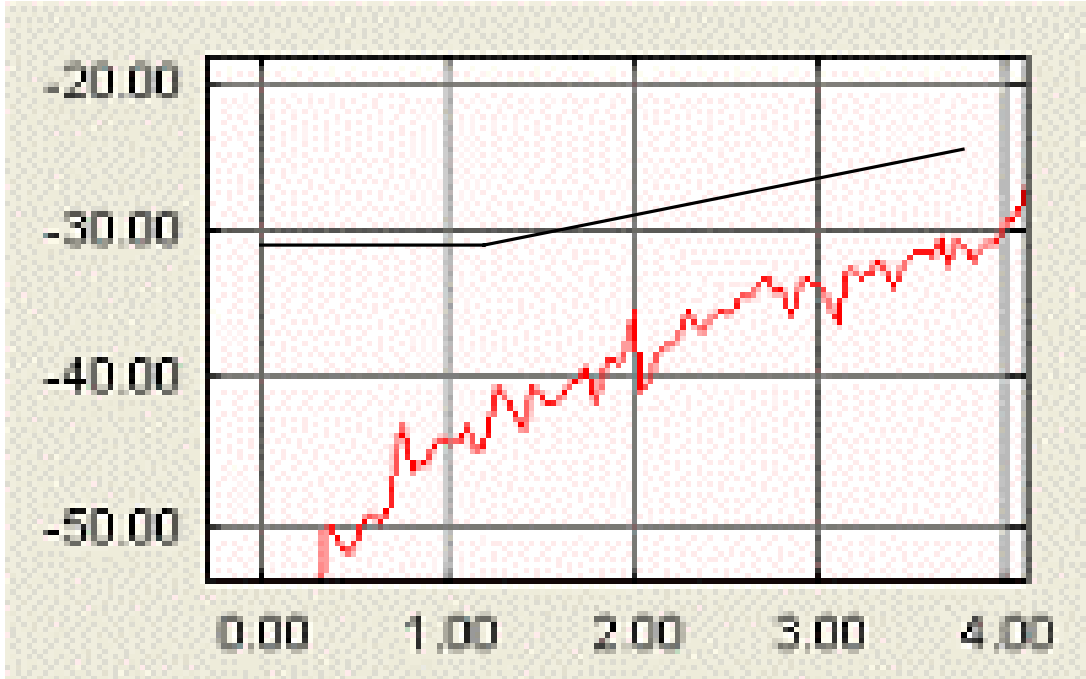
Red line indicates PCIe Express minimum loss limits

Measured connectors are well within the specification

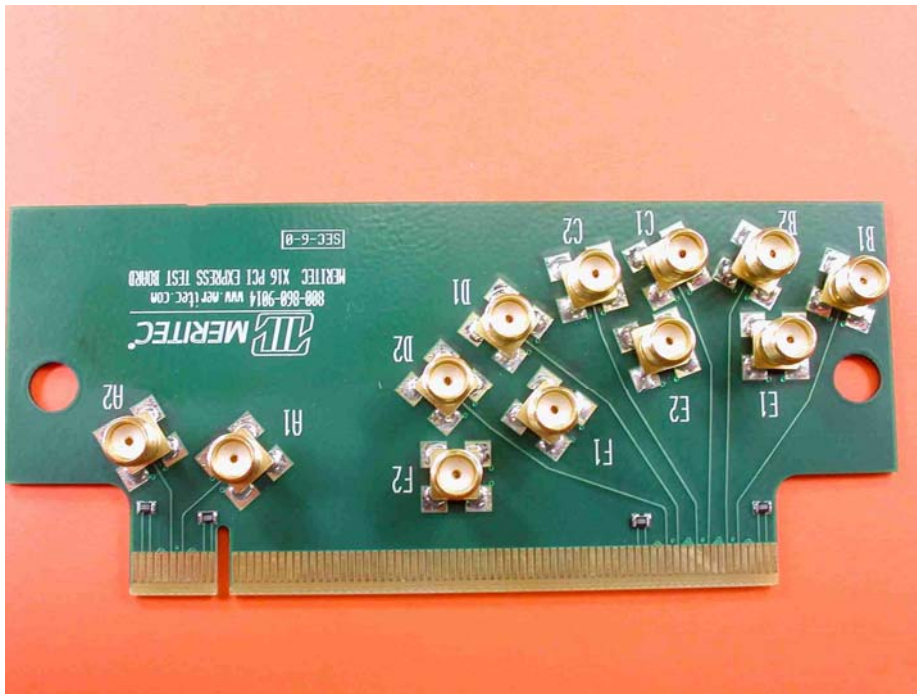
Property of Meritec - © Meritec 2006

MERITEC • 1359 WEST JACKSON STREET • POST OFFICE BOX 8003 • PAINESVILLE, OHIO 44077

888-MERITEC (888-637-4832) / (440)-354-3148 • FAX: (440) 354-0509 • WWW.MERITEC.COM • INFO@MERITEC.COM

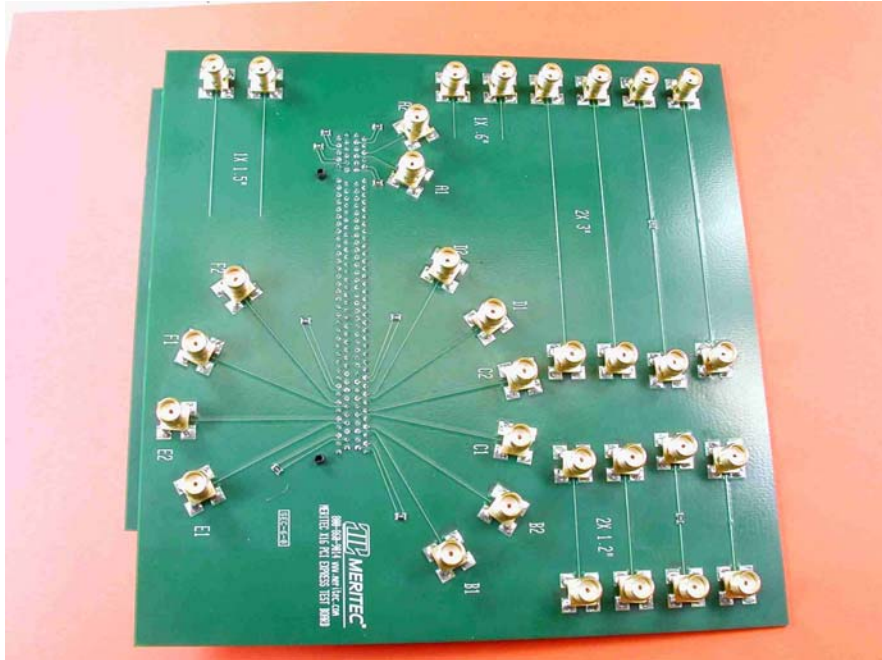


**5.8mm (0.230") Stack NEXT with 4 aggressors**  
Black line indicates PCI Express minimum loss limits  
Measured connectors are well within the specification

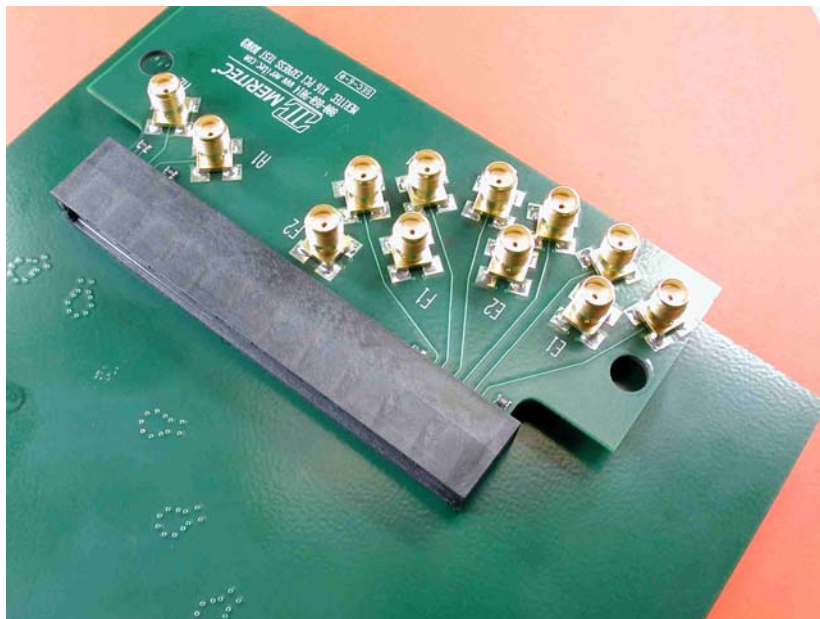


Daughter card

Property of Meritec - © Meritec 2006



Mother board



Mated connector

Property of Meritec - © Meritec 2006