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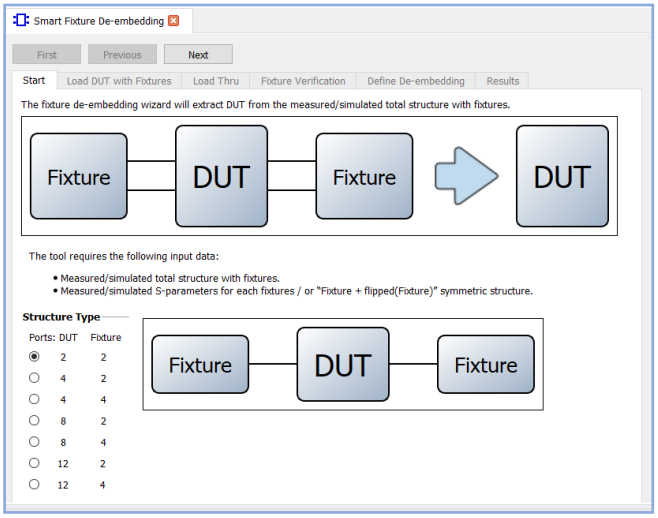
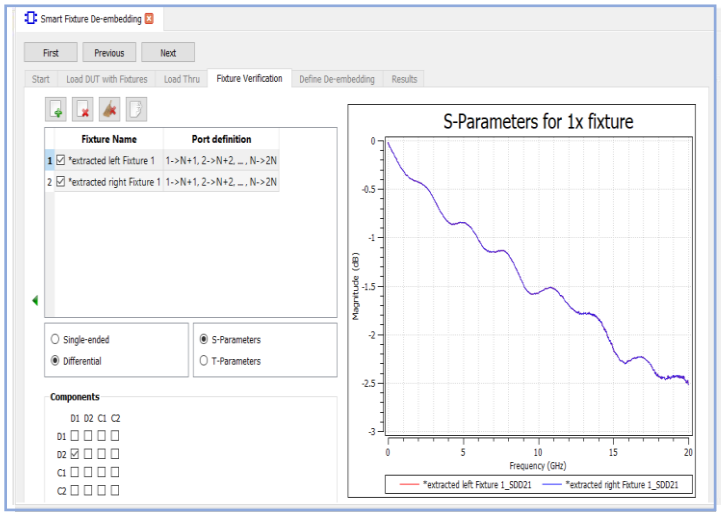
Advanced Interconnect Test Tool (AITT)

Versatile Tool for Interconnect Analysis and PCB Characterization

Smart Fixture De-embedding (SFD) Tool





Overview

The Advanced Interconnect Test Tool (AITT) is ideal for signal-integrity and power-integrity applications. The AITT software includes four key functions: VNA control, analysis, de-embedding, and applications. It can be installed on a VNA directly or a PC that controls the VNA remotely.

The AITT-AR analysis tool offers an easy user interface for performing frequency-domain, time-domain, or eye-diagram analysis. Its powerful plot tools allow a user to examine and compare data.

For fixture removal applications, the AITT-SFD tool supports the 2X thru, 1X-reflect, and other traditional techniques for extracting network parameters required in modeling of high-speed interconnects, such as circuit board traces and vias, connectors, IC packages, and cables. It can automatically correct the impedance difference between the test fixture and DUT.

The AITT-ME material extraction tool extracts DK, DF, and surface roughness of a printed-circuit board from S-Parameter measurements of traces on the PCB. Compared to conventional techniques, this approach is simpler and more accurate.

For PCB manufacturing testing, the AITT-DLP tool guides you to perform tests and analysis based on Intel Delta-L+ methodology, including 1L, 2L, and 3L analysis.

Features:

- **Versatile:**
  - **VNA Control**: control of a VNA locally or remotely by a separate computer.
  - **Analysis**: powerful tool for frequency-domain, time- domain, and eye-diagram analysis.
  - **De-embedding**: multiport fixture de-embedding tool supports 2X thru and 1X reflect techniques, which is comparable to Keysight AFR, with superior accuracy. The impedance mismatch between the fixtures and DUT is automatically corrected.
  - **Causality/Passivity:** tool assesses the causality and passivity of an S-parameter file and can enforce them for non-causal or non-passive cases.
  - **Applications**:
    - PCB Material Extraction tool extracts DK, DF, and surface roughness of PCBs. This tool supports extraction with differential data (single-mode) only.
    - Delta-L+ PCB test tool is based on Intel Delta-L+ methodology
- **Easy-to-Use:** User-friendly interface
- **Fast:** fast C++ runtime with simple installation and script-mode support.

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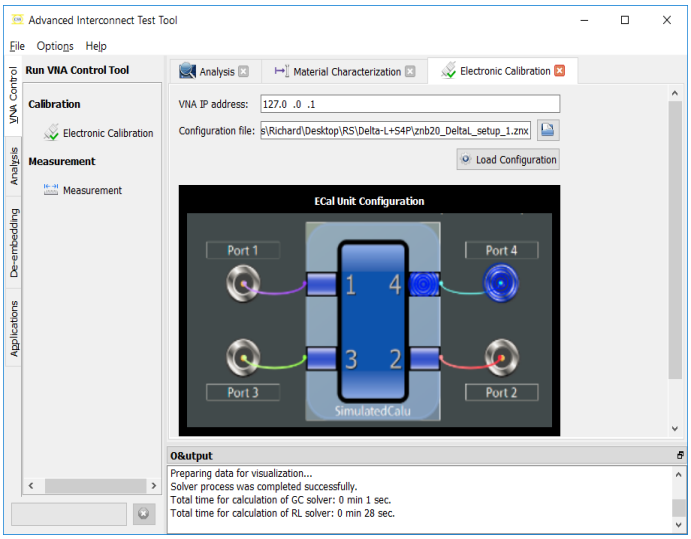
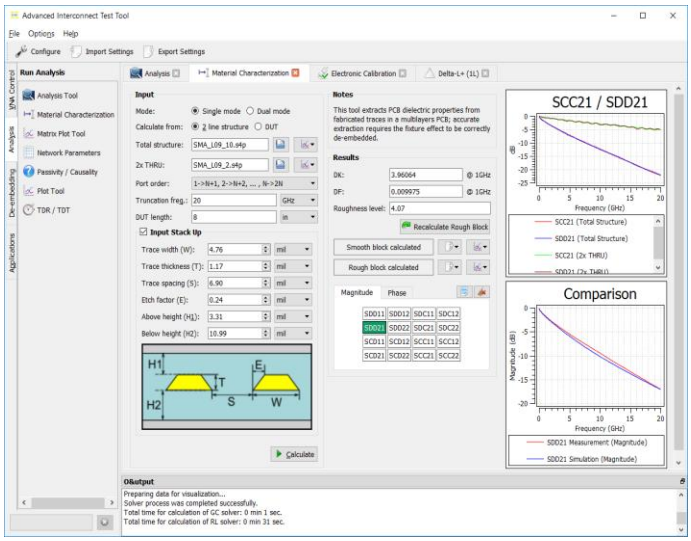
VNA Control



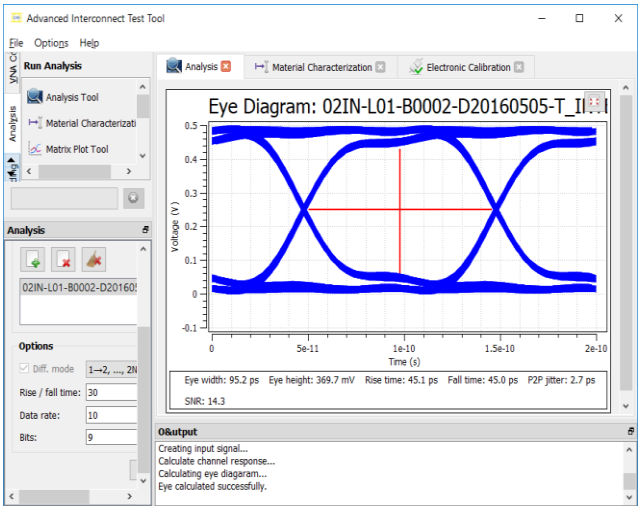
The AITT VNA Control allows a user to control a VNA to perform calibration and measurements locally or remotely from a separate PC by simply entering a 127.0.0.1 or the VNA IP address, respectively.

PCB Material Extraction



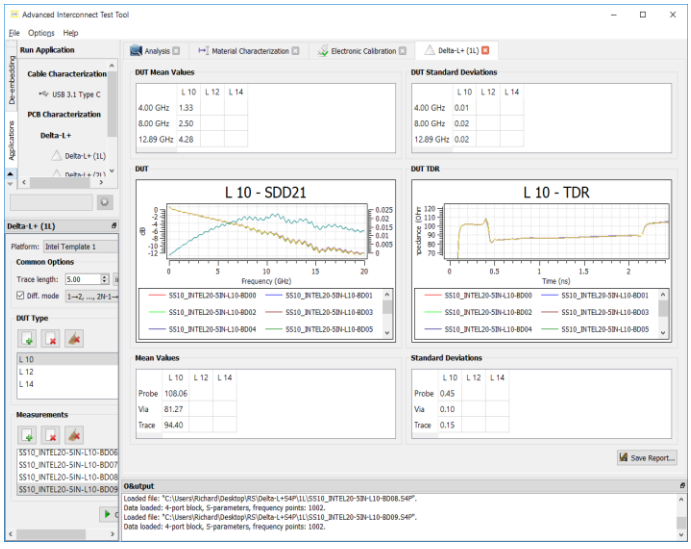
The AITT-ME material extraction tool extracts DK, DF, and surface roughness of a PCB from trace measurements based on the Huray roughness model. It supports single-mode and dual-mode data.

Analysis



The AITT Analysis tool enables an engineer to perform frequency-domain, time-domain, and eye-diagram analysis. Its powerful plot tools make comparing data of different measurements easy.

Delta-L + PCB Characterization



The Delta-L+ PCB characterization application offers the complete 1L, 2L, and 3L analysis based on Intel's Delta-L+ methodology. It guides the user to take measurements and perform analysis.

Part Numbers:

AITT-AR: Analysis Tool for Rohde & Schwarz VNAs
AITT-SFD: Analysis Tool and De-embedding Tool
AITT-DLP: Analysis Tool and Delta-L+ Tool
AITT-ME: Analysis Tool and Material Extraction Tool (DK, DF, and surface roughness)
AITT-USBC[1]: Analysis Tool and USB3.1 Cable Tool

Notes:

1. AITT-USBC tool is comparable to Intel Intepar and will be available in March, 2019.

About AITT Software

The Advanced Interconnect Test Tool (AITT) is developed by an experienced research team led by two IEEE Fellows, Professors J. Drewniak and J. Fan at the Missouri S&T EMC Laboratory. This versatile, easy-to-use AITT software has been used by many Fortune 100 companies.