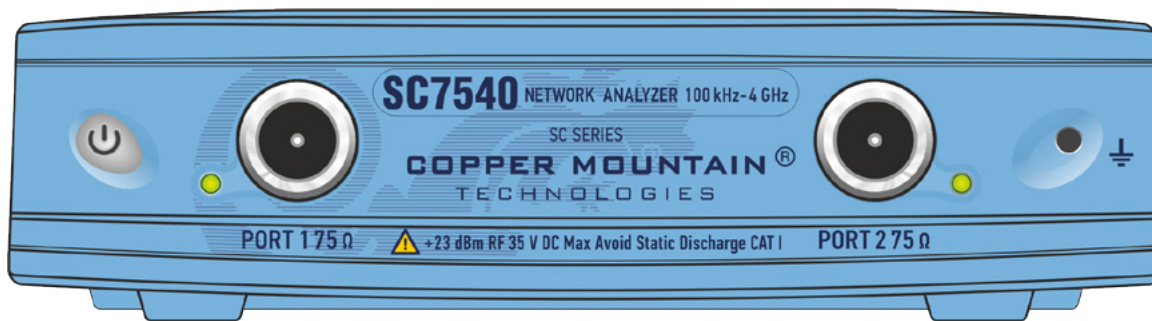


SC7540 Preliminary Specifications¹



Primary Specifications

Impedance	75 Ohm
Test port connector	type N, female
Number of test ports	2
Frequency range	100 kHz to 4 GHz
Full frequency accuracy	$\pm 5 \cdot 10^{-6}$
Frequency resolution	1 Hz
Number of measurement points	2 to 200,001
Measurement bandwidths (with 1/1.5/2/3/5/7 steps)	1 Hz to 300 kHz
Dynamic range ²	
100 kHz to 1 MHz	75 dB (100 dB typ.)
1 MHz to 4 GHz	135 dB (137 dB typ.)

Effective System Data

100 kHz to 4 GHz	
Directivity	46 dB
Source match	40 dB
Load match	46 dB
Reflection tracking	± 0.10 dB
Transmission tracking	± 0.14 dB

Uncorrected System Performance

100 kHz to 1 MHz	
Directivity	12 dB
Source match	15 dB
Load match	15 dB
1 MHz to 3 GHz	
Directivity	15 dB (18 dB typ.)
Source match	15 dB
Load match	22 dB
3 GHz to 4 GHz	
Directivity	15 dB
Source match	15 dB
Load match	18 dB

Measurement Accuracy

Accuracy of transmission measurements⁴	Magnitude / Phase
100 kHz to 1 MHz	
-15 dB to +10 dB	± 0.2 dB / $\pm 2^\circ$
-35 dB to -15 dB	± 1.0 dB / $\pm 6^\circ$
1 MHz to 4 GHz	
0 dB to +10 dB	± 0.2 dB / $\pm 2^\circ$
-55 dB to 0 dB	± 0.15 dB / $\pm 1.5^\circ$
-75 dB to -55 dB	± 0.2 dB / $\pm 2^\circ$
-95 dB to -75 dB	± 1.0 dB / $\pm 6^\circ$
Accuracy of reflection measurements⁵	Magnitude / Phase
-15 dB to 0 dB	± 0.4 dB / $\pm 3^\circ$
-25 dB to -15 dB	± 1.0 dB / $\pm 6^\circ$
-35 dB to -25 dB	± 3.0 dB / $\pm 20^\circ$
Trace noise magnitude (IF bandwidth 3 kHz)	
100 kHz to 300 kHz	0.050 dB rms
300 kHz to 4 GHz	0.002 dB rms
Temperature dependence	0.02 dB/°C

Test Port Output

Power range	-50 dBm to +10 dBm
Power accuracy	± 1.0 dB
Power resolution	0.05 dB
Harmonic distortion⁶	-20 dBc
Non-harmonic spurious⁶	-30 dBc

Test Port Input

Noise floor	
100 kHz to 1 MHz	-75 dBm/Hz
1 MHz to 4 GHz	-135 dBm/Hz
Damage level	+23 dBm
Damage DC voltage	35 V

Measurement Speed

Time per point	24 μ s typ.
Port switchover time	0.2 ms

[1] All specifications subject to change without notice. [2] The dynamic range is defined as the difference between the specified maximum power level and the specified noise floor. The specification applies at 10 Hz IF bandwidth. [3] Reflection and transmission measurement accuracy applies over the temperature range of (73 $\pm$ 9) °F or (23 $\pm$ 5) °C after 40 minutes of warming-up, with less than 1 °C deviation from the full two-port calibration temperature, at output power of 0 dBm. Frequency points have to be identical for measurement and calibration (no interpolation allowed). [4] Transmission specifications are based on a matched DUT, and IF bandwidth of 10 Hz. [5] Reflection specifications are based on an isolating DUT. [6] Specification applies over frequency range from 300 kHz to upper frequency limit, at output power of 0 dBm. © Copper Mountain Technologies - www.coppermountaintech.com - Rev. 2021Q2

SC7540 Preliminary Specifications¹

Frequency Reference Input

Port	10 MHz Ref In/Out
External reference frequency	10 MHz
Input level	-3 dBm to 3 dBm
Input impedance	50 Ohm
Connector type	BNC, female

Frequency Reference Output

Port	10 MHz Ref In/Out
Internal reference frequency	10 MHz
Output reference signal level at 50 Ohm impedance	-1 dBm to 3 dBm
Connector type	BNC, female

Trigger Input

Port	Ext Trig
Input level	
Low threshold voltage	0.5 V
High threshold voltage	2.7 V
Input level range	0 V to + 5 V
Pulse width	≥2 μs
Polarity	positive or negative
Input impedance	≥10 kOhm
Connector type	BNC, female

Trigger Output

Port	Ext Trig
Maximum output current	20 mA
Output level	
Low level voltage	0.5 V
High level voltage	3.5 V
Polarity	positive or negative
Connector type	BNC, female

System & Power

Operating system	Windows 7 and above
CPU frequency	1.5 GHz
RAM	1 GB
Interface	USB 2.0
Connector type	USB B
Power supply	110-240 V, 50/60 Hz
Power consumption	12 W
Input power	9 V DC to 15 V DC
Input power consumption DC	10 W

Factory Adjustment

Recommended factory adjustment interval	3 years
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Environmental Specifications

Operating temperature	+5 °C to +40 °C (41 °F to 104 °F)
Storage temperature	-50 °C to +70 °C (-58 °F to 158 °F)
Humidity	90 % at 25 °C (77 °F)
Atmospheric pressure	70.0 kPa to 106.7 kPa



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