Guzik Signal Analyzers

GUZIK
Technical Enterprises

For Tektronix TDS 7000 Series Oscilloscopes

Leading Features

- *Guzik Hardware Accelerator Card for real-time signal analysis and data processing*
- *Comprehensive Packages for Disk Drive Analysis, Jitter and Eye Diagram Analysis*
- *Convenient and intuitive Windows-based User Interface optimized for touch-screen applications*

Disk Drive Analysis Package

- *8Gbit/s PRML channel analysis with Tektronix TDS7404 oscilloscope*
- *Digital PRML with PR4, EPR4, E²PR4, and Variable Target modes with automatic target optimization*
- *Industry-standard Disk Drive measurements including Parametric (TAA, PW, Asymmetry), NLTS, SNR and Pulse Profile*
- *Wide range of programmable digital filters*
- *Disk drive specific triggers and gating*

Jitter and Eye Diagram Analysis Package

- *Comprehensive set of measurement including period, pulse width, rise/fall times, time interval error, skew/setup/hold times*
- *< 1 ps RMS measurement accuracy with Tektronix TDS7404 oscilloscope*
- *Eye diagram, histogram, track/trend, and spectrum representation of results*
- *Unique eye diagram hardware zoom capability for increasing resolution*
- *Digital Phased Lock Loop (PLL) with programmable bandwidth and digital clock recovery for precise time interval error measurements*

Maximum Performance

Guzik Signal Analyzer adds flexible real-time digital signal processing capabilities to Tektronix TDS 7000 series oscilloscopes thus further enhancing the oscilloscope functionality and increasing its value.

Guzik Signal Analyzer is implemented as an add-in card installed in the TDS7000 series oscilloscope. This card is connected to oscilloscope acquisition memory and has a high-speed access to acquisition data.

The card hosts powerful and reconfigurable digital signal processor based on programmable logic devices capable of processing the oscilloscope acquisition data in real time.

This unique design delivers unrivaled data processing power limited only by oscilloscope acquisition rates.

The 4 GHz analog bandwidth combined with 20 GS/s sampling rate of Tektronix TDS7404 oscilloscope opens new horizons for modern high-speed applications. It makes possible for example to perform PRML channel measurements up to 8Gbit/s and to do jitter analysis with 1ps accuracy.

Integrated Solution

Extensible software environment provides convenient control over Guzik Signal Analyzer capabilities and it is seamlessly integrated with the oscilloscope software. The software environment integrates measurement packages targeted to specific applications. The complete solutions for Disk Drive Analysis and for Jitter and Eye Diagram Analysis are available from Guzik Technical Enterprises now.

Easy to Use

Guzik software provides intuitive Windows-based GUI optimized for oscilloscope touch-screen. For added convenience it supports second external monitor and front-panel oscilloscope knobs (The flat screen LCD monitor is included).

Advanced application-dependent auto-set functions are implemented to further simplify the setup and configuration of the oscilloscope. Guzik Signal Analyzer hardware and software are pre-installed and pre-configured into Tektronix TDS7000 series oscilloscope and do not require any external connections.

Disk Drive Analysis Package

The industry leader in disk drive and magnetic head testing equipment, Guzik Technical Enterprises applied its extensive expertise to develop the comprehensive oscilloscope-based disk drive testing solution.

The Disk Drive Analysis package delivers wide range of industry standard measurements including Parametric, NLTS, SNR and Pulse Profile. It integrates a Digital PRML Channel with PR4, EPR4, E^{2}PR4, and variable target PRML modes. It includes the extensive array of fully programmable digital filters/equalizers, digital clock and gain recovery with programmable bandwidth and customizable Viterbi decoder.

Disk Drive Analysis application provides automatic optimization of Digital PRML Channel, auto-setup of many software parameters, disk drive and oscilloscope triggers, measurement gating and much more.

Jitter and Eye Diagram Analysis Package

The Jitter and Eye Diagram Analysis package delivers wide set of timing measurements, including measurements of signal period jitter, pulse width jitter, rise/fall times, time interval errors and skew/setup/hold times.

It supports different measurement result representations like eye diagram, histogram, jitter track/trend, jitter spectrum, and unique eye diagram slicing mode with the ability to select the signal area of interest directly on the eye diagram for further measurements (see Fig. 1).

The jitter measurement solution from Guzik Technical provides outstanding measurement accuracy of < 1ps RMS on TDS7404 oscilloscope.

Integration with Guzik Testers

The Disk Drive Analysis package provides integration with Guzik WITE32 software and can be used with Guzik RWA-2585 and RWA-2000 series. For example the track profile measurement with error rate curve can be performed by Disk Drive package by analyzing the read data from a Guzik spinstand (see Fig. 2).
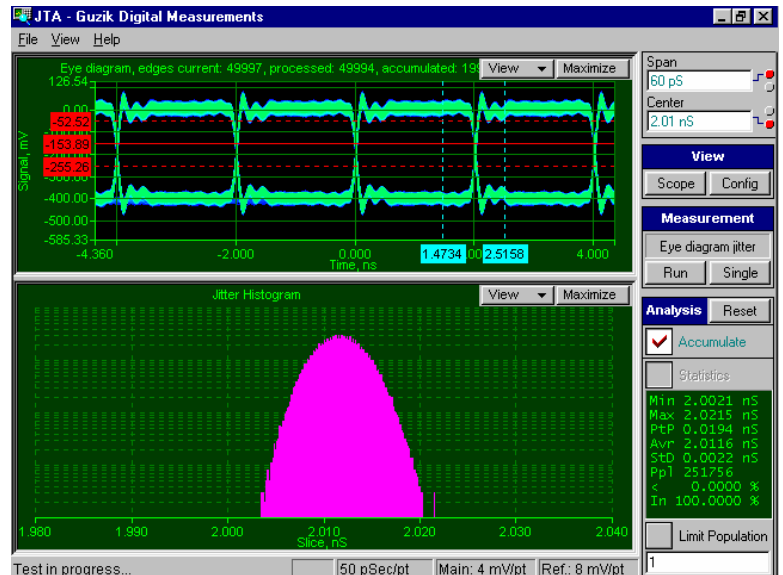

Fig. 1. Jitter Histogram of Selected Part of Eye Diagram
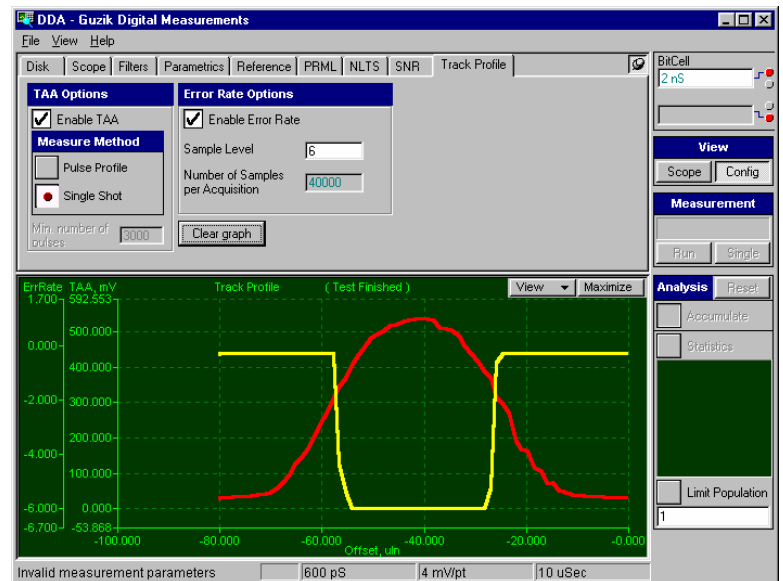(2.2ps RMS Jitter Measured)

Fig. 2. Track Profile with Error Rate (Bathtub Curve)
(1Gbit/s Data Rate, Error Rate Better than 10^{-6})

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