



CH-3003 Bern-Wabern, 3 March 2016

Measurement Services

RF & Microwave Laboratory

Valid from: 01.03.2016

The specifications in the table below are default values. Extended ranges etc. might be available upon request.

Some additional measurement capabilities, as e.g. dimensional measurements of connector pin depths, are not listed.

For further information contact the laboratory:

- www.metas.ch/hf
- hf@metas.ch
- Phone: +41 58 387 11 11 (METAS service desk. Ask for the RF&MW laboratory!)

„METAS General Terms and Conditions” are applied to all services of METAS. They are available at www.metas.ch. Amendments, subsidiary agreements and supplements shall always have to be made in writing.

Category	Measurement Quantity	Additional information	Devices under test
RF power	Absolute power, calibration factor	Range: 1 μ W to 100 mW (-30 dBm to +20 dBm) Method: direct comparison system Frequency: \leq 110 GHz Line type: 50 Ω coaxial, 75 Ω coaxial \leq 3 GHz	Power meter and power sensor, RF and MW signal generator, signal and spectrum analyzer, measuring receiver
	RF voltage	Range: 20 mVpp to 6.2 Vpp Method: Calibrated power sensor Frequency: \leq 6 GHz Line type: 50 Ω coaxial	Oscilloscope, voltage sensors, oscilloscope, calibrator, voltage source
	Linearity correction factor	Range: 100 pW to 100 mW (-70 dBm to +20 dBm) Method: measurement receiver Frequency: \leq 18 GHz Line type: 50 Ω coaxial	Power meter and power sensor, RF and MW signal generator, signal and spectrum analyzer, measuring receiver, Oscilloscope, voltage sensors, oscilloscope, calibrator, voltage source
S-parameter	Reflection and transmission (complex-valued)	Method: vector network analyzer Frequency: \leq 110 GHz Line type: 50 Ω (75 Ω) coaxial, WR10	Passive device, 1-port and 2-port devices, 3-port device (splitter, divider, ...), multiport devices, step attenuator
	Source match (complex-valued)	Method: passive reflectometer Range: 1 μ W to 1 W (-30 dBm to +30 dBm) Frequency: \leq 18 GHz Line type: 50 Ω coaxial	Generator
Attenuation	Attenuation (scalar)	Method: measurement receiver Range: \leq 90 dB Frequency: \leq 18 GHz Line type: 50 Ω coaxial	Step attenuator
Noise	Available noise temperature / Equivalent noise ratio (ENR)	Range: 1000 K to 1e6 K / 4 dB to 35 dB Frequency: \leq 26.5 GHz Line type: 50 Ω coaxial	Noise source
Pulse parameter	Transition duration (rise time)	Range: \geq 12 ps (pulse generator, oscilloscope calibrator) Range: \geq 23 ps (oscilloscope) Line type: 50 Ω coaxial	Pulse generator, oscilloscope calibrator, oscilloscope
	Pulse charge	Range: \geq 1 pC Peak voltage: 1 mV to 8 V into 50 Ω	Partial discharge calibrator
	Amplitude spectral voltage density	Range: 60 to 140 dB Frequency: \leq 1 GHz Line type: 50 Ω coaxial	CISPR-16 pulse generator
Impedance	Mechanical diameter profile of air line outer conductor (oc) and center conductor (cc)	Range: 1.85 to 7 mm (oc), 0.5 to 4 mm (cc) Method: air gauging (oc), laser scanner (cc) Length: \leq 30 cm Longitudinal resolution: \geq 0.1 mm Angular resolution: \geq 1.8 deg	Air line