LA Techniques Ltd

Easy-Cal

LA19-17-01 8.5 GHz Electronic Calibration Module

The Easy-Cal module provides an efficient way to perform one and two port vector network analyzer calibrations. The convenience and speed of the Easy-Cal module means multiple calibrations can be performed and saved in seconds.

The Easy-Cal module is intended for use with LA Techniques' 8.5 GHz USB VNA. It is controlled from the host PC via a USB link. The module includes internal temperature control to ensure excellent accuracy and stability in typical operating environments.

Overview

Frequency range	300 kHz – 8.5 GHz
Impedance	50 Ω
Number of ports	2
RF Connectors	SMA
RF power	+10 dBm
RF power (no damage)	+20 dBm
RF port DC voltage (no damage)	±1 V
Factory data	Internal memory

Supported configurations (see note 1)

DUT	Port A	Port B
Non-insertable	Female	Female
Insertable*	Female	Male
Insertable*	Male	Female

* Using supplied male to male adaptor

Effective port characteristics

Directivity	40 dB
Source match	40 dB
Load match	36 dB
Reflection tracking	0.05 dB
Transmission tracking	0.04 dB

Interface and control

Connection	USB 2.0
Connector	Micro USB
USB dc current	0.5 A
Indicator	Red (warming) Green (ready)

Dimensions

Length (ex RF connectors)	49 mm
Width	43 mm
Height (incl rubber feet)	15 mm
Weight	60 gm

Environmental conditions

Temperature (operating)	+10 ºC to +35 ºC
Temperature (operating*)	+18 ºC to +28 ºC
Temperature (storage)	-20 ºC to +50 ºC
Humidity (non-condensing)	80%
Vibration (5 Hz to 300 Hz)	0.5 G

*Internal temperature control operating range

Notes: 1. Option 1 reverses the sex of all connectors shown in the table. 2. Specification subject to revision without notice. 3. Please observe maximum ratings. Exceeding these is likely to cause permanent damage. 4. Effective port characteristics assume +18 to +28 ºC operating temperature and measurements taken at the calibration temperature.

Measurement uncertainty

The measurement uncertainty of the LA19-13-04B vector network analyzer after calibration using the Easy-Cal is shown below.

Reflection measurements

Range	Magnitude	Phase
-15 dB to 0 dB		
Freq < 2MHz	1.0	11.3º
Freq > 2MHz	0.71	5.7º
-25 dB to -15 dB		
Freq < 2MHz	1.13	8.5º
Freq > 2MHz	1.4	14.2º
-30 dB to -25 dB		
Freq < 2MHz	4.3	28.3º
Freq > 2MHz	4.3	28.3º

Transmission measurements

Range	Magnitude	Phase
+0 dBm to +10 dBm		
Freq < 2MHz	0.6	8.5º
Freq > 2MHz	0.3	2.9º
-40 dBm to 0 dBm		
Freq < 2MHz	0.4	2.9º
Freq > 2MHz	0.2	1.5º
-60 dBm to -40 dBm		
Freq < 2MHz	0.7	11.3º
Freq > 2MHz	0.3	5.7º
-80 dBm to -60 dBm		
Freq < 2MHz	2.9	21.2º
Freq > 2MHz	2.1	17º

Notes: 1. Some reduction in the crosstalk correction (above 4 GHz) available on the host VNA may result when using the Easy-Cal module.

Available options

Option 1: Replaces female SMA connectors with male SMA connectors on both ports. In addition, a calibrated female to female adaptor is provided to allow insertable calibrations to be carried out.

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