

Features

- NIST traceable S-parameter measurements provided for every structure
- Allegro layout provided for easy 3D EM import
- Crosstalk analysis for jitter and channel tolerance analysis
- Full 3-LINE TRL Calibration Standards — Microstrip and Stripline
- TRL calibration: $S_{21} \pm .03\text{dB}$ typical to 20GHz
- 43 Structures
 - VIA fields
 - Family of differential channels
 - Crosstalk couplers
 - Resonators
 - Pathological Coupler
 - Broad-Side Channel Coupler

Read the DesignCon 2009 award winning paper for improving correspondence: **“Measurement-**



Assisted Electromagnetic Extraction of Interconnect Parameters on Low-Cost FR-4 boards for 6–20 Gbps “ on our web site —

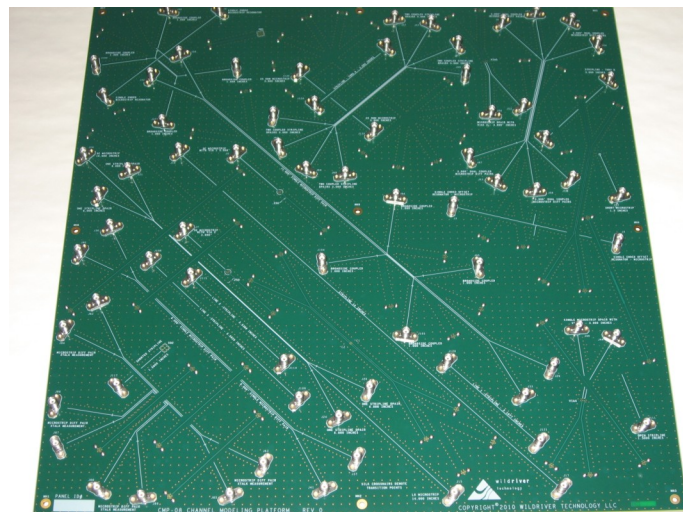
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CMP-08

Channel Modeling Platform

The CMP-08 Channel Modeling Platform represents a technology leap for addressing 3D Electromagnetic simulation and measurements correspondence to 20GHz. Applications of the CMP-08 provides dramatic improvements of high-speed design flows incorporating pre and post layout 3D EM analysis, and subsequent measurements in either time or frequency domain. Combining 38 single-ended and differential structures and carefully designed TRL/LRM calibration methods, the CMP-08 provides:

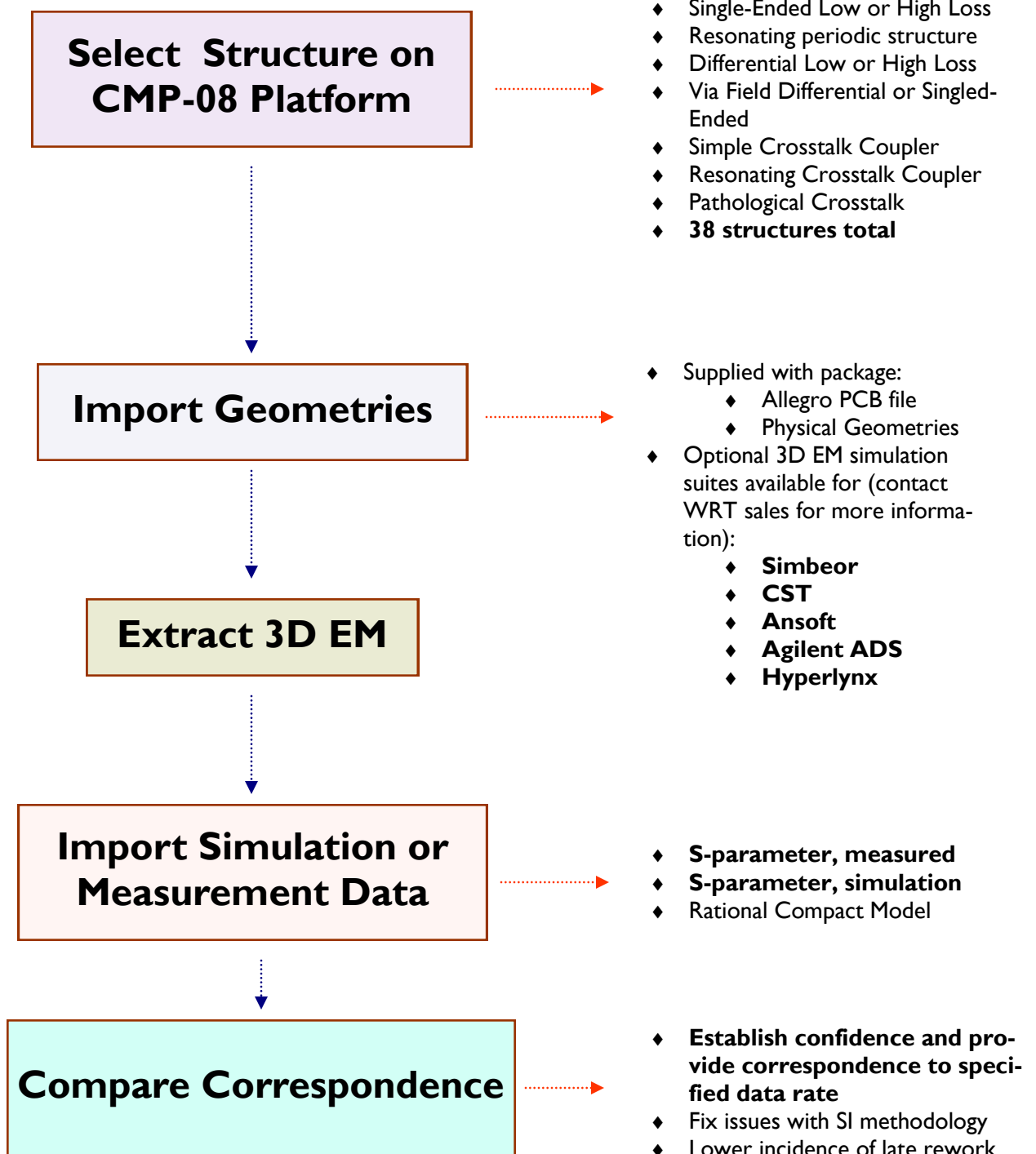
- **3D EM simulation to Measurement Correspondence**
- **Benchmark and Calibration Channels and Jitter De-Embedding**
- **Interoperability test vehicle for SERDES, Capitol Equipment, Jitter Algorithmic analysis and Benchmarking**
- **Explore TRL/LRM, Unknown THRU Calibration, T-matrix de-embedding**



All calibrations and measurements are verified up to 20 GHz for the CMP-08 Channel Modeling Platform, which makes this product suited for applications past 8 Gbps such as PCI Express GEN III, and practical analysis to 10 Gbps.

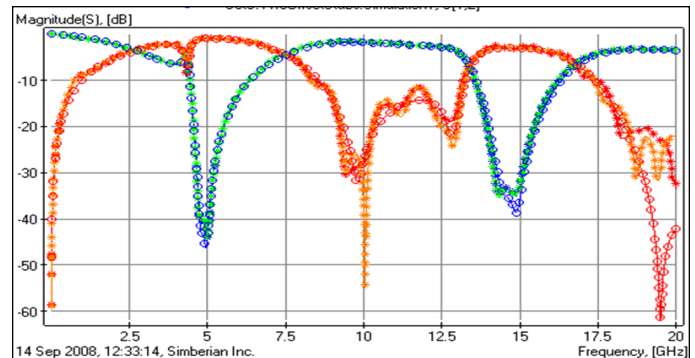
The **CMP-08** Channel Modeling Platform has 40 structures consisting of single-ended, differential structures, including multi-part Crosstalk couplers that can be used to benchmark correspondence from 3D EM simulations to measurements, jitter analysis,

Quick and Meaningful Pre or Post Layout SI Correspondence

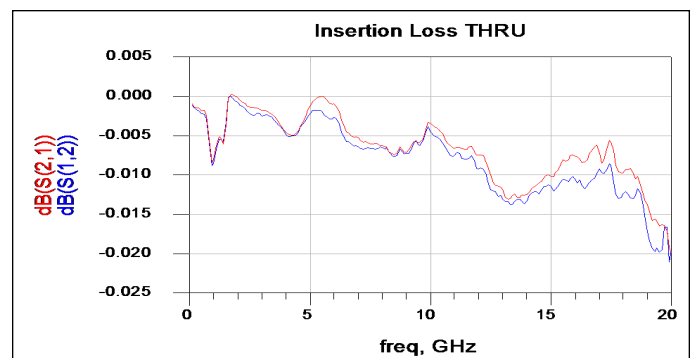


Typical Applications

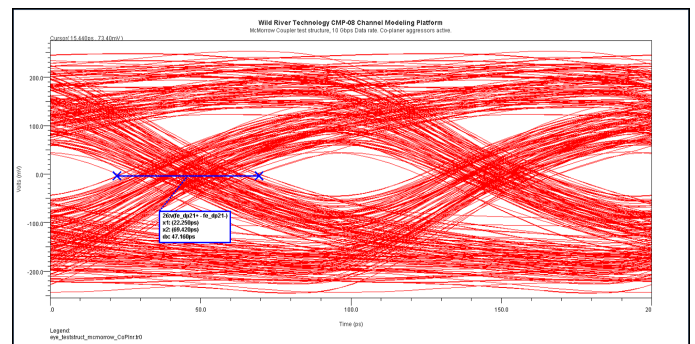
- ◆ **3D-EM Simulation Correspondence to Measurement.** Product is packaged with DVD that includes Allegro file, geometries, and NIST traceable S-parameters. **Correspond in minutes without fabricating expensive hardware!**



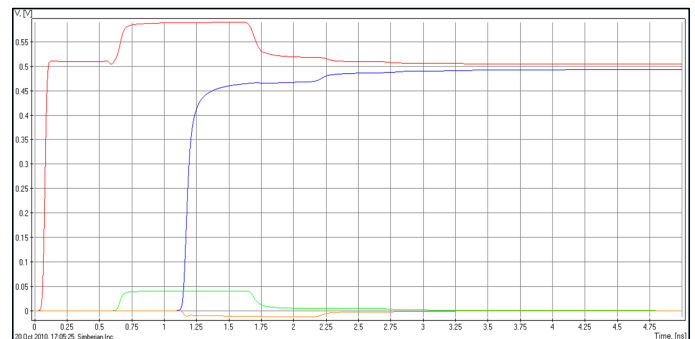
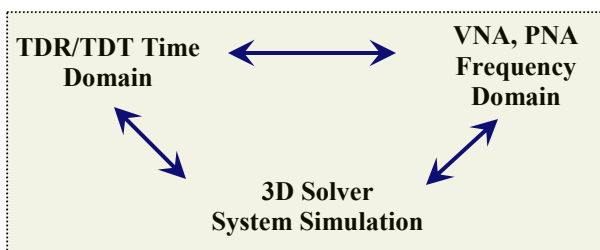
- ◆ **Calibration Verification.** With 20GHZ - SOLT,TRL in both Stripline or Microstrip, superb TRL calibration results can be achieved.



- ◆ **Crosstalk Jitter Analysis and Channel Optimization.** Ability to benchmark 3D EM (Ansoft HFSS, Simbeor2010, CST Microwave) and system level simulation tools like Agilent ADS, HSPICE, and Hyperlynx.

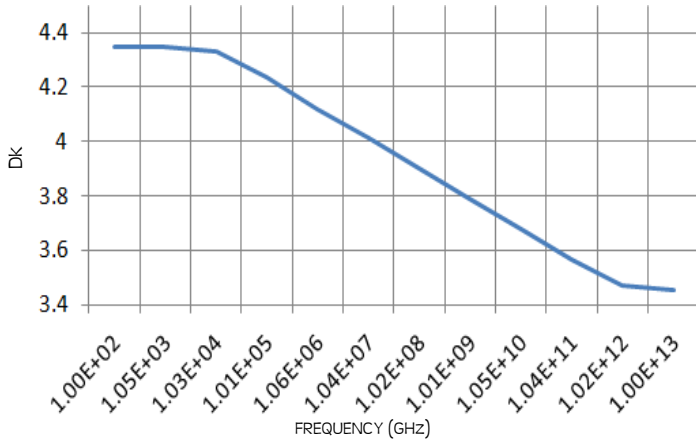


- ◆ **Correspondence**

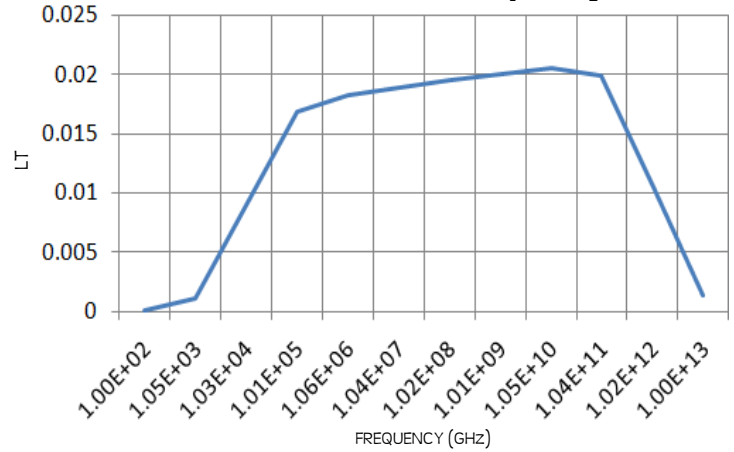


Product Typical Characteristics*

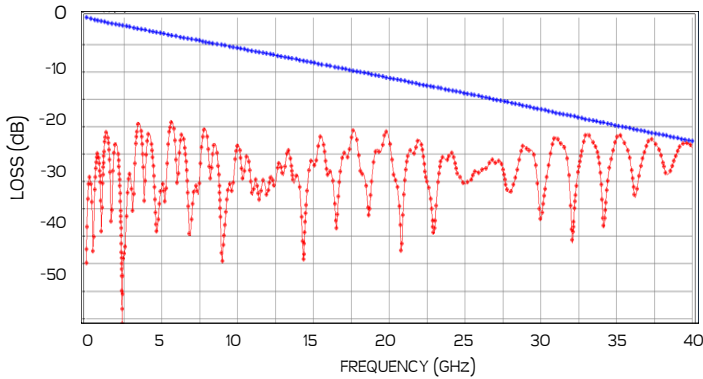
Effective Dk vs. Frequency



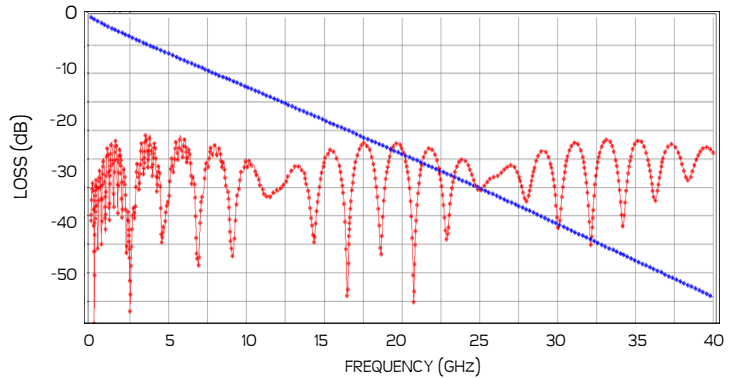
Effective LT vs. Frequency



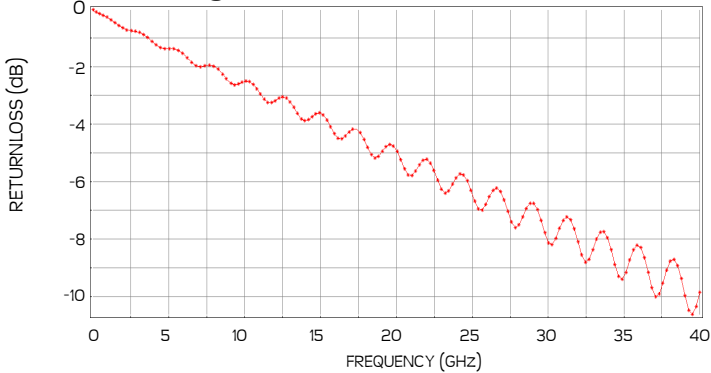
Short THRU Return and Insertion loss



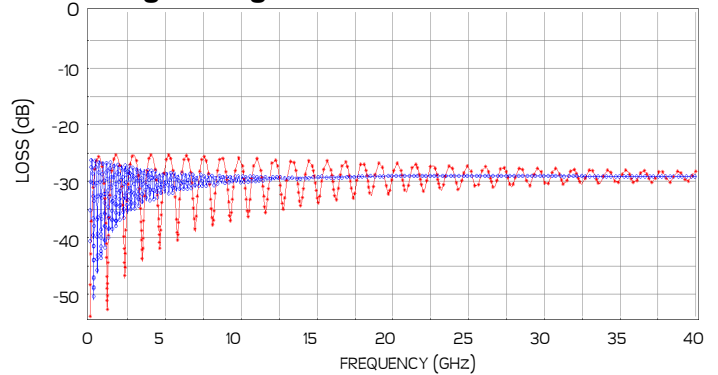
Long THRU Return and Insertion Loss



Single Ground Via Return Loss



Single Long and Short Trace Return Loss†

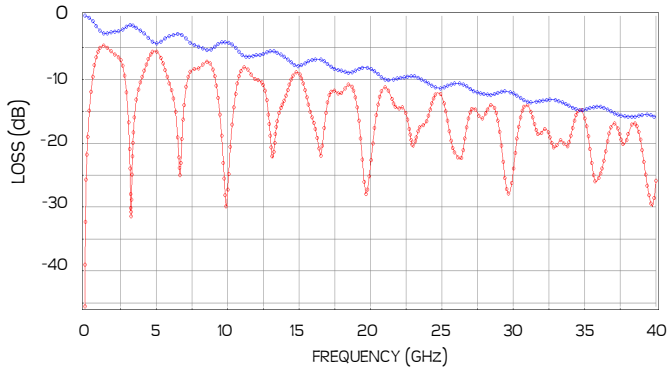


* Data is preliminary, but representative of final production CMP-08.

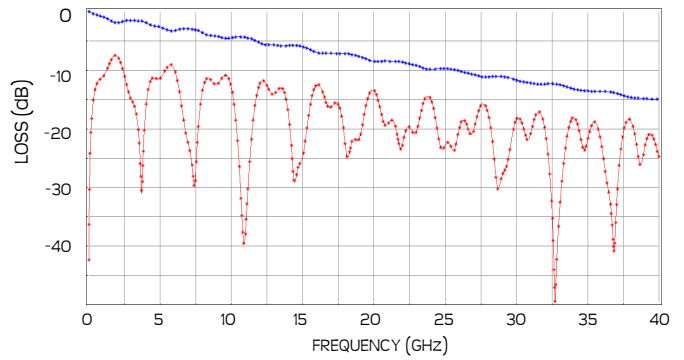
† Used for material extraction.

Product Typical Characteristics*

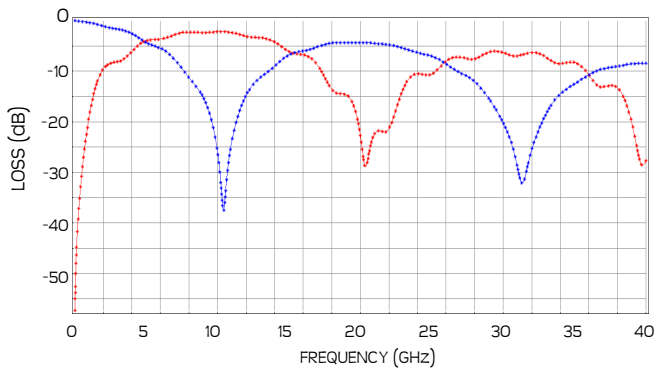
25Ω Beatty Standard Insertion & Return Loss



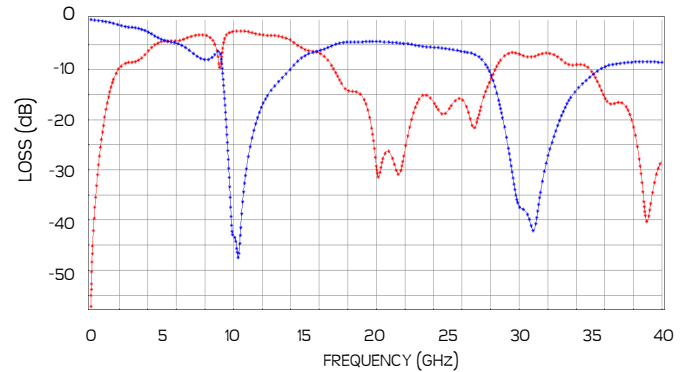
80Ω Beatty Standard Insertion & Return Loss



Balanced Resonator Insertion & Return Loss



Unbalanced Resonator Insertion & Return Loss



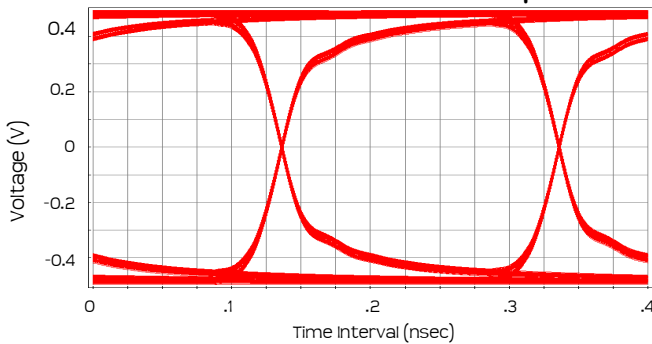
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*†Used for material extraction.

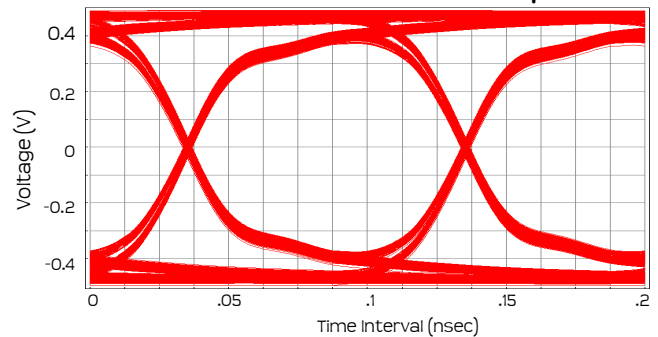
Product Typical Characteristics*

Eye Diagrams

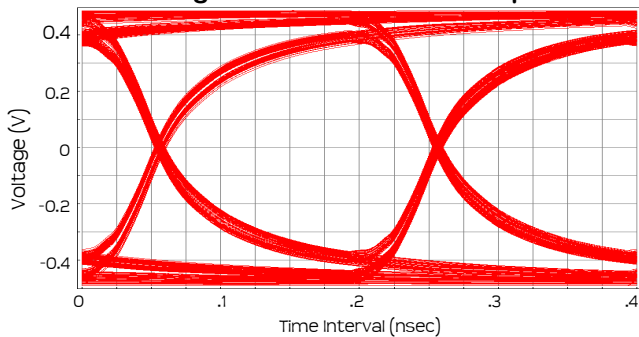
Short Differential Pair at 5Gbps



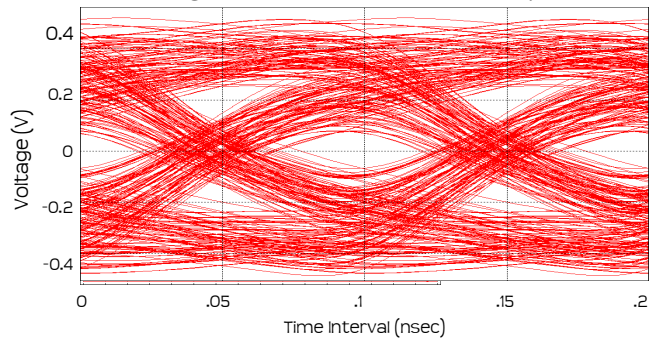
Short Differential Pair at 10Gbps



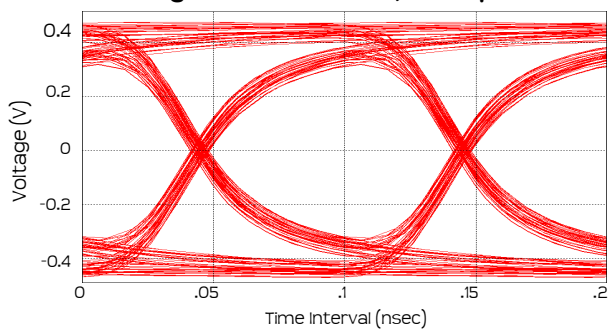
Long Differential Pair at 5Gbps



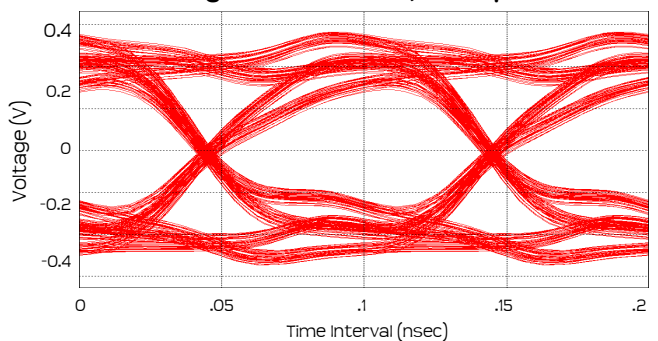
Long Differential Pair at 10 Gbps



3 Diff Pairs, Middle Pair Shown with Agressors Inactive, 10Gbps



3 Diff Pairs, Middle Pair Shown with Agressors Active, 10Gbps



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Wild River Technology LLC, 735 SE 16th Avenue, Hillsboro, OR, USA,

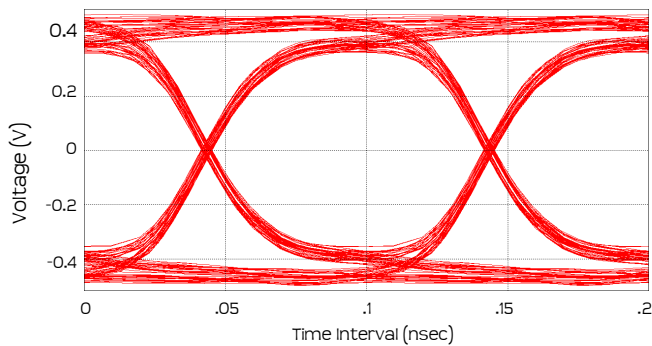
TEL: 1.503-718-7172

www.wildrivertech.com

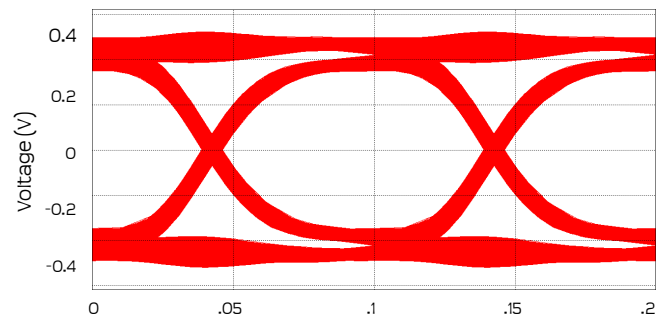
Product Typical Characteristics*

Eye Diagrams (Continued)

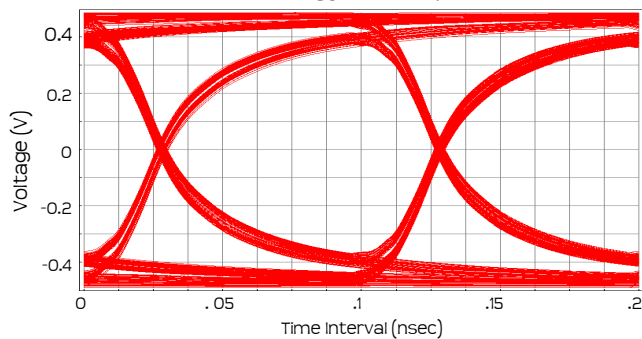
Neves Pathological With No Aggressor Energy, 10



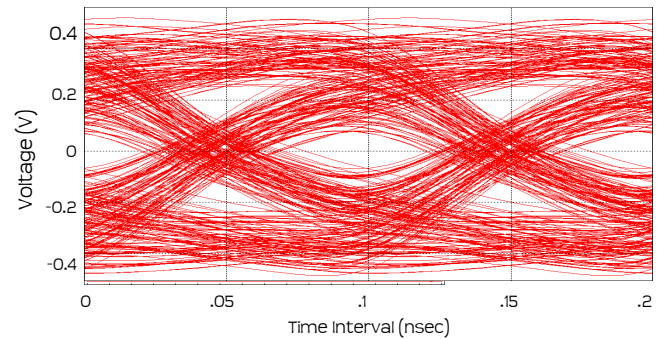
Neves Pathological With Aggressor Energy, 10



McMorrow Coupler With No Aggressor Energy, 10 Gbps



Broadside Coupler With Aggressor Energy, 10 Gbps



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More Information

Calibration Capability:

- On board TRL Calibration THRU, LINE1, 2, 3 and SHORT, OPEN, LOAD
- SOLT calibration verification using external kit or Agilent Corp ECAL(N4433A) — Resonator, offset Resonator, THRU, differential THRU
- Both Single-Ended and Differential THRU for ABCD de-embedding, or T-matrix approach
- Differential and single-ended THRU structures for UNKNOWN THRU methods

On Board Structures:

- Single-Ended Microstrip, Stripline
- Single-Ended VIA, non-tuned
- Single-Ended VIA, tuned
- Resonator
- Offset Resonator
- 2 Beatty Standard's (25 and 85ohms)
- Differential line and Coupled VIA transition
- Tuned Coupled VIA transition
- Differential Microstrip and Stripline, 3, 6, and 11 inches
- Stripline 3 and 14 inch single-ended lines for material extraction
- 6 Differential Pair coupled Stripline, 3 and 6 inches, inner Victim 100ohms
- Pathological crosstalk microstrip aggressor– victim differential
- Broadside Stripline Coupler with Multiple Aggressors

Options:

- NIST-Traceable, Multiport S-Parameter Characterization of CMP-08 structures
- Material Extraction (D_k , D_f , W-element, RLCG) of transmission structures
- 3D EM extraction for use in CST, Simbeor, or Ansoft tools
- TRL, LRM calibration license and instruction in methods employed to achieve stellar TRL performance
- Matched and tested cable pairs for adding transmission paths to CMP-08 test structures. Good for SERDES testing, combining structures, and de-embedding jitter studies

Contact Information:

Wild River Technology LLC
Phone: (503) 718-7172
E-mail: inquiry@wildrivertech.com

Ordering Information

Test Board

Item #	Description	Price
CMP-08-000	CMP-08 Platform includes complete and fully tested assembly (each SMA launch is TDR tested for consistency) DVD of geometries, Allegro design files, physical geometries, CMP-08 Users Manual (For non-SMA mounted version see Note 1)	\$8395
CMP-08-SPM	Same as CMP-08-000 with NIST-Traceable, Multiport S-Parameter Characterization of CMP-08 structures	\$1,485
CMP-08-SMB	Same as CMP-08-000 with Simbeor 3D EM extraction files included	Note 2
CMP-08-CST	Same as CMP-08-000 with CST 3D EM extraction files included	Note 2
CMP-08-ANS	Same as CMP-08-000 with Ansoft 3D EM extraction files included	Note 2

Optional Services

Item #	Description	Price
CMP-08-EXT	Material Extraction Training (D_k , D_f , W-element, RLCG)	Note 2
CMP-08-CAL	TRL, LRM calibration license and instruction	Note 2

Accessories

Item #	Description	Price
CMP-08-CBL	Phase and skew matched and tested cable pairs from Rosenberger. Used for combining structures for channel modeling and optimization. Cable ends are SMA male. Set includes four 6 inch pairs, four 12 inch pairs, two 20 inch pairs, and two 36 inch pairs. Contact factory for other configurations.	\$398

Notes:

1. Contact WRT sales for more information regarding a probing version of the CMP-08. The probe version accommodates 1mm GSG probe tips (call or email us for more information).
2. Contact WRT sales for more information.