

CMP-70 ADVANCED CHANNEL MODELING PROGRAM

EXTREME SIGNAL INTEGRITY TO 70GHz – New for Q1 2024

See CMP-70X for
custom solution!

KEY HIGH-LEVEL DELIVERABLES

- This product is a comprehensive program, not just a hardware test vehicle
- Achieve Extreme Signal Integrity
- Designed for customers dealing with 400, 800G Ethernet
- Dramatic simulation set-up, material models and correspondence to measurement is achieved

FEATURES

- Helps our customers achieve 70GHz breakthrough signal integrity metrics
- Allegro layout (.brd or OBD++) available for easy 3D EM import (NDA required)
- Measured S-parameters included
- HFSS Model libraries of starter kit included
- HFSS set-up, and material ID (X-Y and Z-axis, Tensor-based) web-based training

APPLICATIONS

- Establish 70 GHz High-Confidence Design
- Learn how to design 1st spin designs to 70 GHz and achieve IEEE P370 TG1 signal integrity rated quality
- Benchmark simulations, test meshing, port boundaries, solver approach
- Improve signal integrity methodology of common structures (voids, vias, breakouts, cavities, etc.)
- De-embedding validation and measurement validation
- VNA, TDNA measurement validation to 70 GHz, 8 psec. resolution



CMP-70 Standard Product. For custom solutions based on customer stack-up refer to CMP-70X

Program Contents:

- **CMP-70 Platform, assembled and 100% TDR QA tested, with custom stands**
- **Cross-section PCB strip for your platform, containing as-fabricated geometries**
- **Measured S-parameters, pre-tested for quality (passivity/causality and resampled for time domain simulations)**
- **PCB layout design files (NDA required)**
- **EDA Library including Loss Models, including Industry First accurate surface roughness models**
- **Comprehensive training for 3D EM analysis – correspondence, material ID in X-Y and Z axis in HFSS**

The CMP-70 Channel Modeling Platform represents a powerful next generation tool for development of high-speed 70 GHz systems. The standard product is also used as a template for a custom modeling solution which utilizes a customer specific stack-up and fabricator. The primary target application for this product is 3D-EM solver analysis modeling versus time and frequency domain measurement methodology. All structures include de-embedding to isolate the device-under-test (DUT) using Symmetrical De-embedding such as Automatic Fixture Removal (AFR, both 1X and 2X) and GMS approaches used in Simbeor.



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SPECIFICATIONS

Table 1 – CMP-70 platform specifications

PC board material	Isola Tachyon® 100G
Connectors	1.85mm vertical launch female (VLF), compression mount, replaceable. All connector launches are NIST traceable tested.
Dimensions	16" x 16" without stands

Table 2 – CMP-70 Test Structures Included by category

Simple transmission structures for material Identification and simple transmission modeling	Single-ended and differential traces of different lengths for General Modal material ID determination
Pathological	Untuned connector launch vias and test vias, crosstalk generators, diff pair with adjacent plane cutout
Meshing Challenges	Graduated Co-planar - Challenges 3D EM mesh approach
Time Domain Challenges	Untuned vias, Beatty standards, Thru with whiskers (TDR resolvers for ultra-fast TDR, 10 psec. and 28 psec. rise times)
Z Axis Challenges	Untuned vias
VNA Calibration	Stripline Short, Open, Load, Thru, 1X THRU, 2X THRU
Generating circuit resonance	Balanced resonator, ring resonators, stub resonators,
Proprietary Structures	Released under NDA, used for Material ID and modeling X-Y and Z axis in HFSS

For details and to request a quote contact us at sales@wildrivertech.com.

Contact Al Neves at al@wildrivertech.com for a free 45-minute technical presentation called “Extreme Signal Integrity to 50GHz” that outlines the WRT signal integrity program for:

- What is IEEE P370 TG1, how to achieve good SI in one spin
- Material ID methods in all X-Y and Z direction in HFSS
- Setting up your EDA tool for stellar simulation to measurement
- Making good measurements, S-parameter quality work flows

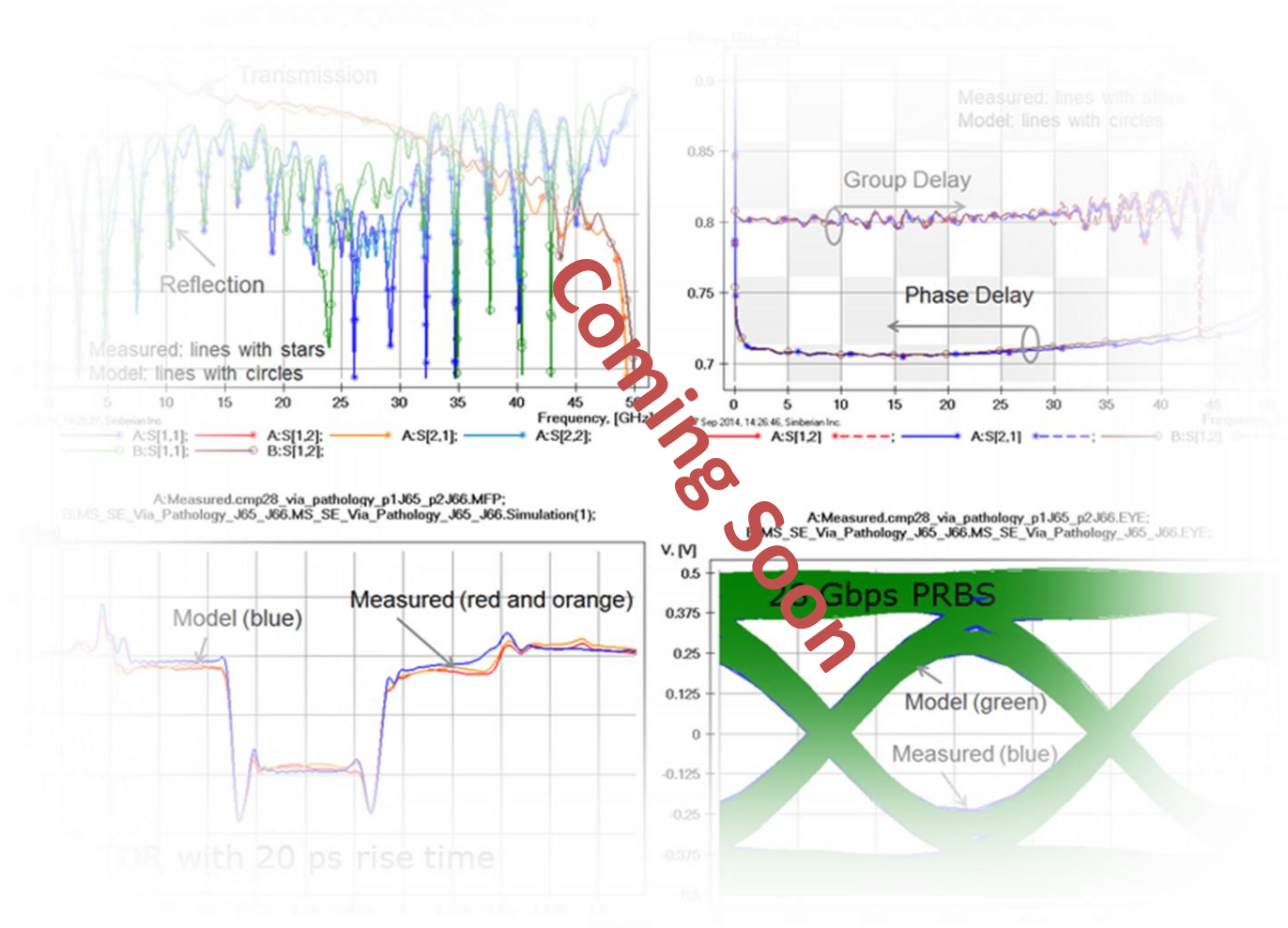


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EDA KIT AVAILABLE

An EDA is a zipped simulation environment, which includes the board layout, simulation set up and results, and correspondence to measurements for structures on the CMP-70 platform. An example is shown below of simulation to measurement of a pathological structure on the CMP-70. Several EDA kits use a full path approach and others use both de-embedded and full path. Full path includes models of the connector launches. Contact WRT for more information on EDA kits for CMP-70.



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What's Included

The price for the CMP-70 is expected to be around \$20K with 1.85mm connectors installed. For this price you get:

- Fully assembled system, 100% NIST traceable TDR tested, report included
- S-parameter library, measured, tested for quality, includes DC point
- Web-based product training with WRT Applications Engineer, scheduled at customers convenience

Ordering Instructions

Part Number	Model	Description
920-0001-00	CMP-70-1.85mm	Advanced Channel Modeling Platform assembled with 1.85mm VLF connectors
920-0002-00	CMP-70-1.35mm	Advanced Channel Modeling Platform assembled with 1.35mm VLF connectors

Accessories

Part Number	Model	Description
906-0003-00	Cable Bundle	Four cable pair bundle, black 1206 flexible coaxial cable assemblies with 1.85mm compatible male connectors on both ends. Specification: 16dB return loss or better through 65GHz, 1ps or less skew matched cable pairs. Lengths: 2 x 42", 1 x 36", 1 x 24"
907-0016-00	Case	Pelican case with custom cut foam for 16 sq in WRT platforms

