

HANDHELD SPECTRUM ANALYZER

MS2711

100 kHz to 3.0 GHz

**Fast, Repeatable, Portable
Spectrum Analysis**

NEW



Designed for field environments and applications requiring mobility, the MS2711 features easy-to-use, accurate performance in a light weight (4.0 lbs, 1.8 kg), battery operated unit covering the 100 kHz to 3000 MHz frequency range. Ideal for field/mobility use, the MS2711 satisfies spectrum analysis needs in cellular, DCS/PCS, paging/messaging, WLAN/WPBX, and many other communications system applications – anywhere, anytime.

Utilizing an advanced synthesizer-based design, the MS2711 delivers accurate, reliable, and repeatable measurements – *anywhere, everytime*. A broad range of functions, coupled with resolution bandwidths ranging from 10 kHz to 1 MHz, simplifies identification of interfering signals in modern wireless systems. Rugged packaging keeps the MS2711 operating in harsh environments and allows it to withstand rough handling.

The MS2711 simplifies the process of making spectrum analyzer measurements and interpreting the results. As a result, it simplifies field engineers' and technicians' jobs of going site-to-site identifying, recording, and solving problems without sacrificing measurement accuracy. Users are able to store ten test setups along with 200 measurement traces internally in the unit's non-volatile memory. Stored data can be easily downloaded to a personal computer (PC) or a printer via an RS-232 serial cable for further analysis. A notebook computer can be used with the RS-232 interface for automated control and data collection in the field. Additionally, a modem can be used for remote operation.

Reporting software for PC use is Windows® 95/98, NT Workstation compatible and supports long file names for descriptive data labeling. The software can display an unlimited number of data traces for

comparison to historical performance. Data traces can be easily and quickly downloaded from the MS2711 to the PC database with a single menu selection.

A number of options are available that expand the MS2711's capabilities, including an internal tracking generator (option 20) and an internal RF Power monitor (option 5).

Features

- Lightweight (4.0 lbs)
- Synthesizer-based performance
- Full range of marker capabilities including peak, center, and delta functions
- Limit lines for quick, simple pass/fail measurements
- Rugged, reliable packaging
- Battery operated design
 - 2.5 hours of continuous operation
 - Built-in energy conservation that extends battery life beyond an eight-hour workday
 - Operation using a 12.5 Vdc source AC-DC adapter or automotive cigarette lighter adapter, which simultaneously charges the battery
 - Field replaceable battery
- Data storage and memory
 - Store up to ten test setups and 200 measurement traces in non-volatile memory
 - Stored data is easily and quickly downloaded to a personal computer (PC) or printer
- Powerful trace management
 - Automatically date/time stamped
 - Alphanumeric labeling
- PC reporting software
 - Windows® 95/98, NT Workstation compatible
 - Supports long file names for descriptive labeling
 - Can display an unlimited number of traces for comparison to historical performance
- Large, high resolution VGA display (640x480)
- Tracking generator option
- Power monitor option
- Direct printer control via RS232 serial port

Applications

Convenient operating procedures, high sensitivity, and excellent repeatability enable the MS2711 to pinpoint the smallest system performance degradation and allow for easy verification of system compliance. Typical applications include

- Transmitter Spectrum Analysis – occupied bandwidth, power, modulation, and antenna gain/isolation measurements
- Receive Signal Analysis – location and identification of receive in-band interference and out-of-band spurious signals
- Modulation identification, modulation depth, deviation, and spectral mask
- Signal Strength Mapping – to determine the most suitable location for antennas, base stations, and repeaters
- Stimulus-response measurements – for component test

Specifications

Except where noted otherwise, specified values are obtained after warming up the Anritsu MS2711 Handheld Spectrum Analyzer for 5 minutes at a constant ambient temperature. The typical values are given for reference and are not guaranteed.

Frequency	Frequency range	100 kHz to 3.0 GHz
	Frequency reference	Aging: ± 1 ppm/yr Accuracy: ± 2 ppm
	Frequency span	100 kHz to 3 GHz plus zero span
	Sweep time	0.5 sec.
	Resolution bandwidth (-3dB width)	10 kHz, 30 kHz, 100 kHz, 1 MHz, $\pm 20\%$
	Video bandwidth (Range -3dB)	3 kHz, 10 kHz, 30 kHz and 300 kHz
	SSB Phase Noise @30 kHz Offset	≤ -74 dBc/Hz
	Spurious responses	Input related: ≤ -45 dBc
	Residual responses	≤ -80 dBm
Amplitude	Measurement range	-90 dBm to +20 dBm
	Dynamic range	≥ 60 dB
	Maximum safe input level	+20 dBm max. measurable safe input +50 Vdc
	Displayed average noise level	≤ -90 dBm
	Display range	2 to 15 dB/div. In 1 dB steps Ten divisions displayed
	RF input VSWR	2.0:1
	Amplitude accuracy	± 1.5 dB
	Total level accuracy	± 2 dB
General	Internal trace memory	200 maximum
	Instrument configuration	10 setup locations
	RS-232	9 pin D-sub, three wire serial
	Electromagnetic compatibility	Meets European community requirements for CE marking
	Temperature	Operating: 0°C to 50°C, humidity 85% or less Non-operating: -20°C to +75°C
	Power supply	External DC Input: +12.5 to +15 volts dc, 1100 mA max
	Size	25.4 cm (W) 17.8 cm (H) x 6.10 cm (D) 10.0 in (W) x 7.0 in (H) x 2.4 in (D)
Weight	1.82 kg (4 lbs.) includes battery	

Ordering Information

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

Model/Order No.	Name
MS2711	HandHeld Spectrum Analyzer: 100 kHz to 3000 MHz
	Standard Accessories
	User's Guide
	Soft Carrying Case
	AC – DC Adapter
	Automotive Cigarette Lighter/12 Volt DC Adapter
	One Year Warranty
	CD ROM containing Software Management Tools
	Serial Interface Cable
	Optional Accessories
	RF Watt Meter Power Monitor (RF Detector not included)
	Tracking Generator, 50 Ohm
Option 5	RF Detector, N(m), 50 Ohm, 1 to 3000 MHz
Option 20	30 dB, 50 Watt, Bi-directional, DC to 18 GHz, N(m) to N(f) Attenuator
5400-71N50	Adapter, DC to 18 GHz, 50 Ohm, N(m) to SMA(m)
42N50A-30	Adapter, DC to 18 GHz, 50 Ohm, N(m) to SMA(f)
1091-26	Adapter, DC to 1.3 GHz, 50 Ohm, N(m) to BNC(f)
1091-27	Precision Adapter, DC to 18 GHz, 50 Ohm, N(m) to N(m)
1091-172	Precision Adapter, DC to 18 GHz, 50 Ohm, N(f) to N(f)
34NN50A	Test port cable armored, 1.5 meter, N(m) to N(m), 3.5 GHz
34NNF50A	Test port cable armored, 3.0 meter, N(m) to N(m), 3.5 GHz
15NN50-1.5A	Test port cable armored, 5.0 meter, N(m) to N(m), 3.5 GHz
15NN50-3.0A	Test port cable armored, 1.5 meter, N(m) to N(f), 3.5 GHz
15NN50-5.0A	Test port cable armored, 3.0 meter, N(m) to N(f), 3.5 GHz
15NNF50-1.5A	Test port cable armored, 5.0 meter, N(m) to N(f), 3.5 GHz
15NNF50-3.0A	Test port cable armored, 1.5 meter, N(m) to 7/16 DIN(m), 3.5 GHz
15NNF50-5.0A	Test port cable armored, 1.5 meter, N(m) to 7/16 DIN(f), 3.5 GHz
15ND50-1.5A	Detector extender cable, 7.6 m (25 ft.)
15NDF50-1.5A	Detector extender cable, 15.2 m (50 ft.)
800-109	Detector extender cable, 30.5 m (100 ft.)
800-110	Detector extender cable, 61 m (200 ft.)
800-111	Adapter 7/16 (f) to N(m), 3.5 GHz
800-112	Adapter 7/16 DIN (m) to 7/16 DIN (m), 3.5 GHz
510-90	Adapter 7/16 DIN (f) to 7/16 DIN (f), 3.5 GHz
510-96	Spare soft carrying case
510-97	Spare AC/DC adapter
48258	Spare automotive cigarette lighter/12 Volt DC adapter
40-115	Spare serial interface cable
806-62	Transit case for Anritsu HandHeld Spectrum Analyzer
800-441	Anritsu HandHeld Spectrum Analyzer Software Tools
760-215A	Anritsu HHSA User's Guide, Model MS2711A (spare)
2300-347	Anritsu HHSA Maintenance Manual
10580-0026	Anritsu HHSA Programming Manual
10580-0027	Rechargeable battery, NiMH
10580-00036	Battery charger, NiMH with universal power supply
633-27	Portable antenna, 50 Ohm, SMA (m) 1.71-1.88 GHz
2000-1029	Portable antenna, 50 Ohm, SMA (m) 1.85-1.99 GHz
2000-1030	Portable antenna, 50 Ohm, SMA (m) 12.4-2.5 GHz
2000-1031	Portable antenna, 50 Ohm, SMA (f) 806-869 MHz
2000-1032	Portable antenna, 50 Ohm, SMA (m) 902-960 MHz
2000-1034	
2000-1035	

Model/Order No.	Name
	Printers
2000-766	HP DeskJet printer Includes: 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
2000-754	Sieko DPU-414-30B thermal printer (120 VAC) Includes: internal battery, thermal printer paper, serial cable, US power cable
2000-761	Sieko DPU-414-30B thermal printer (220 VAC) Includes: internal battery, thermal printer paper, serial cable, Euro power cable
2000-1012	Serial 9-pin (male) for 9-pin (female) cable
2000-755	Five (5) rolls of thermal paper