

SITE MASTER

S100/S200/S300/S400A/S800A Series

5 MHz to 20 GHz

For Analyzing Antenna Problems



Site Master is the instrument of choice for transmission line/antenna installation and maintenance. It is the best way to reduce maintenance expenses and improve quality. It replaces stacks of heavy, expensive, and complex test equipment. Site Master's frequency domain reflectometry technique allows it to find problems before they become catastrophic faults, thereby creating huge cost savings.

The Site Master is a precision, hand-held return loss/SWR and fault location measurement instrument. The Site Master series offers wide frequency coverage, from 5 MHz to 20 GHz. Built-in fault location, wattmeter, bias tee, and spectrum analysis capabilities are available. Light weight, rugged design, and wide temperature range make them ideal for field applications. Site Master's proprietary design provides immunity to RF interference, which is important for live site testing.

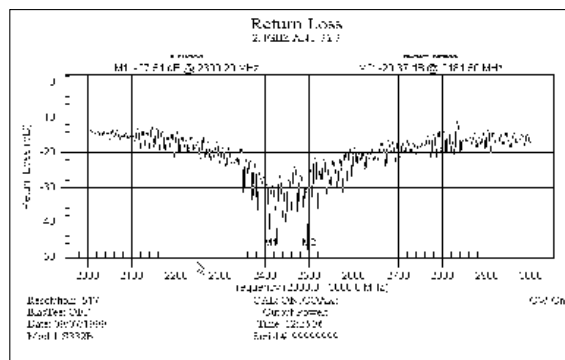
Site Master Software Tools is a Windows® compatible software program provided with every Site Master unit. This software program provides many useful features, including a database for Site Master measurements, Smith Chart display of S11, zoom capability, a "drag-n-drop" overlay for measurement comparison, the capability to download data to a PC, the capability to upload data such as custom cable list or traces to selected Site Master model, and distance-to-fault calculation from return loss or SWR plots. Advanced printing capabilities are provided by Site Master Software Tools including user definable plot scaling and a multiple plots per page option.

Site Master is the first test tool to provide the required accuracy, interference immunity, and repeatability for transmission line/antenna commissioning, and maintenance of today's wireless systems infrastructures.

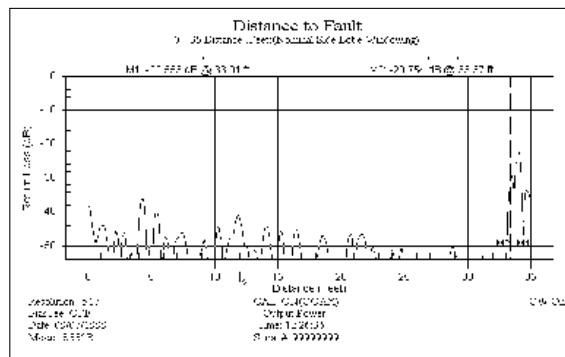
Features

- Accurate return loss/SWR measurements
- Built-in distance-to-fault
- Accurately tests RF transmission lines and antennas
- Immunity to live site RF interference
- Distance-to-fault windowing functions
- Insertion Loss/Gain (S251B only)
- Spectrum analysis (S114B and S332B only)
- Optional wattmeter
- Optional built-in bias tee (S251B only)
- Synthesizer accurate to 75 ppm
- Internal memory saves up to 200 traces
- Instrument configuration up to 10 configurations

- Alphanumeric trace naming ("B" version only)
- Time, Date stamp ("B" version only)
- Field replaceable battery ("B" version only)
- Segmented limit lines (S251B only)
- Trace overlay (S251B only)
- Direct printing via RS-232 serial port
- Remote operation via RS-232 serial port



Return loss



Distance-to-fault

Applications

Cellular, ISM, PCS/PCN, paging service, safety service, avionics, two-way radio, military, and microwave point-to-point radio.

Site Master allows implementation of preventative maintenance procedures. Unlike TDRs and spectrum analyzers/tracking generators, Site Master can spot RF degradation before failures occur. Problems can be fixed before expensive cables or waveguides are ruined.

Site Master is designed for field requirements. Its rugged construction survives rough field treatment. Battery power, light weight,

small size, wide temperature range, and simple user interface are exactly what field technicians want today. Technicians can test antennas from ground level because Site Master's distance-to-fault measurement compensates for cable insertion loss. Furthermore, spectrum analysis, available in certain Site Master models, allows technicians and field engineers to quickly identify and solve common RF system problems, such as coverage, interference, and other path related signal problems. Site Master offers a new and better method to install and maintain transmission lines and antennas.

Specifications*1

Model	S331A/S400A	S810A/S818A/S820A
Frequency range	25 to 3300 MHz (S331A) 25 to 4000 MHz (S400A)	3.3 to 10.5 GHz (S810A) 3.3 to 18.0 GHz (S818A) 3.3 to 20.0 GHz (S820A)
Frequency accuracy (CW mode)	75 ppm	
Frequency resolution	100 kHz	1 MHz
Immunity to interfering RF signals up to*2	-15 dBm	-10 dBm
Return loss	Range: 0 to 54 dB, Resolution: 0.01 dB	
SWR	Range: 1 to 65, Resolution: 0.01	
Cable/Waveguide Loss	Range: 0 to 20 dB, Resolution: 0.01 dB	
Distance-to-fault (S331A, S400A, S810A, S818A, S820A)	Vertical range Return loss: 0 to 54 dB SWR: 1 to 65 Horizontal range: 0 to 128 x (resolution) Horizontal resolution, rectangular windowing resolution (meter): Coax: $(1.5 \times 10^8)(\text{Up})/\Delta \text{ frequency}^{*3}$ Waveguide: $(1.5 \times 10^8)\sqrt{1-(F_c/F_1)^2}/\Delta \text{ frequency}^{*4}$	
Wattmeter (RF power monitor, Option 5)	Display range: -80 to +80 dBm, 10 pW to 100 kW Detector range: -50 to +20 dBm, 10 nW to 100 mW Offset range: 0 to +60 dB Resolution: 0.1 dB, 0.1 x W	
Trace memory	40 (S331A and S400A) 70 (S800A series)	
Instrument configuration	9 (S331A and S400A) 6 (S800A series)*5	
Calibration memory	2 (S331A and S400A) 6 (S800A series)*5	
Test port connector	Precision N female	
Maximum input without damage	N(f) test port: +22 dBm RF power detector: +20 dBm, 50 Ω	
Temperature	Operating: 0°C to 50°C Storage: -20°C to 75°C	
Weight	1.14 kg (2.5 lbs.) nom (S331A and S400A series) 1.36 kg (3.0 lbs.) nom (S800A series)	
Size	203.2 mm x 177.8 mm x 57.2 mm (8 in x 7 in x 2.25 in)	
General	Electromagnetic compatibility: Meets European community requirements for CE marking. RS232: 9-pin D-sub, three wire serial	

*1: All specifications apply when calibrated at ambient temperature after a five minute warm up.

*2: In most applications, immunity is typically better because interfering signals are modulated and varying in frequency rather than being CW. Measurements were made in CW mode by injecting a signal into the Site Master through a coupler.

*3: Where Up is the cable's relative propagation velocity. Δ frequency is the stop frequency minus the start frequency (in Hz). Wide frequency sweeps improve resolution but reduce maximum display range.

*4: Where F_c is the waveguide's cutoff frequency (in Hz) and F₁ is the start frequency (in Hz). Δ frequency is the stop frequency minus the start frequency (in Hz). Wide frequency sweeps improve resolution but reduce maximum display range.

*5: S800A series calibration stored with instrument configuration.

Specifications*1

Model	S251B	S113B/S331B	S114B/S332B
Frequency range	625 to 2500 MHz	5 to 1200 MHz (S113B) 25 to 3300 MHz (S331B)	5 to 1200 MHz (114B) 25 to 3300 MHz (S332B)
Frequency accuracy (CW mode)	75 ppm		
Frequency resolution	10 kHz		
Display data points	Selectable: 130, 259, 517		
Immunity to interfering RF signals up to ²	+10 dBm (Reflection) RF OUT +30 dBc (Transmission) RF IN	+10 dBm (S113B) -5 dBm (S331B)	+10 dBm (S114B) -5 dBm (S332B)
Return loss	Range: 0 to 54 dB; Resolution: 0.01 dB		
SWR	Range: 1 to 65; Resolution: 0.01		
Cable loss	Range: 0 to 20 dB; Resolution: 0.01 dB		
Insertion Loss/Gain S251B only	Display range: -120 to +100 dB Resolution: 0.1 dB	N/A	N/A
Distance-to-fault	Vertical range Return loss: 0 to 54 dB SWR: 1 to 65 Horizontal range (meter): 0 to (dp x resolution), where dp = 128, 256 or 512 Horizontal resolution, rectangular windowing resolution (meter): $(1.5 \times 10^8) (\text{Up}) / \Delta \text{frequency}^3$		
Wattmeter (RF power monitor, Option 5)	Display range: -80 to +80 dBm, 10 pW to 100 kW Detector range: -50 to +20 dBm, 10 nW to 100 mW Offset range: 0 to +60 dB Resolution: 0.1 dB		
Bias Tee (Option 10A) S251B only	+15 VDC, Surge: 275 mA maximum, 25 ms; Steady State: 240 mA maximum	N/A	N/A
Spectrum analysis			
Frequency range	N/A	N/A	100 kHz to 1200 MHz (S114B) 100 kHz to 3000 MHz (S332B)
Accuracy	N/A	N/A	± 2 ppm
Aging	N/A	N/A	± 1 ppm/yr
Frequency span	N/A	N/A	0 Hz (zero span), 100 kHz to full span
Resolution bandwidth	N/A	N/A	10 kHz, 30 kHz, 100 kHz, 1 MHz
Video Bandwidth	N/A	N/A	3 kHz, 10 kHz, 30 kHz, 300 kHz
Display datapoint	N/A	N/A	400
SSB Phase Noise @ (1 GHz) 30 kHz offset	N/A	N/A	≤ -74 dBc/Hz
Spurious responses (Input related)	N/A	N/A	< -70 dBm
Spurious responses (residual)	N/A	N/A	≤ -45 dBc
Dynamic range	N/A	N/A	≥ 60 dB
Average noise level	N/A	N/A	≤ -90 dBm (400 KHz span)
Measurement range	N/A	N/A	+20 dBm to -90 dBm
Display range	N/A	N/A	2 to 15 dB/div in 1 dB steps, 10 divisions display
Total level accuracy	N/A	N/A	± 2 dB
RF input VSWR	N/A	N/A	2.0:1
Trace memory	Up to 200		
Instrument configuration ⁴	10		
Test port connector	Precision N female		
Maximum input	RF OUT test port: +22 dBm RF IN test port: +10 dBm RF power detector: +20 dBm, 50 Ω RF IN Spectrum Analyzer port: +20 dBm safe input, +27 dBm damage level		
Temperature	Operating: 0°C to +50°C Storage: -20°C to +75°C		
Weight	1.82 kg (4.0 lbs.) nominal		
Size	25.4 cm x 17.8 cm x 6.1 cm (10 in x 7 in x 2.4 in)		
General	Electromagnetic compatibility: Meets European community requirements for CE marking. RS232: 9 pin D-sub, three wire serial		

*1: All specifications apply when calibrated at ambient temperature after a five minutes warm up.

*2: In most applications, immunity is typically better because interfering signals are modulated and varying in frequency rather than being CW. Measurements were made in CW mode by injecting a signal into the Site Master through a coupler.

*3: Where Up is the cable's relative propagation velocity. Δ frequency is the stop frequency minus the start frequency (in Hz). Wide frequency sweeps improve resolution but reduce maximum display range.

*4: Calibration stored with instrument configuration.

Ordering Information

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

Model/Order No.	Name
	Main frame
Model S331A	Site Master (25 to 3300 MHz), Built in DTF
Model S400A	Site Master (25 to 4000 MHz), Built in DTF
Model S810A	Site Master (3.3 to 10.5 GHz), Built in DTF
Model S818A	Site Master (3.3 to 18.0 GHz), Built in DTF
Model S820A	Site Master (3.3 to 20.0 GHz), Built in DTF
Model S113B	Site Master (5 to 1200 MHz), Built in DTF
Model S114B	Site Master (5 to 1200 MHz), Built in DTF, Spectrum Analysis
Model S251B	Site Master (625 to 2500 MHz), Built in DTF, 2-port
Model S331B	Site Master (25 to 3300 MHz), Built in DTF
Model S332B	Site Master (25 to 3300 MHz), Built in DTF, Spectrum Analysis
	Standard accessories
	User's Guide
	Soft Carrying Case
	AC-DC Adapter
	Automotive Cigarette Lighter/12 Volt DC Adapter
	One Year Warranty
	CD ROM containing Fault Location (DTF), Smith Chart, and Software Management Tools
	Serial Interface Cable
	Rechargeable battery, NiMH ("B" version only)
	Precision ruggedized K(m) to N(f) adapter (S820A only)
	Option
Option 5	RF Watt Meter Power Monitor (RF detector not included)
Option 10A	Built-in Bias Tee (240 mA) - S251B only
	Optional accessories
5400-71N50	RF Detector, N(m), 50 Ohm, 1 to 3000 MHz
560-7N50B	RF Detector, N(m), 50 Ohm, 10 MHz to 20 GHz
560-7K50	RF Detector, K(m), 50 Ohm, 10 MHz to 40 GHz
560-7VA50	RF Detector, V(m), 50 Ohm, 10 MHz to 50 GHz
IN50C	5W Limiter, N(m)-N(f), 18 GHz
22K50	Precision K(m) Short/Open, 40 GHz
22KF50	Precision K(f) Short/Open, 40 GHz
22N50	Precision N(m) Short/Open, 18 GHz
22NF50	Precision N(f) Short/Open, 18 GHz
SM/STS	Standard N(m) Short, 3.5 GHz
SM/STSNF	Standard N(f) Short, 3.5 GHz
SM/PL	Precision N(m) Load, 42 dB, 4.0 GHz
SM/PLNF	Precision N(f) Load, 42 dB, 4.0 GHz
SM/STL	Standard N(m) Load, 35 dB, 3.5 GHz
OSLN50LF	Precision N(m) Open/short/Load, 42 dB, 4.0 GHz
OSLNF50LF	Precision N(f) Open/short/Load, 42 dB, 4.0 GHz
28K50	Precision N(m) Load, 40 GHz
28KF50	Precision N(f) Load, 40 GHz
28N50-2	Precision N(m) Load, 40 dB, 18 GHz
28NF50-2	Precision N(f) Load, 40 dB, 18 GHz
2000-767	Precision Open/Short/Load, 7-16 (m), 3.5 GHz
2000-768	Precision Open/Short/Load, 7-16 (f), 3.5 GHz
15NN50-1.5A	Test port cable armored, 1.5 meter, N(m) to N(m), 3.5 GHz
15NN50-3.0A	Test port cable armored, 3.0 meter, N(m) to N(m), 3.5 GHz
15NN50-5.0A	Test port cable armored, 5.0 meter, N(m) to N(m), 3.5 GHz
15NNF50-1.5A	Test port cable armored, 1.5 meter, N(m) to N(f), 3.5 GHz
15NNF50-1.5B	Test port cable armored, 1.5 meter, N(m) to N(f), 18 GHz
15NNF50-1.5C	Test port cable armored, 1.5 meter, N(m) to N(f), 6.0 GHz
15NNF50-3.0A	Test port cable armored, 3.0 meter, N(m) to N(f), 3.5 GHz
15NNF50-3.0C	Test port cable armored, 3.0 meter, N(m) to N(f), 6.0 GHz
15NNF50-5.0A	Test port cable armored, 5.0 meter, N(m) to N(f), 3.5 GHz
15NNF50-5.0C	Test port cable armored, 5.0 meter, N(m) to N(f), 6.0 GHz
15KKF50-1.5A	Test port cable armored, 1.5 meter, K(m) to K(f), 26.5 GHz
15ND50-1.5A	Test port cable armored, 1.5 meter, N(m) to 7/16 (m), 3.5 GHz
15NDF50-1.5A	Test port cable armored, 1.5 meter, N(m) to 7/16 (f), 3.5 GHz
800-109	Detector extender cable, 7.6 m (25 ft.)
800-110	Detector extender cable, 15.2 m (50 ft.)
800-111	Detector extender cable, 30.5 m (100 ft.)
800-112	Detector extender cable, 61 m (200 ft.)
34NN50A	Precision N(m) to N(m) Adapter, 18 GHz
34NFN50	Precision N(f) to N(f) Adapter, 18 GHz
34RKNF50	Precision Ruggedized K(m) to N(f) Adapter, 20 GHz

Model/Order No.	Name
34RSN50	Precision Ruggedized WSMA(m) to N(m) Adapter, 20 GHz
K220B	Precision K(m)-K(m) Adapter, 40 GHz
K222B	Precision K(f)-K(f) Adapter, 40 GHz
1091-26	Adapter N(m) to SMA(m), 18 GHz
1091-27	Adapter N(m) to SMA(f), 18 GHz
510-90	Adapter 7-16(f) to N(m), 3.5 GHz
510-91	Adapter 7-16(f) to N(f), 3.5 GHz
510-92	Adapter 7-16(m) to N(m), 3.5 GHz
510-93	Adapter 7-16(m) to N(f), 3.5 GHz
510-96	Adapter 7/16 (m) to 7/16 (m), 3.5 GHz
510-97	Adapter 7/16 (f) to 7/16 (f), 3.5 GHz
D41955	Spare Soft Carrying Case
48258	Spare Soft Carrying Case for "B" version Site Master
40-115	Spare AC/DC Adapter
806-62	Spare Automotive Cigarette Lighter/12 Volts DC adapter
800-441	Spare Serial Interface Cable
760-213	Transit Case for S800 Series Site Master
760-215A	Transit Case for Site Master
633-27	Rechargeable battery, NiMH for "B" version Site Master
2300-347	Spare Site Master Software Tools
10580-00017	Spare Site Master S331A User's Guide
10580-00014	Spare Site Master S810A, S818A User's Guide
10580-00023	Spare Site Master S400A User's Guide
10580-00028	Spare Site Master User's Guide (S113B, S114B, S331B & S332B)
10580-00030	Spare Site Master S820A User's Guide
10580-00032	Spare Site Master User's Guide (S251B)
10580-00010	Site Master Programming Manual (for S110, S111, S112, S113, S330, S331, S300A, S331A, S400A)
10580-00015	Site Master Programming Manual (for S810A, S818A, S820A)
10580-00008	Site Master Maintenance Manual (for S331A)
10580-00035	Site Master Programming Manual (for S113B, S114B, S331B, S332B)
10580-00043	Site Master Programming Manual (for S251B)
10580-00022	Site Master Maintenance Manual (for S810A & S818A)
10580-00024	Site Master Maintenance Manual (for S400A)
10580-00029	Site Master Maintenance Manual (for S113B, S114B, S331B & S332B)
10580-00031	Site Master Maintenance Manual (for S820A)
10580-00033	Site Master Maintenance Manual (for S251B)
2000-766	HP DeskJet printer includes: serial-to-parallel interface cable, black print cartridge, and US power cable
2000-753	Spare serial-to-parallel converter cable
2000-661	Black print cartridge
2000-662	Rechargeable battery for DeskJet printer
2000-663	Power cable (Europe) for DeskJet printer
2000-664	Power cable (Australia) for DeskJet printer
2000-665	Power cable (UK) for DeskJet printer
2000-667	Power cable (So. Africa) for DeskJet printer
2000-1008	Seiko DPU-441-30BU thermal printer (120VAC) Includes: internal battery, thermal printer paper, serial cable, US power cable
2000-761	Seiko DPU-441-30BU thermal printer (220VAC) Includes: internal battery, thermal printer paper, serial cable, Euro power cable
2000-755	Five (5) rolls of thermal paper
2000-756	Spare serial 9-pin to 25-pin D-sub converter cable (Seiko DPU-411)
2000-1002	US Adapter (for Seiko DPU-41-30BU printer)
2000-1003	Europe Adapter (for Seiko DPU-41-30BU printer)
2000-1004	Battery pack (for Seiko DPU-41-30BU printer)
2000-1012	Spare serial 9-pin(m) to 9-pin (f) cable (for Seiko DPU-414-30BU printer)
2000-1029	Battery charger, NiMH for "B" version Site Master
2000-1030	Portable antenna, SMA (m) 1.71 to 1.88 GHz
2000-1031	Portable antenna, SMA (m) 1.85 to 1.99 GHz
2000-1032	Portable antenna, SMA (m) 2.4 to 2.5 GHz
2000-1034	Portable antenna, SMA (f) 806 to 869 MHz
2000-1035	Portable antenna, SMA (m) 902 to 960 MHz

Universal Waveguide Component Accessories

Part number	Description	Freq. range	Waveguide type	Compatible flanges
XXUM40	1/8, 3/8 λ Offset Short and Load, Metric	3.30 to 4.90 GHz	WR229, WG11A	PDR40
XXUM48	1/8, 3/8 λ Offset Short and Load, Metric	3.95 to 5.85 GHz	WR187, WG12	CAR48, PAR48, UAR48, PDR48
XXUM58	1/8, 3/8 λ Offset Short and Load, Metric	4.90 to 7.05 GHz	WR159, WG13	CAR58, PAR58, UAR58, PDR58
XXUM70	1/8, 3/8 λ Offset Short and Load, Metric	5.85 to 8.20 GHz	WR137, WG14	CAR70, PAR70, UAR 70, PDR70
XXUM84	1/8, 3/8 λ Offset Short and Load, Metric	7.05 to 10.00 GHz	WR112, WG15	CBR84, UBR84, PBR84, PDR84
XXUM100	1/8, 3/8 λ Offset Short and Load, Metric	8.20 to 12.40 GHz	WR90, WG16	CBR100, UBR100, PBR100, PDR100
XXUM120	1/8, 3/8 λ Offset Short and Load, Metric	10.00 to 15.00 GHz	WR75, WG17	CBR120, UBR120, PBR120, PDR120
XXUM140	1/8, 3/8 λ Offset Short and Load, Metric	12.40 to 18.00 GHz	WR62, WG18	CBR140, UBR140, PBR140, PDR140
XXUM220	1/8, 3/8 λ Offset Short and Load, Metric	17.00 to 26.50 GHz	WR42, WG20	CBR220, UBR220, PBR220, PDR220
XXUA229	1/8, 3/8 λ Offset Short and Load, US	3.30 to 4.90 GHz	WR229, WG11A	CPR229F, CPR229G, UG-1350/U, UG-1351/U, UG-1726/U, UG-1727/U
XXUA187	1/8, 3/8 λ Offset Short and Load, US	3.95 to 5.85 GHz	WR187, WG12	CPR187F, CPR187G, UG-1352/U, UG-1353/U, UG-1728/U, UG-1729/U, UG-148/U, UG-149A/U
XXUA159	1/8, 3/8 λ Offset Short and Load, US	4.90 to 7.05 GHz	WR159, WG13	CPR159F, CPR159G, UG-1354/U, UG-1355/U, UG-1730/U, UG-1731/U
XXUA137	1/8, 3/8 λ Offset Short and Load, US	5.85 to 8.20 GHz	WR137, WG14	CPR137F, CPR137G, UG-1356/U, UG-1357/U, UG-1732/U, UG-1733/U, UG-343B/U, UG-344/U, UG-440B/U, UG-441/U
XXUA112	1/8, 3/8 λ Offset Short and Load, US	7.05 to 10.00 GHz	WR112, WG15	CPR112F, CPR112G, UG-1358/U, UG-1359/U, UG-1734/U, UG-1735/U, UG-52B/U, UG-51/U, UG-137B/U, UG-138/U
XXUA90	1/8, 3/8 λ Offset Short and Load, US	8.20 to 12.40 GHz	WR90, WG16	CPR90F, CPR90G, UG-1360/U, UG-1361/U, UG-1736/U, UG-1737/U, UG-40B/U, UG-39/U, UG-135/U, UG-136B/U
XXUA75	1/8, 3/8 λ Offset Short and Load, US	10.00 to 15.00 GHz	WR75, WG17	WR75
XXUA62	1/8, 3/8 λ Offset Short and Load, US	12.40 to 18.00 GHz	WR62, WG18	UG-541A/U, UG-419/U, UG-1665/U, UG1666/U
XXUA42	1/8, 3/8 λ Offset Short and Load, US	17.00 to 26.50 GHz	WR42, WG20	UG-596A/U, UG-595/U, UG-597/U, UG-598A/U
XXCMR229	1/8, 3/8 λ Offset Short and Load, CMR	3.30 to 4.90 GHz	WR229, WG11A	CMR229
XXCMR187	1/8, 3/8 λ Offset Short and Load, CMR	3.95 to 5.85 GHz	WR187, WG12	CMR187, UG1475/U, UG1480/U
XXCMR159	1/8, 3/8 λ Offset Short and Load, CMR	4.90 to 7.05 GHz	WR159, WG13	CMR159
XXCMR137	1/8, 3/8 λ Offset Short and Load, CMR	5.85 to 8.20 GHz	WR137, WG14	CMR137, UG1476/U, UG1481/U
XXCMR112	1/8, 3/8 λ Offset Short and Load, CMR	7.05 to 10.00 GHz	WR112, WG15	CMR112, UG1477/U, UG1482/U
XXCMR90	1/8, 3/8 λ Offset Short and Load, CMR	8.20 to 12.40 GHz	WR90, WG16	CMR90, UG1478/U, UG1483/U
XXUER40	1/8, 3/8 λ Offset Short and Load, UER	3.30 to 4.90 GHz	WR229, WG11A	UER40
XXUER48	1/8, 3/8 λ Offset Short and Load, UER	3.95 to 5.85 GHz	WR187, WG12	UER48
XXUER58	1/8, 3/8 λ Offset Short and Load, UER	4.90 to 7.05 GHz	WR159, WG13	UER58
XXUER70	1/8, 3/8 λ Offset Short and Load, UER	5.85 to 8.20 GHz	WR137, WG14	UER70
XXUER84	1/8, 3/8 λ Offset Short and Load, UER	7.05 to 10.00 GHz	WR112, WG15	UER84
XXUER100	1/8, 3/8 λ Offset Short and Load, UER	8.20 to 12.40 GHz	WR90, WG16	UER100

Precision waveguide calibration components

Note: Part number Ordering information
 Prefix (XX) - 23 for 1/8 λ offset short
 - 24 for 3/8 λ offset short
 - 26 for Precision waveguide load

Part number	Description	Freq range	Waveguide type	Compatible flanges
35UM40N	Coaxial Adapter, N(m), Metric	3.30 to 4.90 GHz	WR229, WG11A	PDR40
35UM48N	Coaxial Adapter, N(m), Metric	3.95 to 5.85 GHz	WR187, WG12	CAR48, PAR48, UAR48, PDR48
35UM58N	Coaxial Adapter, N(m), Metric	4.90 to 7.05 GHz	WR159, WG13	CAR58, PAR58, UAR58, PDR58
35UM70N	Coaxial Adapter, N(m), Metric	5.85 to 8.20 GHz	WR137, WG14	CAR70, PAR70, UAR 70, PDR70
35UM84N	Coaxial Adapter, N(m), Metric	7.05 to 10.00 GHz	WR112, WG15	CBR84, UBR84, PBR84, PDR84
35UM100N	Coaxial Adapter, N(m), Metric	8.20 to 12.40 GHz	WR90, WG16	CBR100, UBR100, PBR100, PDR100
35UM120N	Coaxial Adapter, N(m), Metric	10.00 to 15.00 GHz	WR75, WG17	CBR120, UBR120, PBR120, PDR120
35UM140N	Coaxial Adapter, N(m), Metric	12.40 to 18.00 GHz	WR62, WG18	CBR140, UBR140, PBR140, PDR140
35UM220K	Coaxial Adapter, K(m), Metric	17.00 to 26.50 GHz	WR42, WG20	CBR220, UBR220, PBR220, PDR220
35UA229N	Coaxial Adapter, N(m), US	3.30 to 4.90 GHz	WR229, WG11A	CPR229F, CPR229G, UG-1350/U, UG-1351/U, UG-1726/U, UG-1727/U
35UA187N	Coaxial Adapter, N(m),US	3.95 to 5.85 GHz	WR187, WG12	CPR187F, CPR187G, UG-1352/U, UG-1353/U, UG-1728/U, UG-1729/U, UG-148/U, UG-149A/U
35UA159N	Coaxial Adapter, N(m), US	4.90 to 7.05 GHz	WR159, WG13	CPR159F, CPR159G, UG-1354/U, UG-1355/U, UG-1730/U, UG-1731/U
35UA137N	Coaxial Adapter, N(m), US	5.85 to 8.20 GHz	WR137, WG14	CPR137F, CPR137G, UG-1356/U, UG-1357/U, UG-1732/U, UG-1733/U, UG-343B/U, UG-344/U, UG-440B/U, UG-441/U
35UA112N	Coaxial Adapter, N(m),US	7.05 to 10.00 GHz	WR112, WG15	CPR112F, CPR112G, UG-1358/U, UG-1359/U, UG-1734/U, UG-1735/U, UG-52B/U, UG-51/U, UG-137B/U, UG-138/U
35UA90N	Coaxial Adapter, N(m),US	8.20 to 12.40 GHz	WR90, WG16	CPR90F, CPR90G, UG-1360/U, UG-1361/U, UG-1736/U, UG-1737/U, UG-40B/U, UG-39/U, UG-135/U, UG-136B/U
35UA75N	Coaxial Adapter, N(m), US	10.00 to 15.00 GHz	WR75, WG17	WR75
35UA62N	Coaxial Adapter, N(m), US	12.40 to 18.00 GHz	WR62, WG18	UG-541A/U, UG-419/U, UG-1665/U, UG1666/U
35UA42K	Coaxial Adapter, K(m), US	17.00 to 26.50 GHz	WR42, WG20	UG-596A/U, UG-595/U, UG-597/U, UG-598A/U
35CMR229N	Coaxial Adapter, N(m), CMR	3.30 to 4.90 GHz	WR229, WG11A	CMR229
35CMR187N	Coaxial Adapter, N(m), CMR	3.95 to 5.85 GHz	WR187, WG12	CMR187, UG1475/U, UG1480/U
35CMR159N	Coaxial Adapter, N(m), CMR	4.90 to 7.05 GHz	WR159, WG13	CMR159
35CMR137N	Coaxial Adapter, N(m), CMR	5.85 to 8.20 GHz	WR137, WG14	CMR137, UG1476/U, UG1481/U
35CMR112N	Coaxial Adapter, N(m), CMR	7.05 to 10.00 GHz	WR112, WG15	CMR112, UG1477/U, UG1482/U
35CMR90N	Coaxial Adapter, N(m), CMR	8.2 to 12.4 GHz	WR90, WG16	CMR90, UG1478/U, UG1483/U
35UER40N	Coaxial Adapter, N(m), UER	3.30 to 4.90 GHz	WR229, WG11A	UER40
35UER48N	Coaxial Adapter, N(m), UER	3.95 to 5.85 GHz	WR187, WG12	UER48
35UER58N	Coaxial Adapter, N(m), UER	4.90 to 7.05 GHz	WR159, WG13	UER58
35UER70N	Coaxial Adapter, N(m), UER	5.85 to 8.20 GHz	WR137, WG14	UER70
35UER84N	Coaxial Adapter, N(m), UER	7.05 to 10.00 GHz	WR112, WG15	UER84
35UER100N	Coaxial Adapter, N(m) UER	8.2 to 12.4 GHz	WR90, WG16	UER100

Precision waveguide-to-coaxial adapters