8 GHz Vector Network Analyser
Product overview

- 300 kHz – 8 GHz range
- 120 dB dynamic range
- Flexible architecture
- 200µs sweep speed
- Signal generator mode
- Outstanding value

The LA19-13-13 is a PC-driven Vector Network Analyser suitable for measuring a wide range of devices from 0.3 MHz to 8 GHz. In addition to internal bias-Ts for biasing active devices, the internal couplers can be bypassed to test, for example, high power devices. The instrument is housed in a small, lightweight package making it very portable. The control software provides a wide range of features including memory functions, limit lines, de-embedding, time-domain and reference plane extension. Also, utilities such as a comprehensive signal generator, measurement of power at the 1 dB gain compression point with frequency and AM to PM conversion factor add versatility to the instrument.

LA Techniques Ltd

http://www.latechniques.com

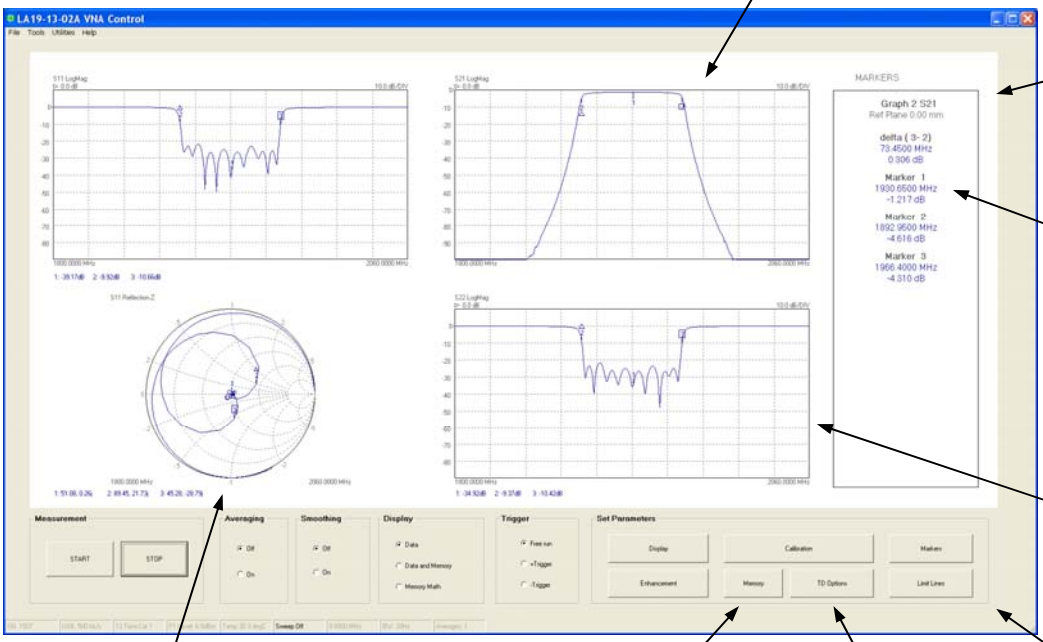
Easy to follow user interface based on familiar Windows® form

Wide selection of sweep points from 51 to 9001 with 10 Hz resolution. -20 dBm to +10 dBm test level

Measurements can be saved in several formats to support most simulators

Low trace noise typically 0.001 dB rms thanks to innovative architecture

Calibration and status can easily be saved and recalled



Familiar, easy to use Windows® interface

Multiple markers including delta, fixed, peak/min find modes provide precise readouts. Drag any marker using the mouse or dial in a precise frequency.

4 display channels / 2 traces per channel Allow all S-parameters to be displayed.

Limit lines are easy to set up and support up to 8 segments

User-defined colour scheme for the graphics display to suit individual preferences

Memory facility includes vector math functions

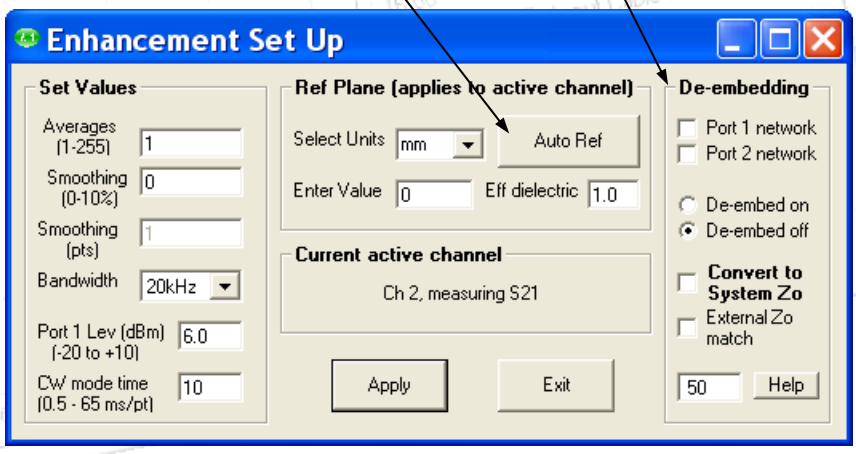
Time domain facility can be used for fault finding

Reference plane extension

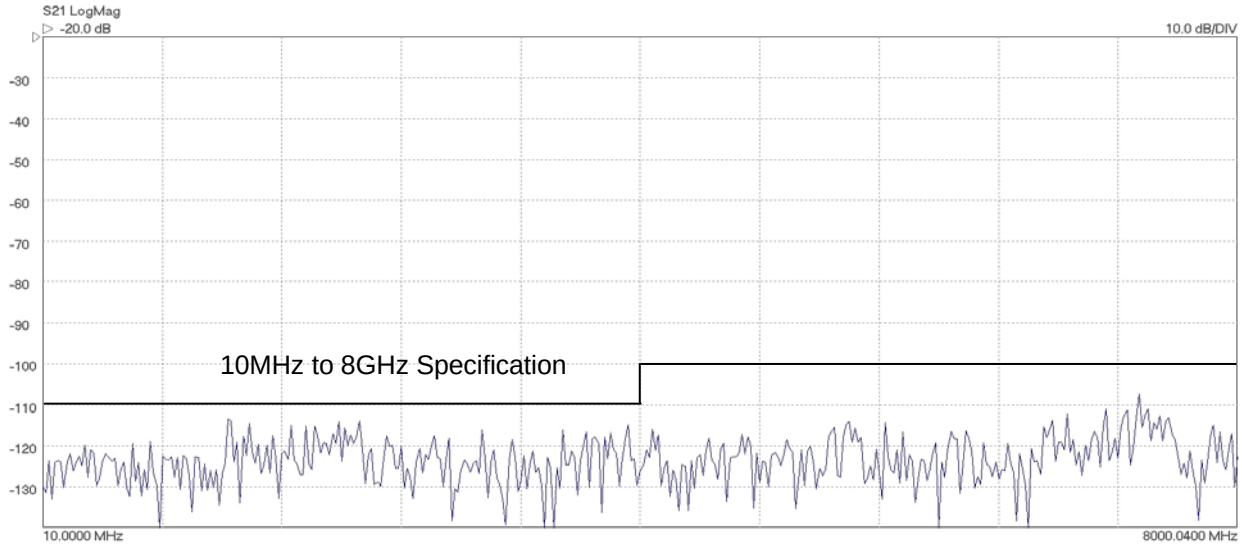
Measurement enhancement includes averaging, smoothing, reference plane extension and de-embedding. The latter is particularly useful when evaluating devices mounted on test jigs, requiring interfacing networks to be removed from the measurements.

Auto Ref quickly extends the reference plane. Value returned Accounts for the effective dielectric constant entered.

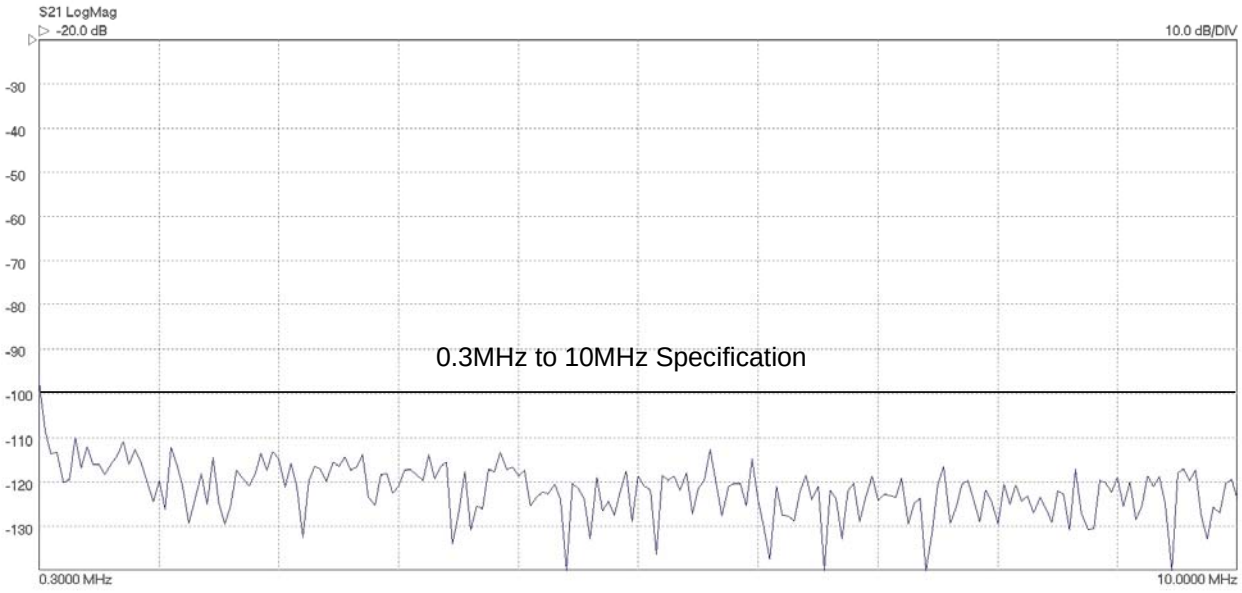
De-embedding facility can be used to remove test jig effects in real time



Wide dynamic range covers many applications



Measured dynamic range to 8GHz



Measured dynamic range to 10MHz

Measurement flexibility includes adjustable bandwidth from 20kHz down to 10Hz and sweep by sweep averaging.

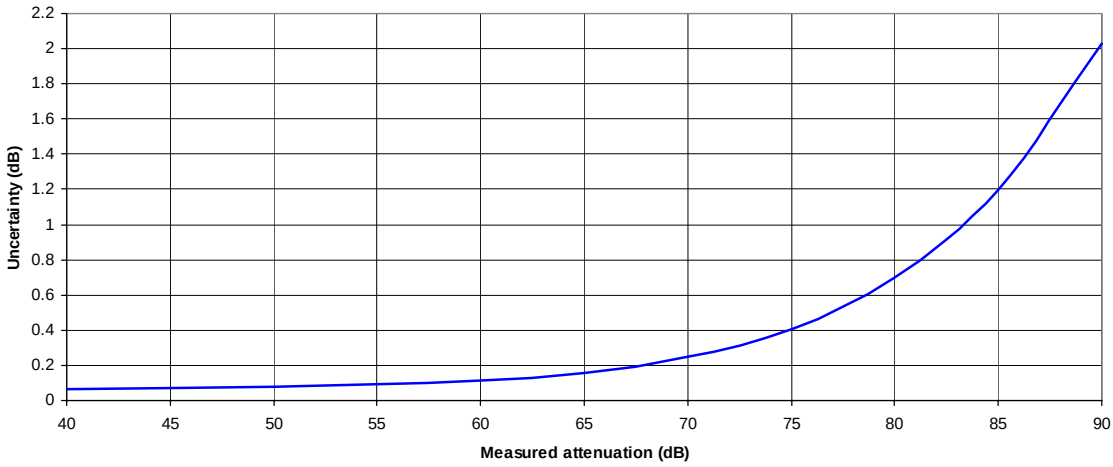
Fast sweep

Sweep times down to 200µs per point for single parameter measurements and 600µs for full error correction.

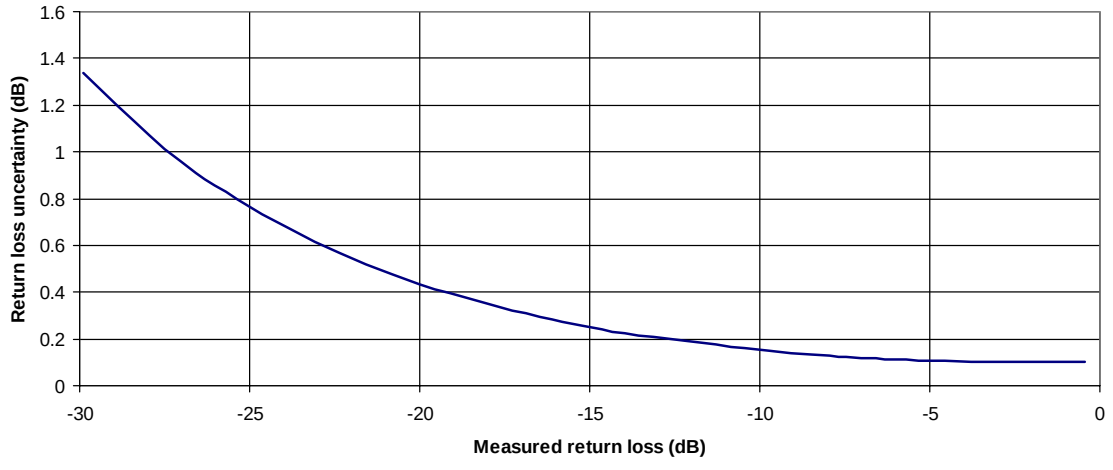
20 kHz bandwidth, full band sweep time: 51 points, 12-term correction: 28 ms
201 points, 12 term correction: 108 ms
101 points, s21 calibration: 19 ms

Excellent accuracy

The LA19-13-03 can provide excellent accuracy using the optional economy calibration kits or equivalent kits available from other manufacturers. The plots below show calculated Transmission and Reflection measurement uncertainties assuming a well matched DUT. Refer to the LA19-13-03 data sheet for further details and guaranteed specification.



Uncertainty of S21/S12 measurements

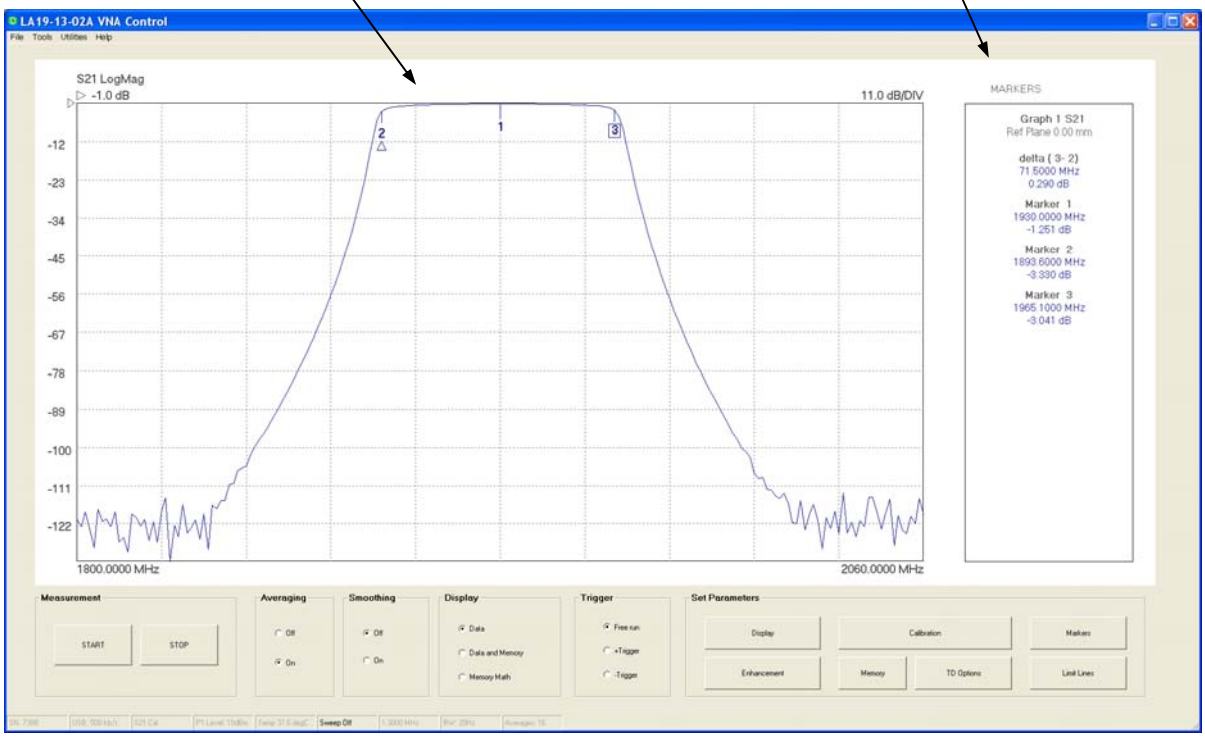


Uncertainty of S11/S22 measurements

Multiple markers and functions

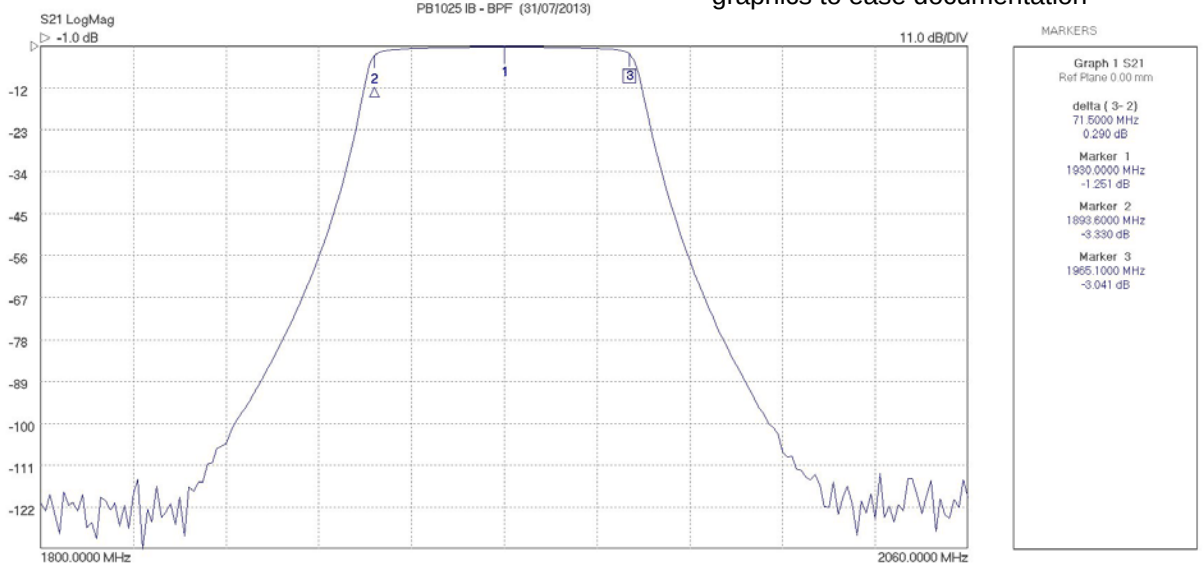
3dB bandwidth
Peak and 3dB bandwidth search function

Up to 8 markers can be placed on each measurement channel. Function include minimum, maximum, 3dB bandwidth and delta referenced to either live or memory trace



Save data in a many formats

Graphic data can be saved in JPEG, GIF, PNG, TIF and BMP. Title can be added to graphics to ease documentation



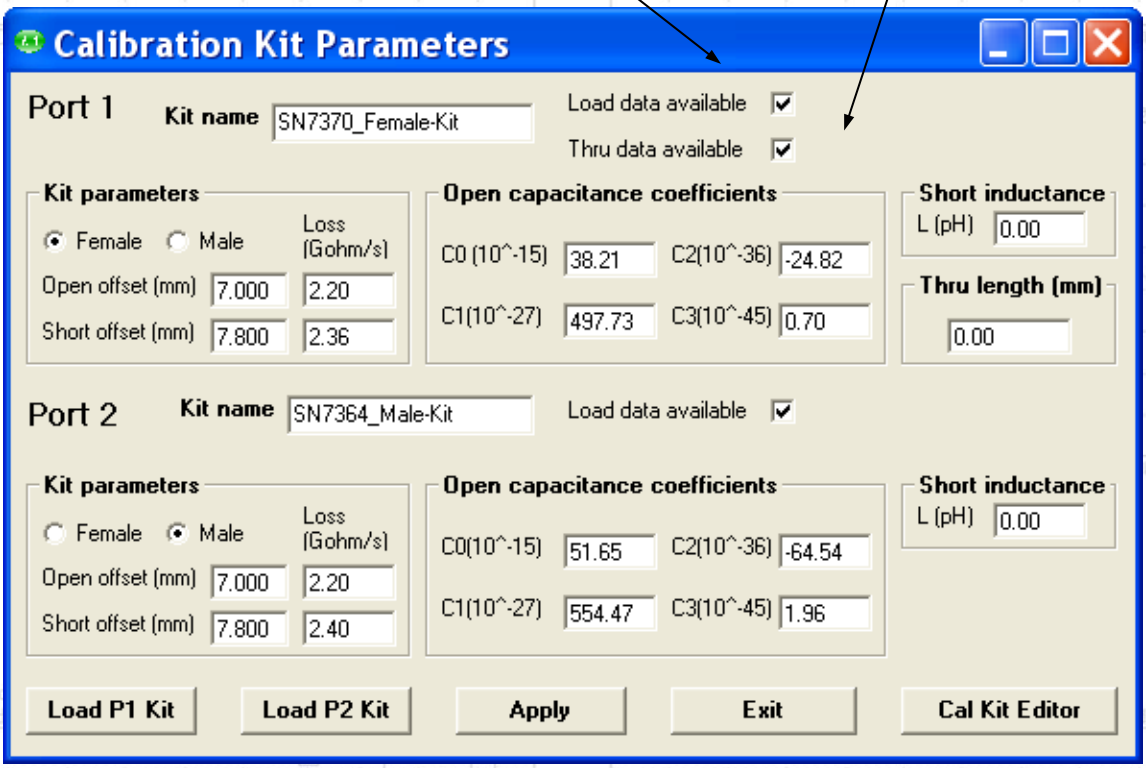
Data can also be saved to a file in tabular form. Formats available are Log magnitude and phase, magnitude and phase, real and imaginary

Accurate calibration with optional 3.5mm calibration kit

Each kit is provided with calibration data that closely characterises the Load. Using this data significantly enhances the performance of the kit

Calibration data enhances accuracy. Use calibration data to improve cal kit performance

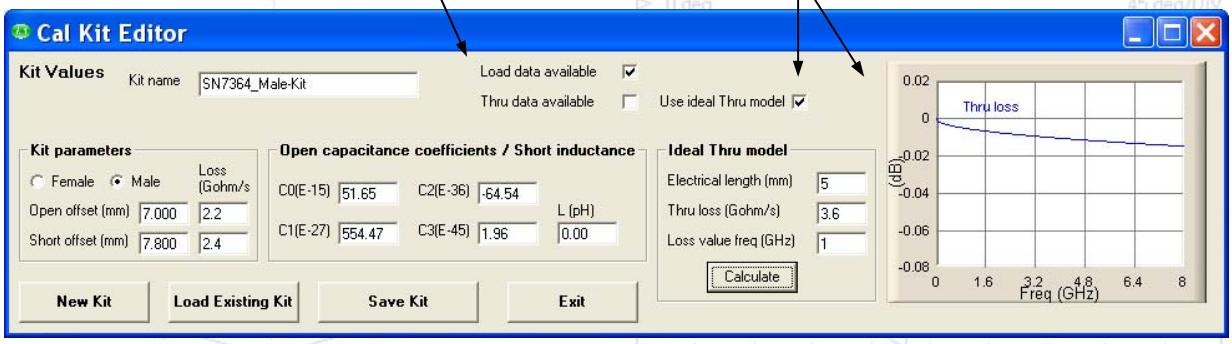
Open and short circuit parameters allow a **tailor-made kit** to be built



Easy to use calibration kit editor

Can use data from file for Load and Through adaptor

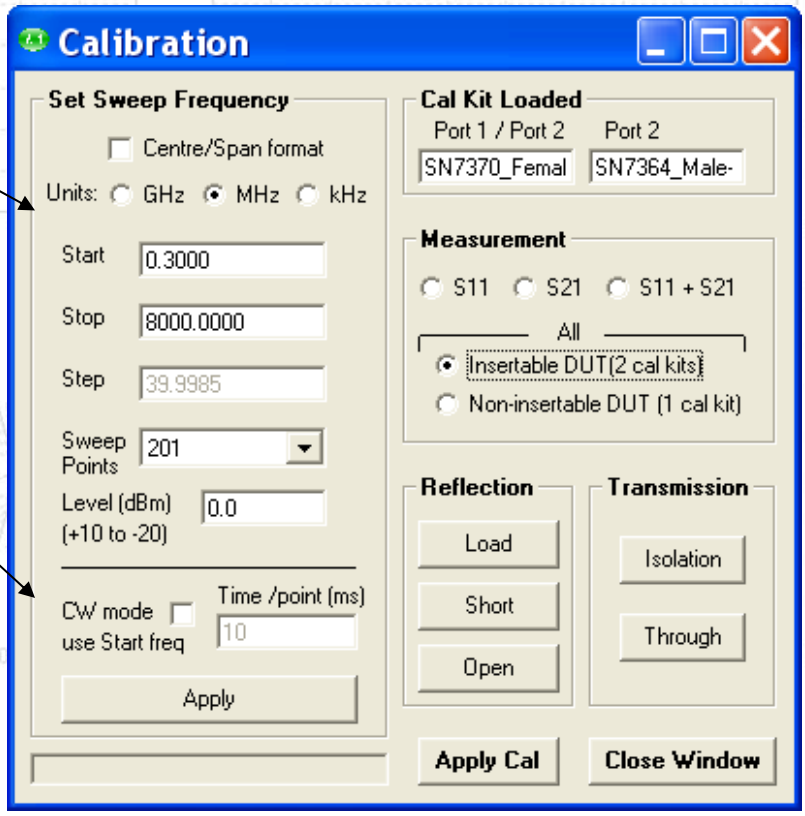
If no data available for the through adaptor, a simulator helps set the correct parameters



Easy to set up calibration

Setting up the calibration is easy and can be completed in very little time. Set frequency range, set the test power level and chose the number of test points.

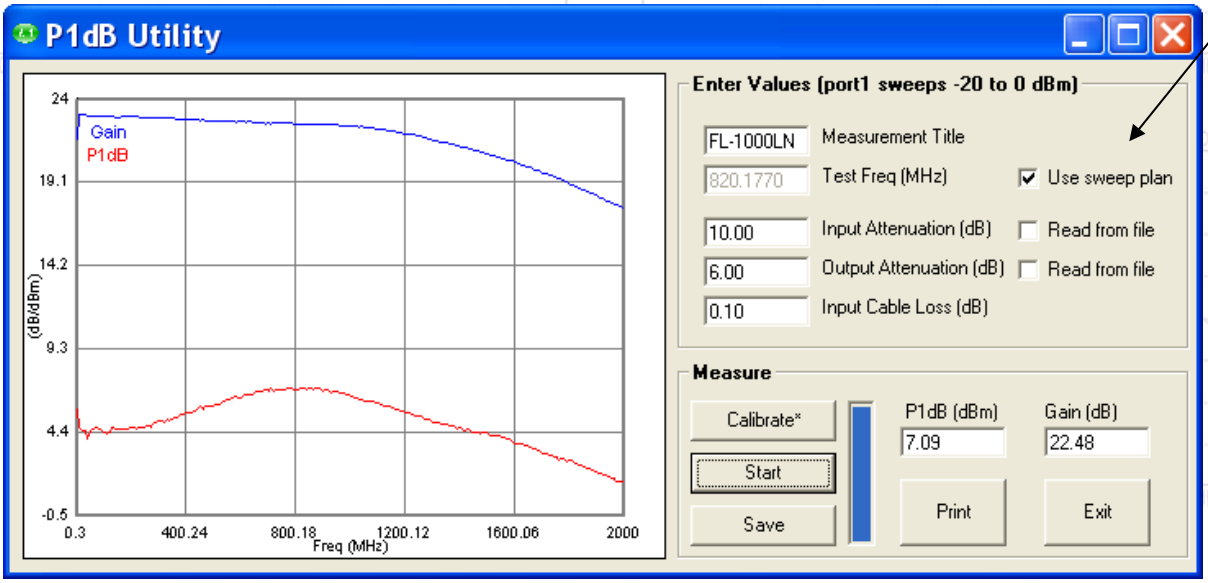
CW Mode for fixed frequency measurements is available



Useful utilities to help evaluate active devices

Utilities provided include power at the 1 dB gain compression point and AM to PM conversion. The instrument can be configured as a synthesised signal source with a comprehensive range of facilities as shown overleaf.

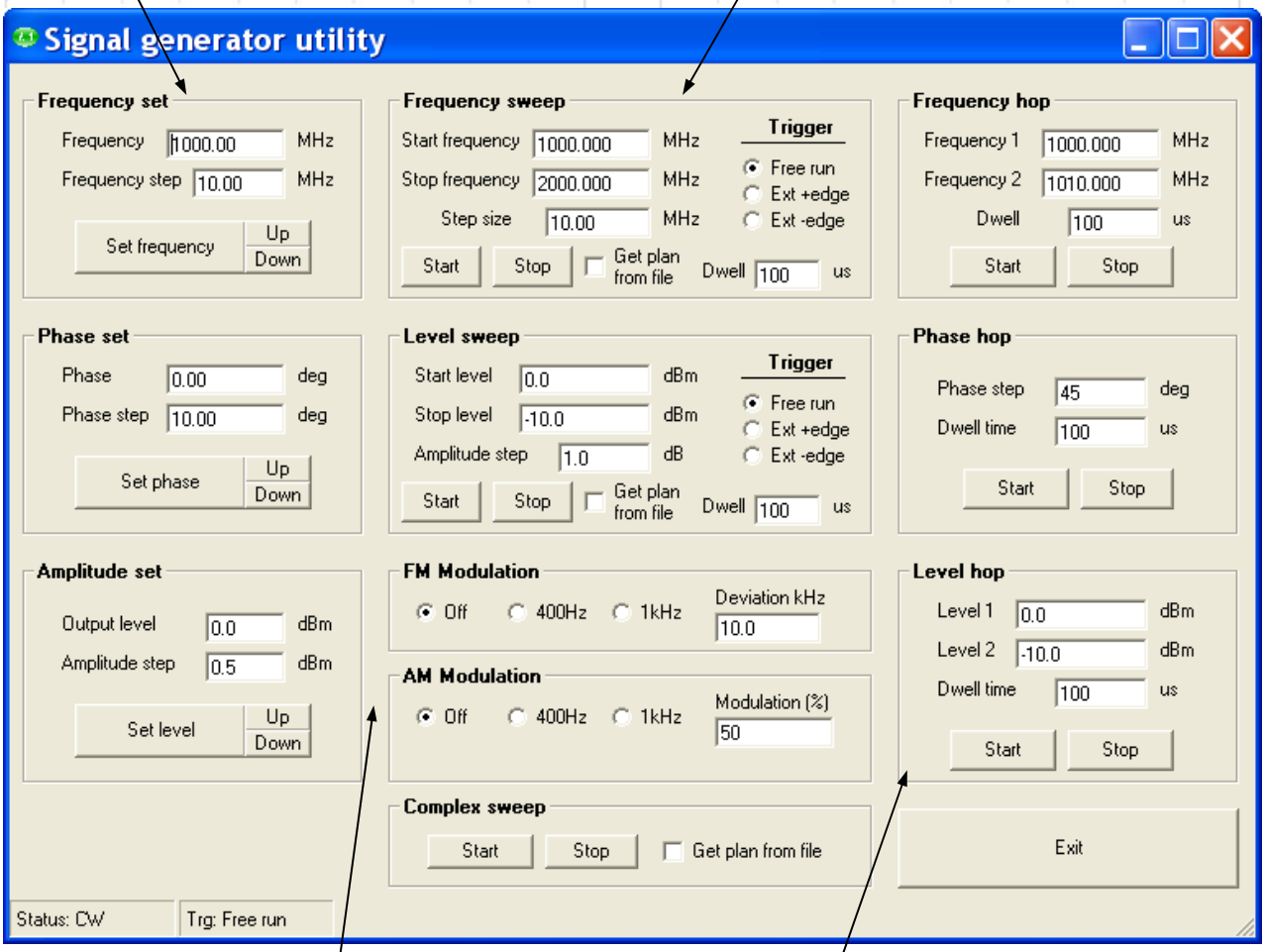
Measure P1dB at a single frequency or use the sweep range set



Comprehensive signal generator functionality

Signal generator function from 300kHz to 8GHz with the ability to set the amplitude from -20 dBm to +10 dBm and phase.

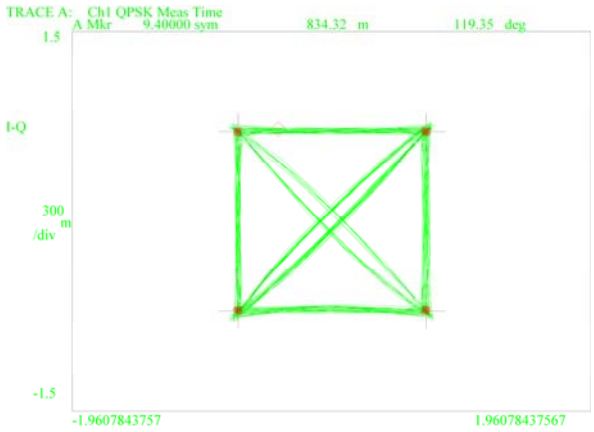
Sweep generator function allows frequency sweep plans of up to 9001 points with dwell time settable from 26 µs to 65500 µs. Amplitude level sweep is also supported over a range of +10 dBm to -20 dBm. Both types of sweep modes can be synchronised to an external trigger. Plans read from external files are also supported.



FM and AM modulation modes at 1 kHz or 400 Hz with up to 200 kHz FM deviation and up to 90% AM modulation depth.

Hop modes support frequency, phase and level hopping. In all cases dwell times can be set between 26 µs and 65500 µs.

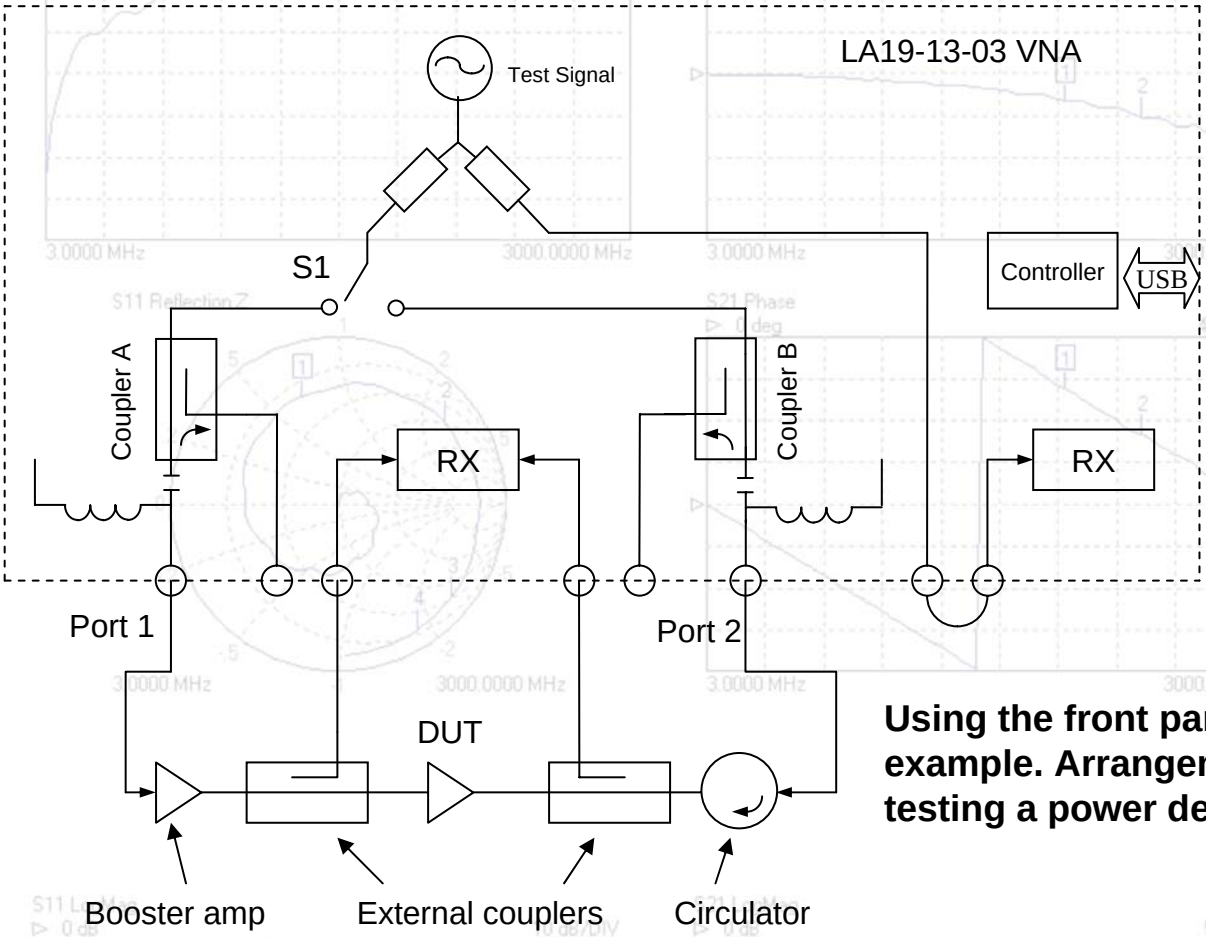
Example complex sweep emulating QPSK



Signal generator characteristics

Parameter	Typical	Comment
Phase noise	-90 dBc/Hz	at 4GHz
Frequency settling	40 µs	to within ±10 ppm
Amplitude settling	13 µs	to within 5%

Flexible architecture



Using the front panel links example. Arrangement for testing a power device

Software support for third party applications

Support for popular third party tools such as View Lab and Vee is provided by means of a DLL library provided with the user interface application. The library provides SCPI like command functionality and supports all functions available from the standard user interface software.

Compact and lightweight

The small footprint and lightweight of the LA19-13-03 make it ideal for general laboratory applications as well as dedicated production tasks.

External dimensions with handle retracted:	316 x 140 x 319 mm
Weight:	5.8 kg

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