

Selection of a Dedicated Desktop Insertion Loss Analyzer for Island Use



AI Overview

For island deployment, a compact, VNA-integrated desktop system like Polar Atlas or Zmetrix SL100 provides accurate, repeatable insertion loss measurements with minimal setup and operator training. Key Considerations

1. Frequency Range and Signal Integrity Needs Choose a system that covers the frequency range relevant to your PCBs. For high-speed designs, systems like the Polar Atlas with Si9000e can model and measure from low kHz up to 50+ GHz, supporting multi-GHz differential signal lines and conventional FR4 or low-cost laminates . Zmetrix SL100 supports up to 20 GHz, suitable for most production-level PCB testing .
2. Measurement Accuracy and Repeatability Accuracy is critical for maintaining signal integrity. Systems like Atlas Si provide repeatable frequency-based transmission line loss measurements and integrate with Delta-L algorithms to remove via and probe effects, ensuring precise insertion loss per inch of PCB trace .
3. Ease of Use and Operator Training For island or remote use, minimal operator training is advantageous. Atlas and Zmetrix systems are designed for easy setup and fast results, allowing single insertion loss tests to be performed quickly without extensive expertise .
4. Software Integration and Data Export Desktop analyzers should support software tools for modeling and reporting. Atlas integrates with Si9000e field solver and allows direct export to Excel, facilitating analysis and communication with OEMs or remote teams . Delta-L workflow integration ensures consistent results across different test coupons .
5. Portability and Environmental Considerations For island use, consider compact, desktop-sized systems that do not require extensive lab infrastructure. VNA-based systems like Atlas or SL100 are self-contained and can operate reliably in limited-space environments.
6. VNA Compatibility Ensure the analyzer is compatible with y...

Article Content

How to Measure Insertion Loss – A Complete Guide by BitWise ...

To measure insertion loss effectively, the first step is to use a calibrated signal generator and a reliable power meter or network analyzer. Begin by measuring the signal power without the

Insertion Loss Measurement Methods | Anritsu America

The following section explains the procedure to measure insertion loss in cable loss mode and return loss mode. The measurement setup and equipment required is the same for both modes.

PCB Signal Integrity and insertion loss testing, modeling and

Atlas Attenuation / Loss Analysis System completes the range of products for insertion loss. Atlas combines with a Tektronix DSA8300 TDR and 80E04 samplers to deliver an easy to use insertion

PCB Production Insertion Loss Testing with Delta-L 4.0 Method

The combination of the industry-standard Atlas test environment with Anritsu's renowned ShockLine™ VNA technology delivers new standards in accuracy and ease-of-use when production

Introduction to Measuring Insertion Loss and Gain

Insertion loss and gain play crucial roles in assessing the performance of electronic components, and measuring them accurately is essential for evaluating the efficiency of devices.

A Method for Improving High-Insertion-Loss Measurements with a

Abstract We present a method for improving high-insertion-loss measurements with a calibrated vector network analyzer (VNA) requiring only two additional pieces of hardware. By

Testing insertion loss of PCB signal structures with Delta-L 4.0

Delta L 4.0 has been developed for use up to 40 GHz and provides a simple and tailored method to obtain the insertion loss per inch of a trace section on a certain PCB layer.

Mastering Insertion Loss in RF Engineering

Learn the fundamentals of insertion loss, its causes, and its impact on RF systems. Discover strategies for minimizing signal loss and optimizing system performance.

A New Calibration Method for Achieving High Insertion-Loss

We present a new calibration method for achieving high insertion-loss measurements with a vector network analyzer (VNA). The method requires a characterized attenuator and other additional

Measuring insertion loss in automated test systems

Insertion loss characterization is important because you use it to calibrate all measurements the power meter, spectrum analyzer, and vector signal analyzer make. In a

2-Port Insertion Loss Measurements. Agilent N9912A

Agilent N9912A FieldFox RF Analyzer User's Guide provides comprehensive instructions for using the device's various features and functions, including CAT, NA, SA, CPM, PM, FOPS, VVM,

Fehlerbehebung und Testen der Dämpfung ...

Erhalten Sie Informationen über Einfügedämpfungsausfall, Ursachen, Messungen, Fehlerbehebung und Tests finden Sie unter. Einfügedämpfung vs Dämpfung, Dämpfung wird nun durch Begriff

Avoid Signal Insertion Loss by Proactively Detecting It

Insertion loss measures the amount of signal strength that is lost as the signal arrives at the receiving end of the cabling link. Ideally, you want insertion loss to be as low as possible. Insertion loss is

Insertion Loss Measurement Methods | Anritsu America

Insertion loss measurement is one of the critical measurements used to analyze transmission feed line installation and performance quality. This application note explains how Site Master is used to

VNAs Must Keep Pace with Advanced Signal-Integrity Demands

For engineers to have confidence in their high-speed designs, selecting an analyzer that has the proper frequency coverage and dedicated SI measurement tools are necessary for accurate and repeatable

Signal Integrity & Insertion Loss Analysis

In this comprehensive guide, we explore the ins and outs of insertion loss analysis from a signal integrity engineer's perspective. We detail how cutting-edge practices and data-driven insights can help

PCB INSERTION LOSS MEASUREMENT SYSTEM

Atlas for Anritsu VNA is compliant with IPC TM650 2.5.5.12 (Test Methods to Determine the Amount of Signal Loss on Printed Boards) and supports the Delta-L 4.0 test method for ex-traction of differential

PCB insertion loss test system

Atlas uses powerful mathematical processing techniques to allow nonskilled operators to measure differential frequency-dependent losses from a test coupon quickly and easily. The system is easy to

Signal Integrity & Insertion Loss Analysis

Discover how Signal Integrity Engineers optimize insertion loss analysis in computer hardware manufacturing using data analytics.

Anritsu and Polar Instrument Solution for Delta-L 4.0 Measurement

The easy to use Atlas SI software was developed for operators with no or minimum experience with VNAs. A step-by-step guide is provided to perform calibration and measurement to show a "pass" or

Understanding VSWR and Insertion Loss Plots

Understanding the VSWR and Insertion Loss Plots Pickering Interfaces RF product data sheets contain real plots taken from sample products. The information supplied in the plots is intended to help users

INSERTION LOSS MEASUREMENT

The insertion loss is frequency dependent, it increases with operating frequency. Hence, insertion loss of Circulator / Isolator becomes more significant at higher frequencies due to more power being

Contact Us

For more information, pricing, or custom solutions, please contact us:

Website: <https://adicor.eu>

Email: info@adicor.eu

Phone: +33 6 48 37 92 15

Address: 12 Rue de la Paix, 75002 Paris, France

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