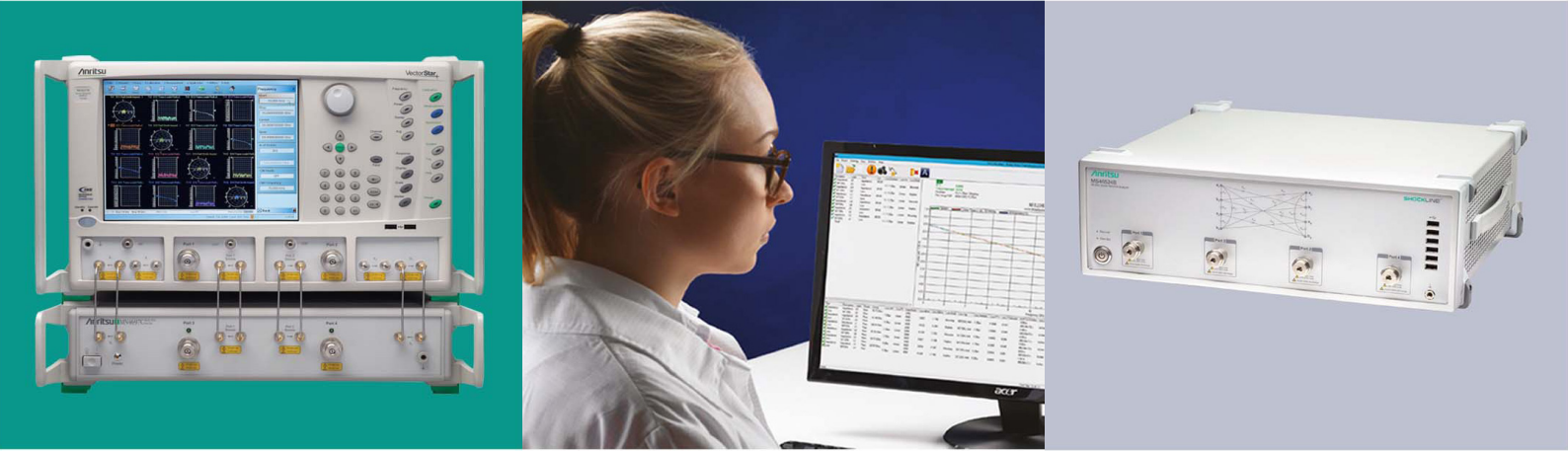




# PCB insertion loss test system



Accurate measurement of transmission line insertion loss for multi-GHz PCB fabrication

Ensures accurate insertion loss measurement

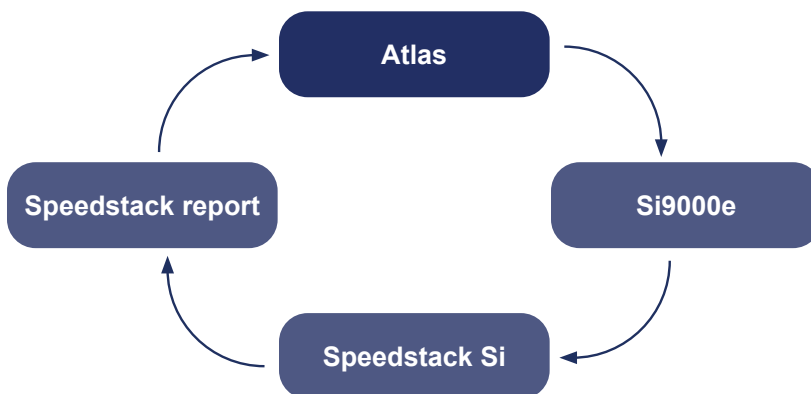
Atlas Si for Delta-L 4.0 with Eigenvalues

Incorporates time (TDR) & frequency domain measurement

For Anritsu ShockLine™ and VectorStar™ 4-Port VNA

Easy to use

Supports Delta-L 4.0 insertion loss test



[polarinstruments.com](http://polarinstruments.com)







Atlas now offers direct export of results in Microsoft® Excel® format.

## Multi-GHz PCB fabrication

While frequency-based losses are usually negligible on PCBs operating below 2GHz, above this level signal losses become a major problem for PCBs manufactured in conventional FR4 and other low-cost laminate materials.

As more OEMs integrate high-speed chipsets onto their boards, the need for PCB fabricators to measure and control frequency-based losses increases. Measuring transmission line losses presents fabricators with a set of challenges very different from those for controlling impedance: whereas trace width and dielectric separation are among the most important criteria for impedance control, dielectric loss and smoothness of the copper foils are the crucial parameters for controlling frequency-based losses.

Fast and accurate measurement of transmission line losses in the production environment allows you to increase manufacturing yield and reduces the comparatively high cost of multi-GHz PCB fabrication.

## Atlas software

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 set up, easy to use and delivers fast results without the need for extensive operator training. A single insertion loss test can be performed in a fraction of the time needed for traditional techniques.

Atlas for Anritsu ShockLine™ and VectorStar™ 4-Port Performance VNA is compliant with IPC TM650 2.5.5.12 (Test Methods to Determine the Amount of Signal Loss on Printed Boards) and provides support for Delta-L methodology.



## Specifications

|                            |   |
|----------------------------|---|
| Insertion Loss measurement | SDD21 magnitude vs frequency  |
| Impedance measurement      | Single ended and differential impedance Accuracy specifications: as defined by the by Anritsu Shockline product specification |
| Delta-L 4.0                | Delta-L 4.0 with Eigenvalues  |
| Impedance                  | Controlled (characteristic) lossless impedance  |
| Datalogging and output     | All tests data logged and output as pipe delimited text files for customer processing   |
| Microsoft® Excel®          | CSV file export Printable test lists and waveforms  |
| Accessories                | Polar IPS series probes for impedance test  |
| PC requirements            | ACC383: USB footswitch PC requirements PC running Windows 10 or later Refer to Polar Application Note AP605                   |
| Applicable standards       | IPC TM-650 2.5.5.12   |

## Additional Requirements:

Anritsu ShockLine™ MS46524B 43.5GHz 4-Port Performance VNA or Anritsu VectorStar™ MS4647B 70GHz VNA 4-Port Performance VNA (Customer supplied – may be bundled on request)

Microprobes to suit customer specific coupon design - consult the board designer for insertion loss microprobe style.

## Ordering Information

Atlas for Anritsu ShockLine™ or VectorStar™ VNA

## About Polar Instruments

Polar Instruments is a market leader in designing and manufacturing tools to simplify and enhance the design, fabrication and testing of printed circuit boards (PCBs). Their innovative tools include the industry-standard Controlled Impedance Test System (CITS) which provides the global PCB industry with an easy-to-use test system for high-speed digital and RF boards, as well as class-leading tools for fast and accurate design and testing of controlled impedance in PCBs. Polar also leads the industry in tools for automated PCB layer stackup design and documentation. Polar Instruments was established in 1976 and now has operations and channel partners in the US, UK, Europe and Asia Pacific.

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