

Keithley Instruments, Inc.
 28775 Aurora Road
 Cleveland, Ohio 44139
 (440) 248-0400
 www.keithley.com

Portable RF Power Meter Specifications

Specifications

Specifications Category	Specifications
Frequency range	10MHz to 6GHz
Power range	+20dBm to -63dBm
Max power	+23dBm, 5VDC
Power accuracy ¹	(at 23°C +/- 5°C)
	<u>+20dBm to +6dBm</u>
	+/- 0.24dB 10MHz to 3GHz (characteristic) ²
	+/- 0.16dB 3GHz to 5GHz (characteristic)
	+/- 0.22dB 5GHz to 6GHz (characteristic)
	<u>+6dBm to -9dBm</u>
	+/- 0.26dB 10MHz to 3.75GHz
	+/- 0.07dB typical ³
	+/- 0.40dB 3.75GHz to 6GHz
	+/- 0.07dB typical ³
	<u>-10dBm to -29dBm</u>
	+/- 0.26dB 10MHz to 3.75GHz
	+/- 0.05dB typical ³
	+/- 0.37dB 3.75GHz to 6GHz
	+/- 0.05dB typical ³
<u>-30dBm to -40dBm</u>	
+/- 0.21dB 10MHz to 3.75GHz	
+/- 0.12dB typical ³	
+/- 0.27dB 3.75GHz to 6GHz	
+/- 0.13dB typical ³	
Linearity	(at 23°C +/- 5°C) +/- 0.10dB +6dBm to -40dBm
Noise floor	-63 dBm

¹ Customer Spec = $\bar{X}(x,f) + K(=2) \cdot \delta(x,f) + \Delta_E(x,f,(18^\circ\text{C}-28^\circ\text{C})) + \mu$

Where:

\bar{X} = Mean of the data taken in the frequency range stated (x,f)

δ = Standard deviation of the data taken in the frequency range stated (x,f)

x = Measured value at test frequencies

f = Frequency range over which data was taken for specification

μ = Measurement uncertainty

Δ_E = Change associated temperature variation

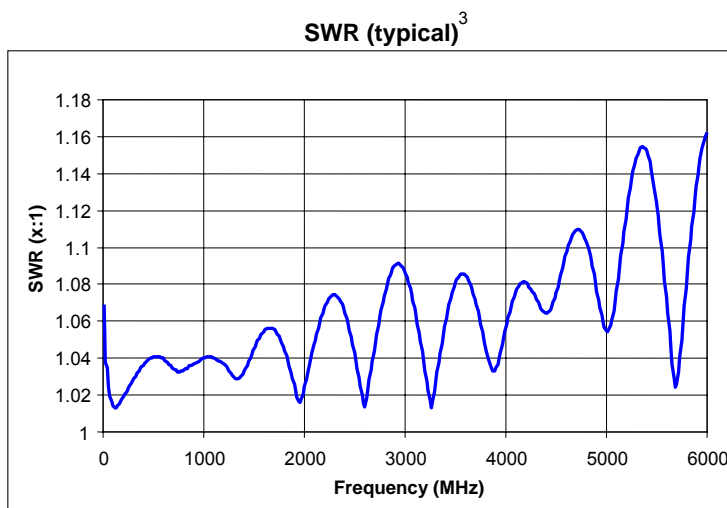
18-28 = Statistics generated separately at these temperatures and larger statistical value used in setting spec.

² Characteristic (or expected value); "characteristic" indicates performance that a unit would be expected to exhibit under the following conditions:

- Ambient operating temperature of 18°C to 28°C, unless otherwise noted.
- After specified warm up time of 30 minutes.
- Does not include measurement uncertainty.
- This performance is not warranted.

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SWR	1. 12:1 10MHz to 3.75GHz 1. 20:1 3.75GHz to 6GHz
Display	4 digits, backlight, auto-shutoff, hold—the most recent reading is shown on the display and is no longer updated
Units	dBm, Watts
Unit power (*Equipped with auto-shutoff)	Unit can be powered from any of these methods: • Two 1.5V alkaline AA batteries (not included) - Typical battery life: 17.5 hours; ⁴ low battery indicator • USB ⁵ • Optional DC power supply ⁶ (3500-PWR)
Speed	• Normal: ~2 readings per second > -30dBm approximately ~1 readings per second ≤ -30dBm approximately • High-speed: >34 readings per second > -30dBm approximately >11 readings per second ≤ -30dBm approximately

³ Typical (mean + 3 standard deviations); “typical” indicates performance that all units will meet under the following conditions:
 • Ambient operating temperature of 23°C, unless otherwise noted.
 • After specified warm up time of 30 minutes.
 • Does not include measurement uncertainty.
 • This performance is not warranted.

⁴ Typical battery life was measured in default conditions at 500MHz with backlight off and no USB communications. With backlight on, typical battery life is 2.5 hours.

⁵ With the USB connected and providing power and the optional external power disconnected, the Model 3500 will be powered from USB—regardless of whether batteries are present.

⁶ If the external power supply is connected, the Model 3500 will be powered by the external supply—regardless of whether USB power or batteries are present.

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Host interface	USB 2.0 interface with a miniature "B" USB connector ⁷
Averaging	1, 2, 4, 8, 16, and 32 averages

Connectors

RF	Type N male RF connector (50 Ω characteristic impedance)
USB	Miniature "B" USB connector
External power	Power receptacle (connect optional External Power Supply: 3500-PWR)

Operating Conditions

Operating temperature	0°C to 50°C (32°F to 122°F)
Operating humidity	<80% RH at 35°C (95°F), non-condensing
Air quality	Compatible for use in a Class 10 cleanroom

General

Storage conditions	0°C to 70°C (32°F to 158°F), 5% to 70% RH, non-condensing
Dimensions	3.125 inches x 5.260 inches x 1.925 inches, not including N connector
Weight	0.5kg (1.1 lb).
Warranty	1 year; 1 year suggested calibration cycle
EMC	Conforms to European Union Directive 89/336/EEC, EN 61326-1
Safety	Conforms to European Union Directive 73/23/EEC, EN 61010-1

⁷ The interface is USB 2.0 compliant, but with an interface speed of 12Mbps.