Test Equipment Solutions Datasheet

Test Equipment Solutions Ltd specialise in the second user sale, rental and distribution of quality test & measurement (T&M) equipment. We stock all major equipment types such as Spectrum Analyzers, Signal Generators, Oscilloscopes, Power Meters, Network Analyzers etc from all the major suppliers such as Keysight, Tektronix, Anritsu and Rohde & Schwarz.

We are focused at the professional end of the marketplace, primarily working with customers for whom high performance, quality and service are key, whilst realising the cost savings that second user equipment offers. We fully test & refurbish equipment in our in-house, traceable Lab. Items are supplied with manuals, accessories and typically a full no-quibble 1 year warranty. Our staff have extensive backgrounds in T&M which enables us to deliver industry-leading service and support. We endeavour to be customer focused in every way right down to the detail, such as offering free delivery on sales, presenting flexible technical + commercial solutions and supplying a loan unit during warranty repair, if available.

As well as the headline benefit of cost saving, second user offers shorter lead times, higher reliability and multivendor solutions. Rental, of course, is ideal for shorter term needs and offers fast delivery, flexibility, try-before-you-buy, zero capital expenditure, lower risk and off balance sheet accounting. Both second user and rental improve the key business measure of Return On Capital Employed.

We are based in at Oakley, Bedfordshire in the UK from where we supply test equipment worldwide. Our facility incorporates Sales, Support, Admin, Logistics and our own in-house Lab.

All products supplied by Test Equipment Solutions include:

- No-quibble parts & labour warranty (we provide transport for UK mainland addresses).
- Free loan equipment during warranty repair, if available.
- Full electrical, mechanical and safety refurbishment in our 40GHz in-house Lab.
- Certificate of Conformance (calibration available on request).
- Manuals and accessories required for normal operation.
- Free insured delivery to your UK mainland address (sales).
- Support from our team of seasoned Test & Measurement engineers.
- ISO9001 quality assurance.

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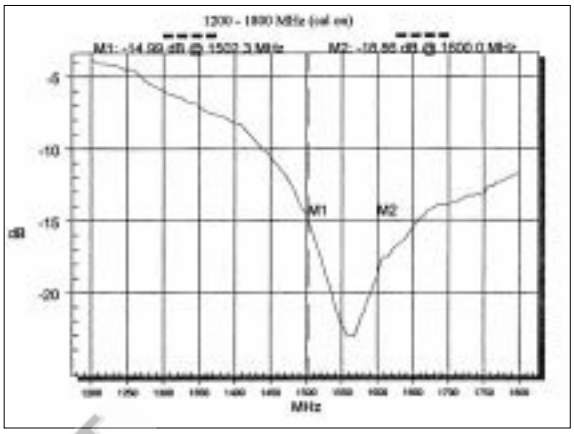
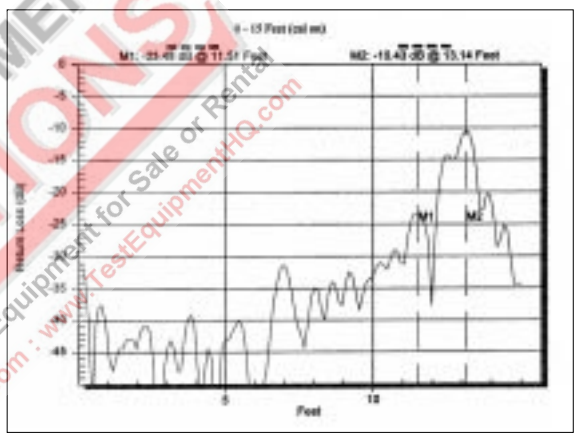
SITE MASTER
S100/S200A/S300A series
5 to 3300 MHz



Return loss



Distance-to-fault

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 a huge cost savings.
The Site Master is a precision, hand-held return loss/SWR and fault location measurement instrument. Site Master series offers a wide frequency coverage with products covering 5 to 3300 MHz. Built-in fault location and wattmeter capabilities are available. Light weight, rugged design and wide temperature range make it 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 S_{11}, "drag-n-drop" overlay for measurement comparison, capability to download data to a PC 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, S113, S331A, S120A, S235A and S250A only
- Accurately tests RF transmission lines and antennas
- Immunity to live site RF interference
- Distance-to-fault windowing functions
- Insertion Loss/Gain
- Optional wattmeter
- Synthesizer accurate to 75 ppm
- Internal memory saves up to 50 traces
- Direct printing via RS-232 serial port
- Remote operation via RS-232 serial port

Applications
Cellular, ISM, PCS/PCN and paging service, Safety service, Avionics, Two-way radio, Military

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 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. Site Master offers a new and better method to install and maintain cables and antennas.

Specifications*1

Model	S120A/S235A/S250A	S112/S113	S330A/S331A
Frequency range	600 to 1200 MHz (S120A) 1250 to 2350 MHz (S235A) 1750 to 2500 MHz	5 to 1000 MHz (S112) 5 to 1200 MHz (S113)	700 to 3300 MHz (S330A) 25 to 3300 MHz (S331A)
Frequency accuracy (CW mode)	75 ppm		
Frequency resolution	100 kHz	10 kHz	100 kHz
Immunity to interfering RF signals up to*2	+10 dBm, Reflection +30 dBc, Transmission	+10 dBm	–15 dBm
Return loss	Range: 0 to 54 dB, Resolution: 0.01 dB		
SWR	Range: 1 to 65, Resolution: 0.01		
Insertion Loss/Gain	Display range: –120 to 100.0 dB Resolution: 0.1 dB (S120A, S235A)		
Distance-to-fault (S113, S120A, S235A, S331)	Vertical range Return loss: 0 to 54 dB SWR: 1 to 65 Horizontal range: 0 to 128X (resolution) Horizontal resolution, rectangular windowing resolution : 1.5 x 10^8 (υp/Δ 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, 0.1 xW		
Cable loss	Range: 0 to 20 dB, Resolution: 0.01 dB		
Test port connector	Precision N female		
Maximum input without damage	N(f) test port: +22 dBm RF power detector: +20 dBm, 50 Ω		
General	Electromagnetic compatibility: Meets European community requirements for CE marking. Temperature: 0˚ to 50˚C (operating), –20˚ to 75˚C (storage) Weight: 2.2 lbs. Mass: 8 x 7 x 2.25 inches		

*1: All specifications apply when calibrated at ambient temperature after a five minute warm up.
*2: Immunity performance is represented for a typical worst-case condition. Measurements were made in CW mode by injecting a signal into the Site Master through a coupler with the same signal injected through the coupled arm. In field applications, signals are modulated and varying in frequency rather than CW. Immunity is typically better when swept frequencies are used.
*3: Where υp is the cable's relative propagation velocity. Wide frequency sweeps improve resolution but reduce maximum display range.

Ordering Information

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

Model/Order No.	Name
	Main frame
S112	Site Master (5 to 1000 MHz)
S113	Site Master (5 to 1200 MHz, built-in DTF)
S120A	Site Master (600 to 1200 MHz, built-in DTF)
S235A	Site Master (1250 to 2350 MHz, built-in DTF)
S250A	Site Master (1750 to 2500 MHz, built-in DTF)
S330A	Site Master (700 to 3300 MHz)
S331A	Site Master (25 to 3300 MHz, built-in DTF)
	Standard accessories
	Operating manual Soft carrying case AC-DC adapter Automotive cigarette lighter/12 Volt DC adapter One year warranty 3.5 inch floppy disk containing fault location (DTF), Smith chart and software management tools Serial interface cable
	Options
Option 5	RF watt meter power monitor (RF detector not included)
	Optional accessories
5400-71N50	RF detector (1 to 3000 MHz)
1N50C	5W Limiter, N (m)-N (f), 18 GHz
22N50	Precision N (m) Open/Short, 18 GHz
22NF50	Precision N (f) Open/Short, 18 GHz
SM/PLNF	Precision N (f) load, 42 dB, 3.5 GHz
SM/PL	Precision N (m) load, 42 dB, 3.5 GHz
15NNF50-1.5A	Test port cable armored, 1.5 meter, 3.5 GHz
15NNF50-3.0A	Test port cable armored, 3.0 meter, 3.5 GHz
15NNF50-5.0A	Test port cable armored, 5.0 meter, 3.5 GHz
34NN50A	Precision N (m)-N (m) Adapter, 18 GHz
34NFNF50	Precision N(f)-N (f) Adapter, 18 GHz
2000-767	Precision open/short/load, 7/16 (m), DC to 3.5 GHz
2000-768	Precision open/short/load, 7/16 (f), DC to 3.5 GHz

Model/Order No.	Name
510-90	Adapter, 7/16 (f)-N (m), 3.5 GHz
510-91	Adapter, 7/16 (f)-N (f), 3.5 GHz
510-92	Adapter, 7/16 (m)-N (m), 3.5 GHz
510-93	Adapter, 7/16 (m)-N (f), 3.5 GHz
SM/STS	Standard N Type Short, 3.5GHz
D41955	Spare Soft Carrying Case
40-74	Spare AC-DC adapter
806-62	Spare automotive 12 Volt adapter
800-441	Spare serial interface cable
760-194A	Transit case for site master
12N75B	50W to 75W Adapter DC-3GHz
10580-00007	Spare site master S330A, S331A user's guide
10580-00009	Spare site master S112, S113 user's guide
10580-00016	Site master S120A, S235A User's guide
10580-00008	Spare site master II/III maintenance manual
2000-766	Desk-jet printer includes: Interface cable, black print cartridge, and U.S. power cable
2000-753	Spare serial-to-parallel converter cable
2000-661	Black print cartridge
2000-662	Rechargeable battery for desk-jet printer
2000-663	Power cable (Europe) for desk-jet printer
2000-664	Power cable (Australia) for desk-jet printer
2000-665	Power cable (U.K.) for desk-jet printer
2000-667	Power cable (So. Africa) for desk-jet printer
2000-754	Seiko DPU-411-21BU (120VAC) includes: Thermal printer with internal battery, thermal printer paper, serial cable, and U.S. power cable
2000-761	Seiko DPU-411-21BE (220VAC) includes: Thermal printer with internal battery, thermal printer paper, serial cable, and Euro power cable
2000-756	Spare serial 9 pin to 25 pin D-sub cable
2000-755	Five (5) rolls of thermal paper