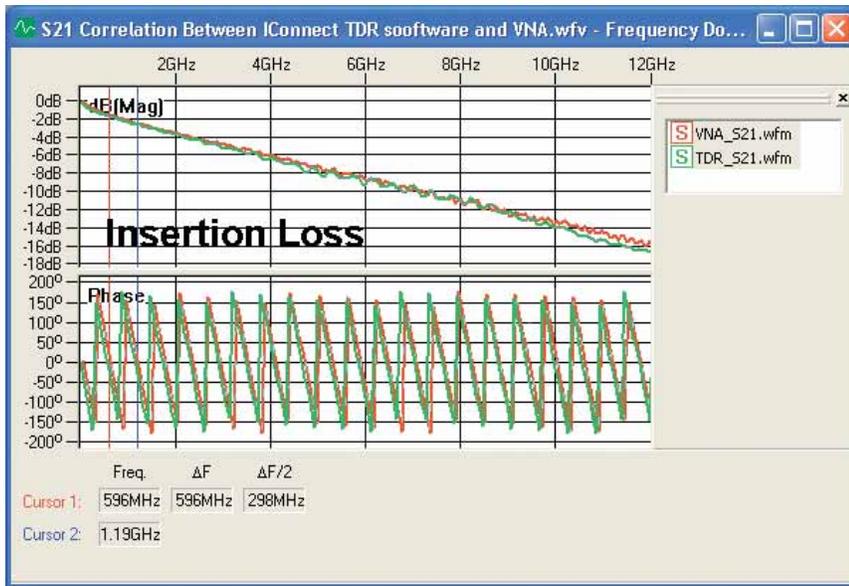


# IConnect S-parameters and Z-line

## ► 80SSPAR



## The Easiest Way to Perform Interconnect S-parameter Measurements

IConnect S-parameters is the efficient and easy-to-use tool for digital designers, operating at gigabit speeds, to perform single-ended, differential, and mixed mode S-parameter measurements of their interconnects, measure insertion loss, return loss and frequency domain crosstalk, and conduct interconnect electrical standard compliance testing.

### Efficiency

Operating on CSA/TDS8200 TDR platform, IConnect S-parameters is the most cost-effective and highest throughput approach for S-parameter measurements in digital design, signal integrity analysis and interconnect compliance testing, providing as much as 50% cost savings compared to similar bandwidth VNAs, and dramatically speeding up measurements.

### Calibration and Measurement Simplicity

The simplicity of S-parameter calibration using a reference (open, short, or through), and an optional 50  $\Omega$  load make the measurement itself, fixture de-embedding, and moving the reference plane a snap. Touchstone file format output enables easy S-parameter file sharing for further data analysis and simulations.

### Performance

A basic CSA/TDS8200 TDR system with typical 17 ps incident and 28 ps reflected rise time will allow you to measure up to 12 GHz of S-parameters with up to -60 dB of dynamic range. By adding Picosecond, Pulse Labs' fast rise time TDR module, you can perform S-parameter measurements up to 65 GHz with up to -70 dB of dynamic range. This performance is more than sufficient for digital design applications, where 1% (-40 dB) of crosstalk is typically ignored, and electrical compliance testing masks typically call for the measurements in the -10 to -30 dB range.

### The Accurate Way to Measure Impedance

IConnect software uses an impedance deconvolution (Z-line) algorithm, which further enhances the impedance computation feature in CSA/TDS8200. Z-line efficiently takes care of multiple reflections in the TDR impedance measurement and produces the True Impedance Profile. As a result, you can measure PCB trace impedance more accurately and improve correlation of your data between measurements, including the correlation between such measurements performed

## ► Features & Benefits

S-parameter Measurements on CSA/TDS8200 TDR Oscilloscope

- Differential, Single-Ended, Mixed Mode
- Insertion, Return Loss, Frequency Domain Crosstalk
- PCI Express, Serial ATA, Infiniband, Gigabit Ethernet Standard Compliance Testing
- Intuitive, Easy and Accurate for Gigabit Digital Design and Signal Integrity

True Impedance Profile (Z-line) Impedance Peeling Algorithm

- Enhanced Impedance Measurement Accuracy
- Enhanced TDR Resolution
- Fast and Easy Package and PCB Trace Failure Location

50  $\Omega$  Calibration Eliminates the Need for Time Consuming Normalization

## ► Applications

High-speed Component Testing

Serial Data Testing

Consumer Electronics Testing

Communications Testing

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### ► 8OSSPAR

by your co-workers or customers in another part of the world. The True Impedance Profile produced by IConnect Z-line allows you to improve not only the TDR oscilloscope impedance measurement accuracy, but also to increase the TDR oscilloscope resolution.

### Package and Board Failure Analysis Using TDR

TDR is a novel approach for locating the position of failures in BGA and similar packages and printed circuit boards. IConnect software Z-line algorithm improves the resolution of TDR, facilitating easier location of open and short faults. Easy waveform manipulation and analysis makes the TDR data much easier to interpret. Finding the location of open faults and signal-to-ground shorts becomes a simple task, and finding location of plane-to-plane shorts, signal-to-signal shorts, resistive shorts and faults in fanouts become realistic tasks.

### ► Characteristics

#### Recommended Instrument Compatibility

Tektronix CSA/TDS8200 or CSA/TDS8000, with 80E04 TDR sampling module (local TekVISA™ interface is supported, install and run directly on the instrument)

Tektronix 11801 and CSA803 mainframes with SD24 TDR sampling module

#### Computer Requirements

**Processor** – 400 MHz Intel Pentium.

**RAM** – 256 MB.

**Hard Drive** – 40 MB free space.

#### Operating System –

Microsoft Windows 95/98/NT4.0/2000/XP.

#### Monitor –

Additional external monitor is recommended.

#### Others –

National Instruments GPIB board, version 2.1 (not required for Tektronix CSA/TDS8xxx local TekVISA interface).

### ► Ordering Information

#### 8OSSPAR

IConnect S-parameters and Z-line software.

**Includes:** First year of maintenance and support from date of purchase.

As an Option to the CSA8200 or TDS8200 Oscilloscopes

**Opt. SPAR** – Pre-install product on a new CSA/TDS8200 Series Oscilloscope.\*<sup>1</sup>

#### Options

Options to stand-alone product

**Opt. USB** – USB hardware key (dongle).

**Opt. PPD** – Parallel port hardware key (dongle).

**Opt. SWS2** – Extend maintenance agreement to two years from date of purchase.

**Opt. SWS3** – Extend maintenance agreement to three years from date of purchase.

#### 8OSSPARMNT

IConnect S-parameters and Z-line Extensions to Existing Maintenance Agreements

**Opt. SWS1** – Extend maintenance agreement by one year.

**Opt. SWS2** – Extend maintenance agreement by two years.

**Opt. SWS3** – Extend maintenance agreement by three years.

**Opt. CUR** – Renew a license that is out of support.

#### 8OSSPARUP

Upgrade from 8OSSPAR to 8OSICON or 8OSICMX

**Opt. ICMXUSB** – Upgrade to 8OSICMX with USB hardware key (dongle).

**Opt. ICMXPPD** – Upgrade to 8OSICMX with parallel port hardware key (dongle).

**Opt. ICONUSB** – Upgrade to 8OSICON with USB hardware key (dongle).

**Opt. ICONPPD** – Upgrade to 8OSICON with parallel port hardware key (dongle).

\*<sup>1</sup> Only parallel port hardware key is offered.

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Our most up-to-date product information is available at:  
[www.tektronix.com](http://www.tektronix.com)



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