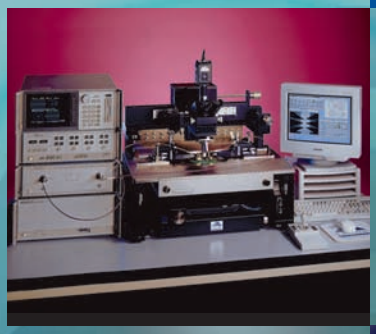
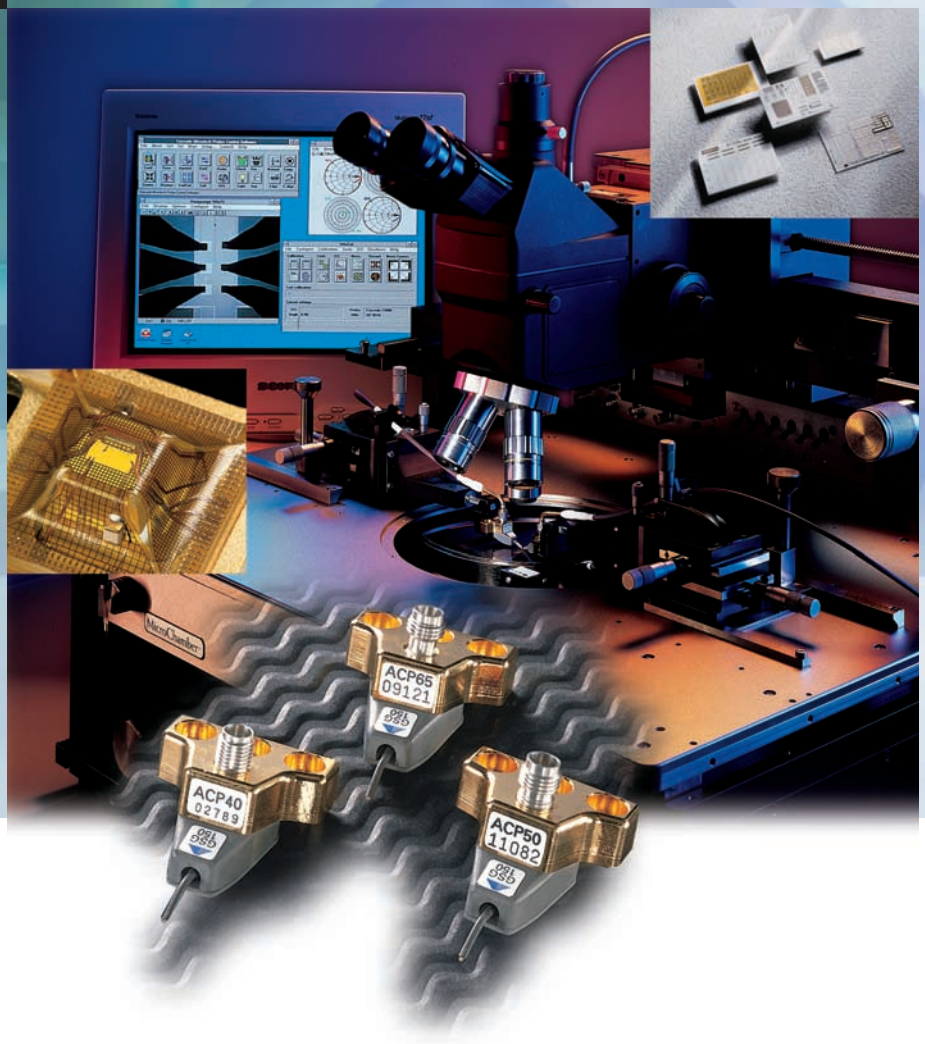




Automatic RF Calibration Software enables state-of-the-art measurements up to 110 GHz

WinCal VNA Calibration Software is an integral part of a complete microwave probing solution from Cascade Microtech. WinCal provides the simplest, most accurate, repeatable network-analyzer calibrations for precision on-wafer measurements.

CASCADE® MICROTECH

Innovating Test Technologies

Cascade Microtech's Automatic Calibration Software for Vector Network Analyzers

Because accurate measurements begin with accurate calibrations, Cascade Microtech offers a unique solution to manage the rigors of on-wafer calibration: Automatic Calibration Software for Vector Network Analyzers – WinCal.™

Operator error or damage to probes can result in a costly waste of time and inaccurate measurements. But WinCal reduces this risk by completely automating many of the steps necessary to make accurate calibrations. Test engineers and technicians can use WinCal's NIST-verified calibration method, LRRM, when absolute accuracy is essential.

Multi-Chip Module (MCM) and Multi-port MMIC applications can benefit from WinCal's SOLR (Short-Open-Load-Reciprocal-Thru) calibration method to remove errors found within non-ideal thru lines, such as 90-degree bends.

WinCal answers the need for speed and automation with OLE Automation (Object Linking and Embedding). It allows you to run Visual Basic, Borland, Delphi, or any Windows development tool that supports OLE Automation to operate available functions in WinCal.

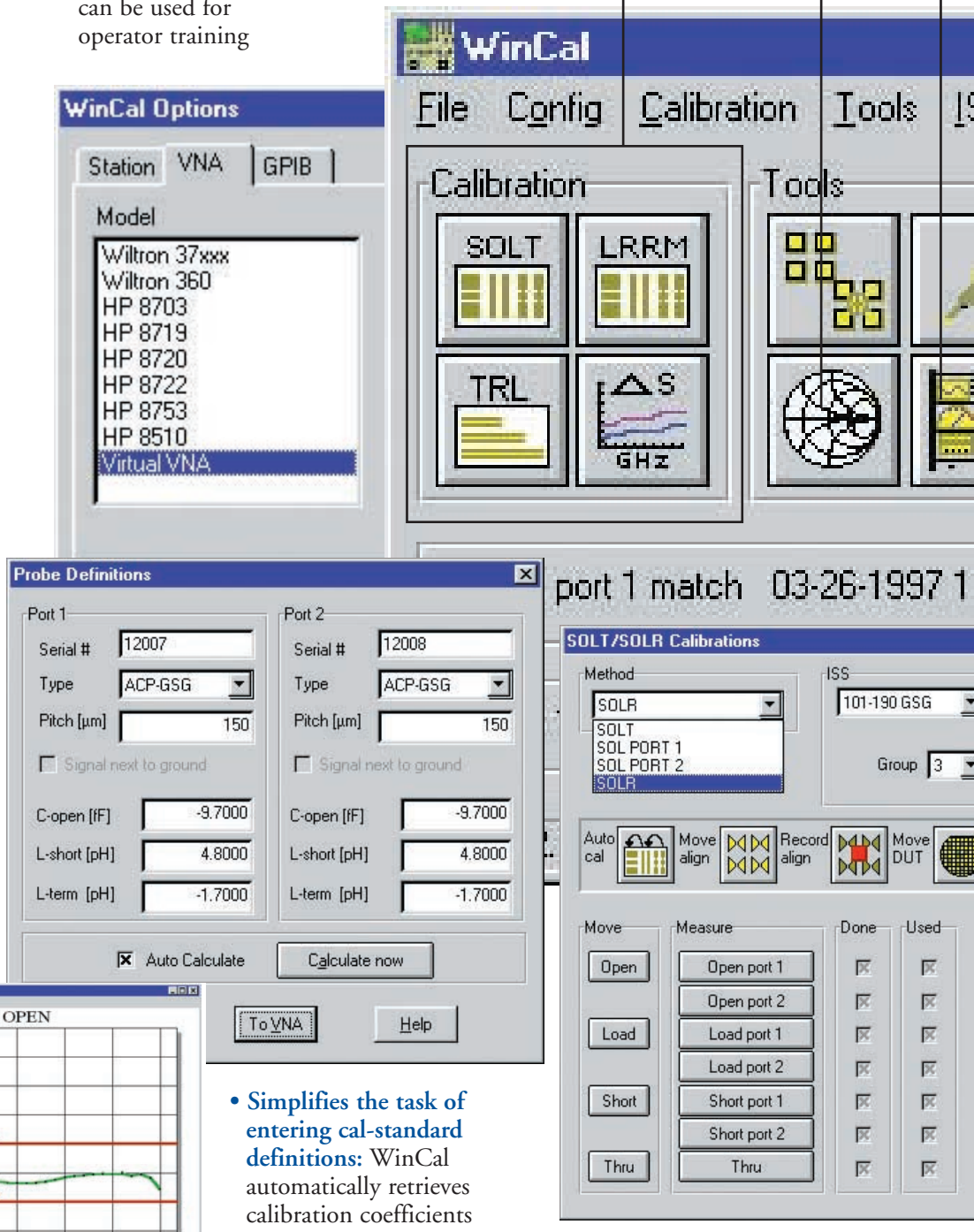
Calibration Accuracy + Repeatability = Measurement Integrity

- **Full support for Agilent and Anritsu** Vector Network Analyzers
- **Virtual VNA** can be used for operator training

- **Automatically steps between calibration standards,** measures raw data, computes error coefficients, verifies calibration integrity, and stores error terms in the network analyzer using LRM, LRRM, SOLT, SOLR or TRL calibration techniques

- **Reads, displays, and stores S-Parameters** in Touchstone file format, stores graphics in standard graphic file formats





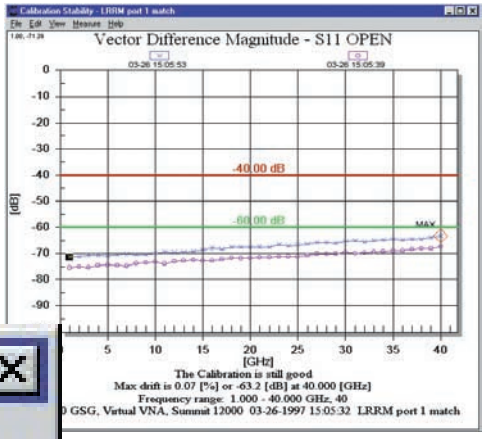
- **Simplifies the task of entering cal-standard definitions:** WinCal automatically retrieves calibration coefficients for standard Cascade probes and calibration substrates

- **SOLR calibration capability** allows non-ideal on-wafer thru standards

- **Generic Instrument I/O** allows you to store up to 10 commands for later use through literal GPIB

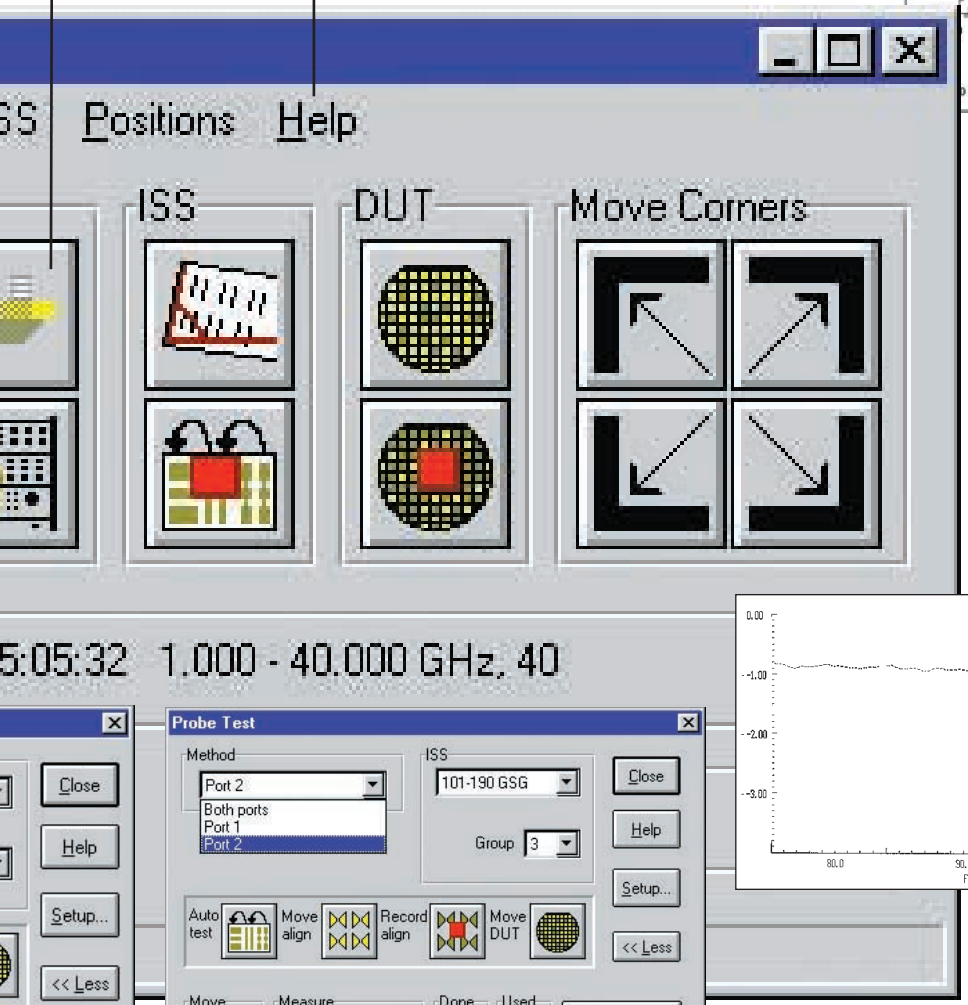
- **Probe test** allows you to verify probe performance

- **Extensive Windows On-Line Help** eliminates contamination and static problems of paper manuals

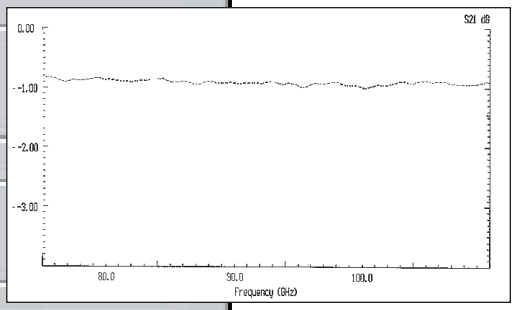


- **Verifies and plots system drift** so data integrity is enhanced; gain confidence in your calibrations

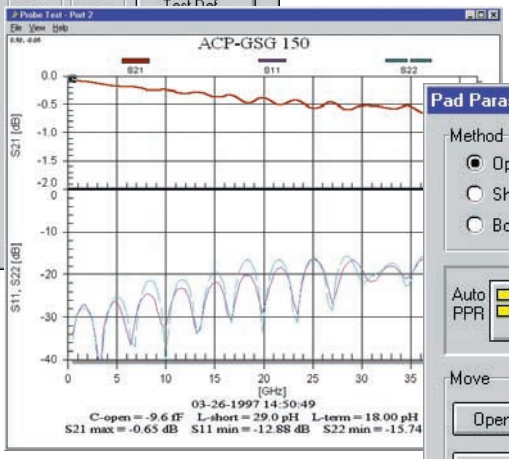
- **OLE automation** allows you to access WinCal S-Parameter functions from other Windows programs



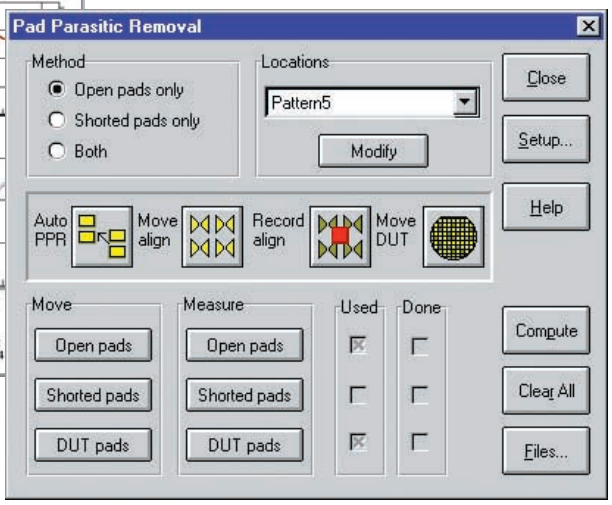
- **S-parameter viewer** supports Smith, Polar, Log-Magnitude or Angle formats



- **Pad Parasitic Removal routines** allow for intrinsic device f_t measurements by correcting for pad parasitic effects



- **Verifies probe performance** and obtains frequency-specific-loss-data for power corrected measurements



System Requirements

WinCal supported VNAs:
Agilent 8510 B/C
Agilent 8753 (SOLT only)
Agilent 8719, HP 8720, HP8722 (Model D option 400 required for LRM, LRRM, SOLR, TRL)
Anritsu 372xxA Series (firmware version 2.03 or later required)
Anritsu 360B Series (firmware version 4.02 or later required)
Supports: S300, Summit 10000 and 12000-Series Semiautomatic Probe Stations (running PCS/Nucleus)
Supports S300M, Summit 9000-Series and 11000-Series Manual Probe Stations
For automated TRL calibrations on semiautomatic stations, MS1-8-Series programmable micropositioners are needed.

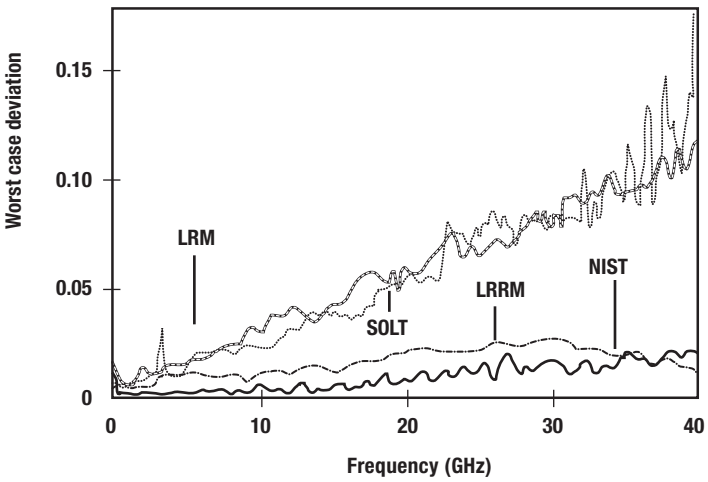
Computer Requirements

Processor: 486 DX-33 minimum
Memory: 8 MB min., 16 MB recommended
Hard Drive: 9 MB free space required
Monitor: SVGA
Software: Windows 95/98/NT
Expansion Slots: National Instruments GPIB IEEE-488.2 PC interface card and software driver installed
Cascade Microtech's Prober Control Software, Nucleus version 2.0 (or later) or PCS version 2.5 (or later) *(Only on S300 and Summit 12000-Series probe stations, not required for manual probing systems)*

Ordering Information

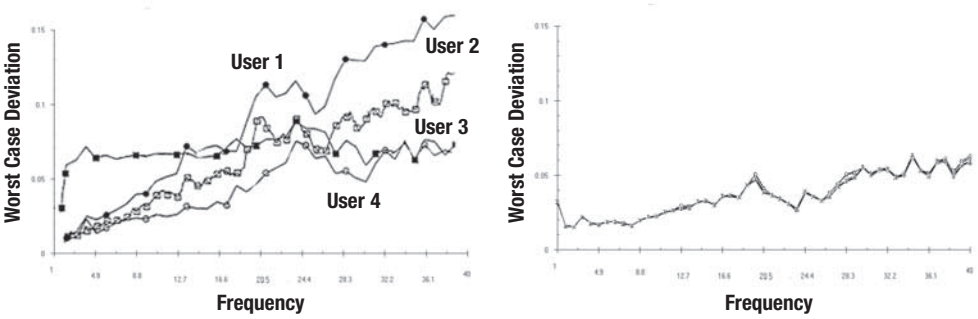
WinCal 2.x VNA calibration software for Summit semiautomatic probe stations. . . . *VNACAL-WIN*
WinCal 2.x VNA calibration software for manual probe stations . . . . . *VNACAL-WIN-M*

Calibration Accuracy of LRRM



Graph compares the worst-case S-parameter measurement uncertainty of VNA calibrations to NIST benchmark calibration and exhibits the superiority of WinCal's LRRM calibration over SOLT.

Calibration Type	Typical Calibration Time	Calibration Repeatability Worst Case Deviation of S-Parameters @ 40 GHz	Calibration Accuracy Worst Case Deviation of S-Parameters @ 40 GHz
VNA Front Panel Manual Prober SOLT Calibration	5 min.	15%	18%
WinCal LRRM Summit Automatic Prober Calibration	45 sec.	3%	3%



Graphs compare repeatability of manual calibrations versus automatic LRRM calibrations.

For ISS information refer to the Impedance Standard Substrates Family data sheet. For a microwave probing configuration using programmable micropositioners mounted on a Semiautomatic Summit Station, refer to the MS1-8 Programmable Positioner data sheet.

CASCADE MICROTECH

Innovating Test Technologies for better measurements faster

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