

**SWR AUTOTESTERS**

**97 Series and 560-97, 560-98 Series**

10 MHz to 50 GHz



The Series 97, 560-97 and 560-98 SWR Autotesters integrate a high directivity bridge, a detector, a low reflection test port, and a precision reference termination. The 560-97 and -98 Series units are broadband microwave measurement components that are used with the Model 56100A Scalar Network Analyzer and with Series 54100A Scalar Measurement System for making fixed-frequency and swept-frequency return loss (SWR) measurements. Return loss measurements are used over a wide range of radio and microwave frequencies to check the performance of systems, subsystems, and microwave components such as amplifiers, directional couplers, attenuators, filters, splitters, and terminations.

**560-97, 98 Series SWR autotester features**

- Up to 40 dB directivity
- 10 MHz to 50 GHz range
- Test port connectors to fit most measurement applications; avoids use of adapters

**97 Series SWR autotester features**

- High 40 dB directivity
- Low test port reflections
- Broadband 10 MHz to 18 GHz frequency range
- Small package including bridges, termination, and detector
- Selection of GPC-7, WSMA, or Type N test port connectors

**Specifications**

Models	Directivity (dB)	Accuracy*1	Freq. Sensitivity (dB)	Test Port Connection	Physical
97 Series SWR Autotesters, 10 MHz to 18 GHz*2					
97A50	36	10 MHz-8 GHz 0.016 ±0.06ρ <sup>2</sup>	8-18 GHz 0.016 ±0.10ρ <sup>2</sup>	±1.5 max.	GPC-7
97A50-1	40	0.010 ±0.06ρ <sup>2</sup>	0.010 ±0.10ρ <sup>2</sup>	±1.5 max.	GPC-7
97N50 97NF50	35	0.018 ±0.08ρ <sup>2</sup>	0.018 ±0.12ρ <sup>2</sup>	±1.5 max.	Type N(m) Type N(f)
97N50-1 97NF50-1	38	0.013 ±0.08ρ <sup>2</sup>	0.013 ±0.12ρ <sup>2</sup>	±1.5 max.	Type N(m) Type N(f)
97S50 97SF50	35	0.018 ±0.08ρ <sup>2</sup>	0.018 ±0.12ρ <sup>2</sup>	±1.5 max.	WSMA(m) WSMA(f)
97S50-1 97SF50-1	38	0.013 ±0.08ρ <sup>2</sup>	0.013 ±0.12ρ <sup>2</sup>	±1.5 max.	WSMA(m) WSMA(f)
560-97 Series SWR Autotesters, 10 MHz to 18 GHz*2					
560-97A50	36	0.01-8 GHz 0.013 ±0.08ρ <sup>2</sup>	8-18 GHz 0.016 ±0.10ρ <sup>2</sup>	±1.2	GPC-7
560-97A50-1	40	0.010 ±0.06ρ <sup>2</sup>	0.010 ±0.10ρ <sup>2</sup>	±1.2	GPC-7
560-97N50 560-97NF50	35	0.018 ±0.08ρ <sup>2</sup>	0.018 ±0.12ρ <sup>2</sup>	±1.5	Type N (m) Type N (f)
560-97N50-1 560-97NF50-1	38	0.013 ±0.08ρ <sup>2</sup>	0.013 ±0.12ρ <sup>2</sup>	±1.5	Type N (m) Type N (f)
					Dimensions: 7.6 x 5 x 2.8 cm plus connectors Weight: 340 g
					Dimensions*5: 7.6 x 5.1 x 2.8 cm Weight: 340 g

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Models	Directivity (dB)	Accuracy*1				Freq. Sensitivity (dB)	Test Port Connection	Physical
560-98 Series SWR Autotesters, 10 MHz to 40 GHz*2								
560-98S50 560-98SF50	37 36	0.01-8 GHz	8-18 GHz 0.014 ±0.10p <sup>2</sup>	18-26.5 GHz 0.016 ±0.13p <sup>2</sup>	26.5-40 GHz	±2.0	WSMA (m) WSMA (f)	Dimensions*4: 1.9 x 3.8 x 2.9 cm Weight: 198 g
560-98S50-1 560-98SF50-1	40 38	0.010 ±0.07p <sup>2</sup>	0.010 ±0.10p <sup>2</sup>	0.013 ±0.13p <sup>2</sup>		±2.0	WSMA (m) WSMA (f)	
560-98K50 560-98KF50	35 32 30	0.018 ±0.07p <sup>2</sup>	0.018 ±0.07p <sup>2</sup>	0.026 ±0.15p <sup>2</sup>	0.032 ±0.18p <sup>2</sup>	±3.0	Type K (m) Type K (f)	
560-98 Series SWR Autotesters, 10 MHz to 50 GHz*3								
560-98VA50 560-98VFA50	30	0.01-50 GHz 0.032 ±0.11p <sup>2</sup>				±4.0	Type V (m) Type V (f)	Dimensions*4: 2.2 x 6.6 x 5.3 cm Weight: 198 g
560-97, 560-98 Offset SWR Autotesters, 10 MHz to 40 GHz								
560-97A50-20	20	500 MHz-18 GHz*5 0.0015				±2.5	GPC-7	Dimensions*4: 7.6 x 5.1 x 2.8 cm Weight: 340 g
560-98KF50-15	15	800 MHz-40 GHz*6 0.0100				±4.0	Type K (m)	Dimensions*4: 2.2 x 6.6 x 5.3 cm Weight: 198 g
All Models: Input Port Impedance: 50 Ω      Detector Output Polarity: Negative      Maximum Power Input: 0.5 W (+27 dBm) (560-98C50A: +24 dBm) Insertion Loss (from input to test port): 6.5 dB nominal      Output Time Constant: 2 μs      Cable Length: 122 cm (4 ft.)								

\*1: Where r is the reflection coefficient being measured. Accuracy includes the effects of test port reflections and directivity.

\*2: Input Connector: Ruggedized Type K Female

\*3: Input Connector: Ruggedized Type V Female

\*4: Plus connectors and cable

\*5: When used with 18A50 Airline

\*6: When used with 19K50 Airline

Temperature: +25°C ±5°C

## Ordering information

Please specify model/order number, name, and quantity when ordering.

Model/Order No.	Name
	<b>SWR Autotester</b>
97A50	10 MHz to 18 GHz, GPC-7, 36 dB directivity
97A50-1	10 MHz to 18 GHz, GPC-7, 40 dB directivity
97N50	10 MHz to 18 GHz, N(m), 35 dB directivity
97N50-1	10 MHz to 18 GHz, N(m), 38 dB directivity
97NF50	10 MHz to 18 GHz, N(f), 35 dB directivity
97NF50-1	10 MHz to 18 GHz, N(f), 38 dB directivity
97S50	10 MHz to 18 GHz, WSMA(m), 35 dB directivity
97S50-1	10 MHz to 18 GHz, WSMA(m), 38 dB directivity
97SF50	10 MHz to 18 GHz, WSMA(f), 35 dB directivity
97SF50-1	10 MHz to 18 GHz, WSMA(f), 38 dB directivity
560-97A50	10 MHz-18 GHz, GPC-7, 50 Ω, 36 dB directivity
560-97A50-1	10 MHz-18 GHz, GPC-7, 50 Ω, 40 dB directivity
560-97N50	10 MHz-18 GHz, N(m), 50 Ω, 35 dB directivity
560-97N50-1	10 MHz-18 GHz, N(m), 50 Ω, 38 dB directivity
560-97NF50	10 MHz-18 GHz, N(f), 50 Ω, 35 dB directivity
560-97NF50-1	10 MHz-18 GHz, N(f), 50 Ω, 38 dB directivity
560-98S50	10 MHz-26.5 GHz, WSMA(m), 50 Ω, directivity = 37 dB (<18 GHz), 36 dB (18 GHz)
560-98S50-1	10 MHz-26.5 GHz, WSMA(m), 50 Ω, directivity = 40 dB (< 18 GHz), 38 dB (18 GHz)

Model/Order No.	Name
560-98SF50	10 MHz-26.5 GHz, WSMA(f), 50 Ω, directivity = 37 dB (< 18 GHz), 36 dB (18 GHz)
560-98SF50-1	10 MHz-26.5 GHz, WSMA(f), 50 Ω, directivity = 40 dB (< 18 GHz), 38 dB (18 GHz)
560-98K50	10 MHz-40 GHz, K(m), 50 Ω, directivity = 35 dB (<18 GHz), 32 dB (18 to 26.5 GHz), 30 dB (26.5 GHz)
560-98KF50	10 MHz-40 GHz, K(f), 50 Ω, directivity = 35 dB (<18 GHz), 32 dB (18 to 26.5 GHz), 30 dB (26.5 GHz)
560-98VA50	10 MHz-50 GHz, V(m), 50 Ω, directivity = 36 dB (<20 GHz), 30 dB (20 GHz)
560-98VFA50	10 MHz-50 GHz, V(m), 50 Ω, directivity = 36 dB (<20 GHz), 30 dB (20 GHz)
	<b>Offset SWR Autotester</b>
560-97A50-20	10 MHz to 18 GHz, GPC-7, 20 dB offset reference in bridge
560-98KF50-15	10 MHz to 40 GHz, K(f), 15 dB offset reference in bridge