**Anritsu** envision:ensure

# Signal Integrity Solutions

VectorStar®, ShockLine™, BERTWave™, and Signal Quality Analyzer



## Analyze the Quality of Your Signal
### With Anritsu Bit Error Rate Testers

Anritsu BERTs offer a wide variety of tools to measure the quality of high speed digital signals. Measurements, such as BER, skew and crosstalk can be determined between up to 8 channels at 32 Gb/s. Various types of jitter can be injected to evaluate jitter tolerance. Clock recovery can be used when different Tx and Rx clocks are employed. During EYE mask test and "bathtub" curve derivation emphasis and equalization can be applied to improve EYE openings.

## Solutions for Signal Integrity

BERTs are great tools for analyzing signal quality. VNAs help diagnose issues when the quality doesn't meet expectations. If the issue lies within a device model, Anritsu VNAs offer the widest frequency range in a single coaxial connection and a low starting frequency for better DC extrapolation to help create the most accurate models. If the issue lies within a physical channel, Anritsu VNAs offer best in class time domain resolution to pinpoint defects. A wide range of de-embedding tools enables users to minimize the effects of fixtures in critical measurements

## Features

### Bit Error Rate Testers (BERTs)
• Provides BER from 0.1 Gb/s to 32 Gb/s (64 Gb/s with external MUX and De-MUX)
• Crosstalk test and skew tolerance test using synchronized multi-channel PPG
• Wide range of encoding (e.g. NRZ, PAM4, PAM8)
• Eye Diagram measurement
• Jitter testing capability including SJ, RJ, BUJ, SSC
• Passive Linear Equalizers for improved EYE opening
• Modular design with Re-configurable mainframe

### Vector Network Analyzers (VNAs)
• Widest frequency measurement capability up to 145 GHz in a single coaxial connection
• High quality low frequency measurements for better DC extrapolation
• Highest resolution time domain measurements for identifying defects
• Wide variety of de-embedding capability to minimize the effects of fixtures
• Broad set of signal integrity tools and measurements, including simulated eye diagrams
   – Trace-based EYE diagram to provide immediate results from circuit changes
   – Skew, jitter, NEXT, FEXT measurements
   – Check for passivity, causality, and more

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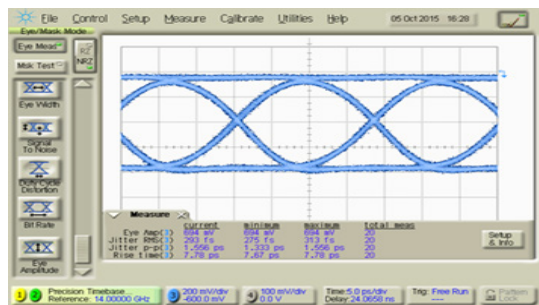
### Basics of Signal Integrity

**Signal integrity (SI) is a set of measures of the quality of an electrical signal. Signals are then used for the data communication in channels (cables & buses) to interconnect components or equipment. The quality of the signal can be degraded by quantities such as the loss of amplitude, crosstalk, delay, jitter, noise and or interference. The task of signal integrity engineering is to analyze and reduce the effects of impairments to improve quality.**
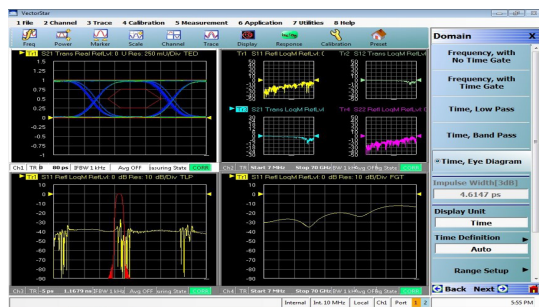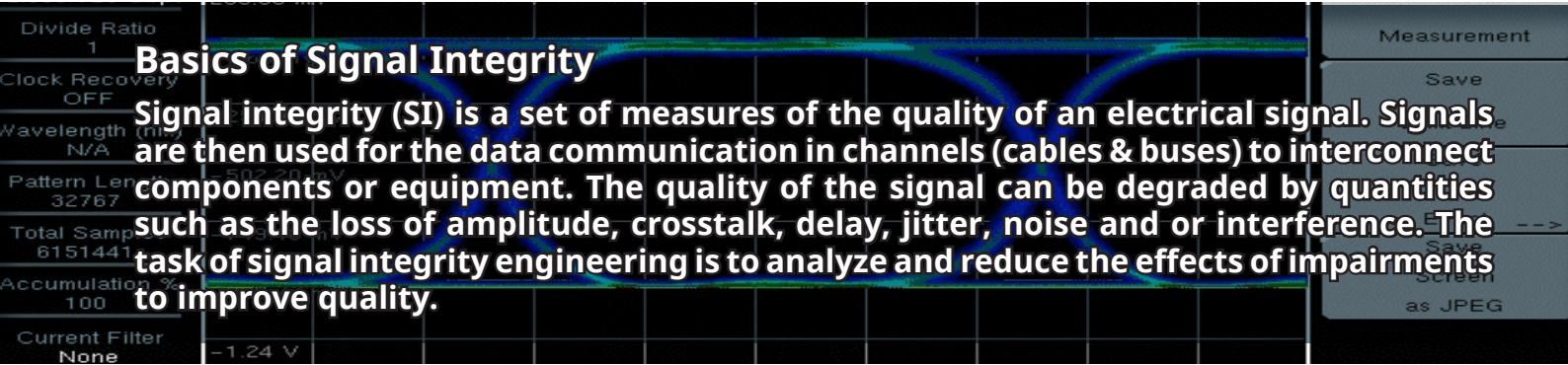


*VectorStar active updates of S-parameter, eye diagram and time domain measurements*
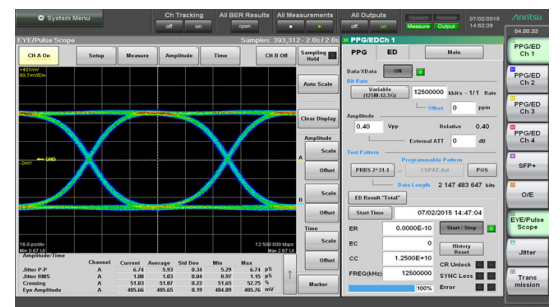


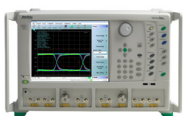*MP2100B BER measurements and Eye pattern analyses can be performed simultaneously*



*MP1800A 56G NRZ waveform*



*MS46500B series advanced time domain Option measurement showing signal integrity and eye diagram tools*

## The right tools to achieve best-in-class signal integrity analysis

**VectorStar®**
MS4640B
Vector Network Analyzer

**VectorStar®**
ME7838A/E/D
VectorStar Broadband VNA

**VectorStar®**
ME7838A4
VectorStar 4 Port Broadband VNA

**Learn More:**
**www.anritsu.com**

**ShockLine™**
MS46522B
Performance 2 Port VNA

**ShockLine™**
MS46524B
Performance 4 Port VNA

**BERTWAVE**
MP2100B
Multi-Channel BERT

**Signal Quality Analyzer**
MP1800A
Multi-Channel BERT