

4x-SMA-25R

25 Gbs Low Noise Test Adapter for assemblies with InfiniBand™ connector

Features

- 25 Gbs performance per differential pair
- Insertion loss less than -3 dB at 16 GHz
- Return loss less than -20 dB at 10 GHz
- Industry standard SFF-8470 4x receptacle
- SMA connectors optimize instrumentation interface
- Calibration traces to zero-out test adapter attributes

Standards & Compatibility

- Ethernet CX4 10 & 20 Gbs (4 x 3.125 and 4 x 25)
- Fibre Channel 4 x 8.5 Gbs and 4 x 17 Gbs
- InfiniBand 2, 5, 10 & 20 Gbs per pair
- Myrinet 12.5 Gbs (4 x 3.125 Gbs)
- OIF CEI 6, 11, & 24 Gbs
- Serial SCSI (SAS) 3, 6 & 12 Gbs per pair
- Serial ATA-2 (3 Gbs) & Serial ATA-3 (6 Gbs)
- SMPTE-292 1.5 & 3 Gbs
- VXS 4 x 2.5 and 4 x 5 Gbs

Benefits & Applications

- Exacting signal integrity dramatically reduces the electrical impact of the measurement system on the observed test and characterization data
- Cable and connector characterization of impedance, reflections, jitter, insertion and return loss, crosstalk, eye patterns, and S-parameters
- Characterization of high-speed chip I/O
- High-performance board I/O and connector characterization

Product specifications and descriptions in this data sheet are subject to change at any time without notice.

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General Description

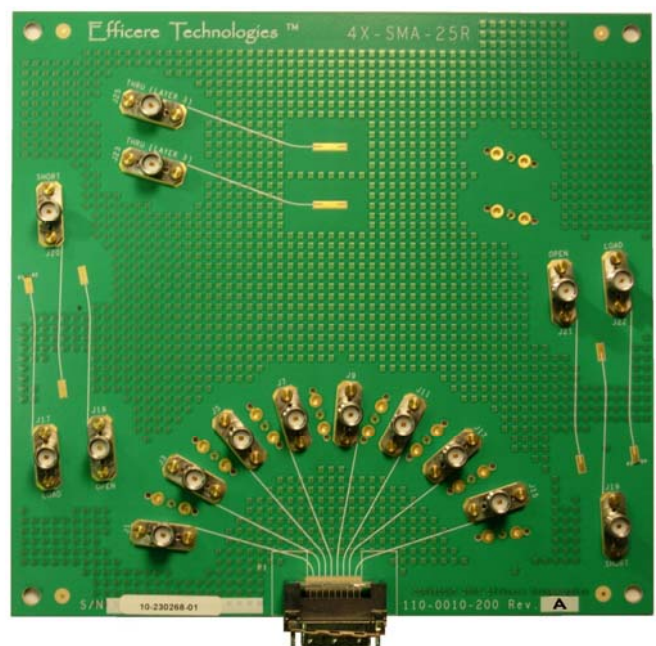
The 4x-SMA Test Adapter provides a very high-speed, low noise evaluation vehicle that enables high-performance characterization of current and next-generation cabling and fixturing using the 4x InfiniBand connector with speeds of 2.5 Gbs to 25 Gbs per differential pair.

Ultra-low insertion and return loss with near-perfect signal integrity assure that electrical results reflect the cabling, not the adapter.

Utilizing Efficere's advanced and patented signal integrity design and manufacturing techniques, the 4x-SMA Test Adapter allows characterization of cabling and interconnects without inducing more noise into the system. Proprietary electrically Invisible Via™ structures eliminate the signal disruptions common on most other test adapters.

Efficere Technologies specializes in the design of high-speed products with superior signal integrity that enable our customers to design and build their next generation products.

Test Fixture



This board has SMA connectors on both sides.

4x-SMA-25R

Specifications

| | Condition | Test Fixture |
|-------------------------------|-----------|--------------|
| Insertion Loss ⁽¹⁾ | -3 dB | 15 GHz |
| Return Loss ⁽¹⁾ | -20 dB | 10 GHz |
| VSWR ⁽¹⁾ | 10 GHz | 1:1.22 |
| Rise Time ⁽²⁾ | 10/90 | 25 ps |
| DC Current ⁽³⁾ | | 0.5 Amp |

Test Methodology:

- (1)
 - VNA is Agilent E8364B 50 GHz 4-port with PLTS software
 - Specifications met by each of the two THRU calibration traces
- (2) Calculated
- (3) By design, on all traces

4X Receptacle Connector:

- 4x receptacle connector is FCI part number 58368-111120 EyeMax™

Note: The 4x receptacle is not rated for repetitive make/break connections. Use of this adapter for volume manufacturing should utilize an appropriately rated intermediate contact fixture.

Connector Assignments

| Pair Number | 4x Receptacle | SMA | Note |
|-------------|---------------|--------|--------|
| 1 | S1 | J1 | |
| | S2 | J2 | |
| 2 | S3 | J3 | |
| | S4 | J4 | |
| 3 | S5 | J5 | |
| | S6 | J6 | |
| 4 | S7 | J7 | |
| | S8 | J8 | |
| 5 | S9 | J9 | |
| | S10 | J10 | |
| 6 | S11 | J11 | |
| | S12 | J12 | |
| 7 | S13 | J13 | |
| | S14 | J14 | |
| 8 | S15 | J15 | |
| | S16 | J16 | |
| - | G1-G9 | Ground | Common |

Resources and References

Small Form Factor Committee (4x connector standard)
<http://www.SFFcommittee.com/ns/>

FCI (supplier of 4x EyeMax™ receptacle connector)
<http://www.fciconnect.com>

Calibration Traces

| Name | SMA | Note |
|-------|-----|-----------------|
| LOAD | J17 | |
| OPEN | J18 | |
| SHORT | J19 | Common (Ground) |
| SHORT | J20 | Common (Ground) |
| OPEN | J21 | |
| LOAD | J22 | |
| THRU | J23 | |
| | J24 | |
| THRU | J25 | |
| | J26 | |

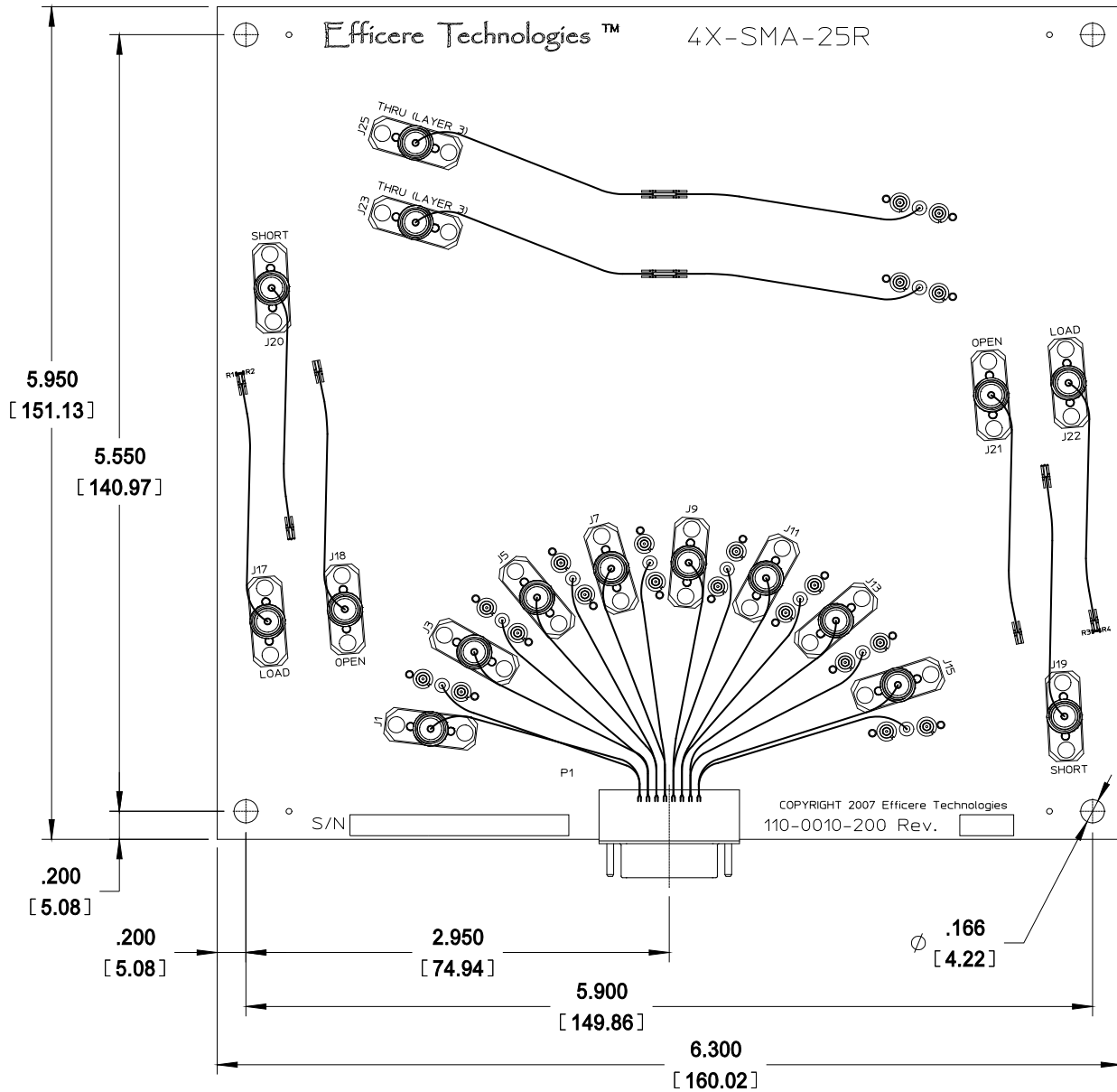
Other Efficere Interconnect Test Products

| | |
|---------------|--|
| ET-4X-SMA-12R | 12 Gbs/ch Test Adapter for 4x InfiniBand |
| ET-HDMI-TPA | HDMI v1.3 Test Adapter (1080p) |
| ET-DP-TPA | DisplayPort v1.1 Test Adapter |
| ET-MSAS-12R | 12 Gbs/ch Mini-SAS 26/36 pos. Adapter |
| ET-SAS-SMA-5R | 5 Gbs/ch SAS Drive/Backplane Adapter |
| ET-SFP-5R | 12 Gbs/ch Dual SFP Adapter |

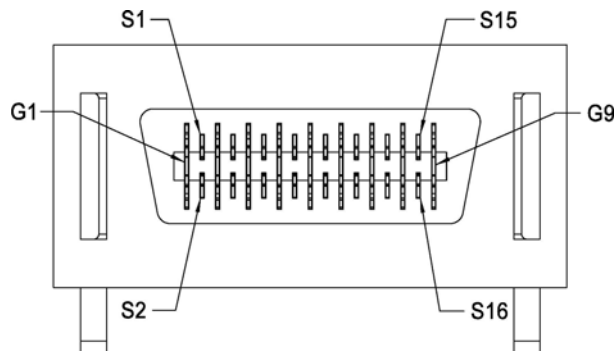
Visit the Efficere web site for information on other interconnect test products

Physical Dimensions

4x-SMA-25R

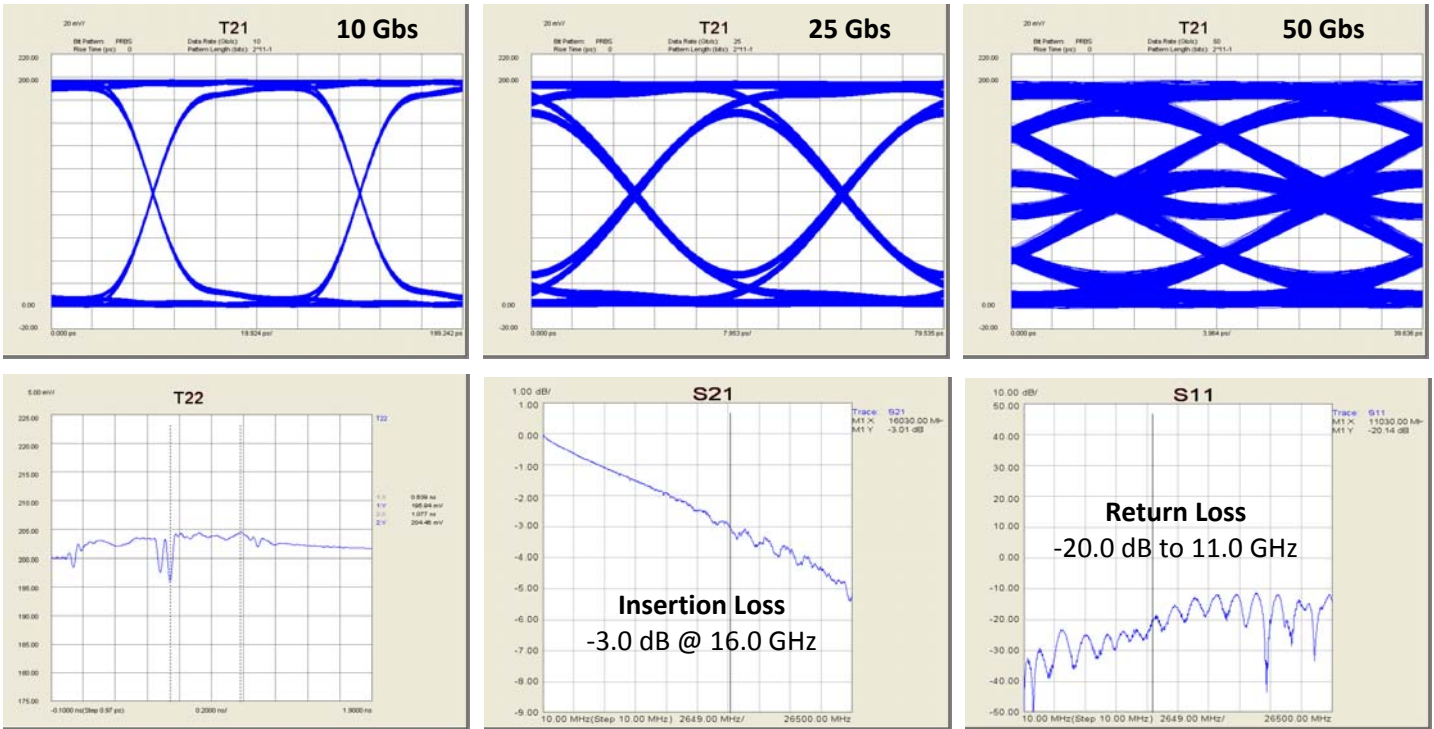


4x Connector Pin Assignments



2x Through Paths* - Typical Characteristics

4x-SMA-25R



* Each THRU is a 2x through path that includes two SMA connectors, four electrically Invisible Via™ structures, a pad representing two InfiniBand connector pad structures, and the equivalent of two 4x-SMA circuit board traces. It does not include the InfiniBand connectors and there is no compensation.