# MS2711B

## Handheld Spectrum Analyzer
## 100 kHz to 3.0 GHz

*Anritsu*



*Spectrum Analysis – Anywhere, Anytime*

# THE LEADING PORTABLE SPECTRUM ANALYZER FOR WIRELESS PROFESSIONALS

## SPECTRUM ANALYSIS – ANYWHERE, ANYTIME

The MS2711B Handheld Spectrum Analyzer provides the "ultimate" in measurement flexibility for field environments and applications requiring mobility. Unlike traditional spectrum analyzers, the MS2711B features a rugged, ultra-lightweight, battery-operated design that enables users to conduct spectrum analysis measurements – *anywhere, anytime*.

Providing complete freedom from AC/DC power require-ments, the MS2711B enables you to locate, identify, record and solve communication systems problems quickly and easily, without sacrificing measurement accuracy.

Whether you are installing, maintaining, or troubleshooting a modern wireless communication system, the MS2711B provides exceptional performance combined with ease-of-use and broad functionality – making it an ideal solution for engineers and technicians who conduct field measurements in the 100 kHz to 3.0 GHz frequency range.

### The Lightest Spectrum Analyzer Available
Weighing only 4.9 lbs. (2.2 kg), the MS2711B is the lightest, fully functional spectrum analyzer available.

### Easy-to-Use
Operation is straight-forward and driven by firmware that simplifies the process of making measurements and interpreting the results shown on the large, high-resolution LCD display. The menu-driven user interface is easy to use and requires little training.

- Frequency, span and amplitude functions are easily configured for optimum performance.
- Full range of marker and limit line functions facilitate quick comprehensive measurements.
- Store ten test setups for fast repeatable testing.
- Store up to 200 measurement traces internally.
- Multilingual user interface features on screen menus and messages in 6 different languages.

### Rugged and Reliable
Designed specifically for field environments, the MS2711B handheld spectrum analyzer can easily withstand harsh environments and the rough day-to-day handling of field use.

- Rugged field proven design
- Lightweight NiMH battery operates continuously for over two hours on a single charge.
- Built-in energy conservation features allow battery life to be extended beyond an eight-hour workday.
- Can also be operated from a 12.5 Vdc source such as an AC-DC adapter or automotive cigarette lighter adapter that also simultaneously charges the battery.



### Accurate
Utilizing an advanced synthesizer-based design, the MS2711B delivers accurate, reliable and repeatable measurements – *anywhere, every time*.

A broad range of functions coupled with narrow resolution bandwidths down to 10 kHz make it ideal for finding the source of interfering signals in modern wireless systems.

### Powerful Data Analysis Software
Powerful data analysis software comes with every MS2711B unit, providing users with an easy method of analyzing system performance, trends and problems, in addition to professional report generation.

- PC software is Windows 95/98/NT4/2000/ME/XP workstation compatible and supports long alpha-numeric file names for descriptive data labeling.
- Store an unlimited number of data traces for comparison to historical performance.
- Quickly and easily download data traces from the MS2711B to a PC database with a single menu selection.

# The Picture is Actual Size . . .

**RS-232 Interface**
Download stored data
to a personal computer
(PC) or a printer via a
serial cable for further analysis.
Use your notebook computer
to automatically control and
collect data in the field. Use
a modem for remote operation.

**Large High Resolution Display**
High resolution (640x480)
display featuring contrast
and back-lighting capability.
Easy viewing under a variety
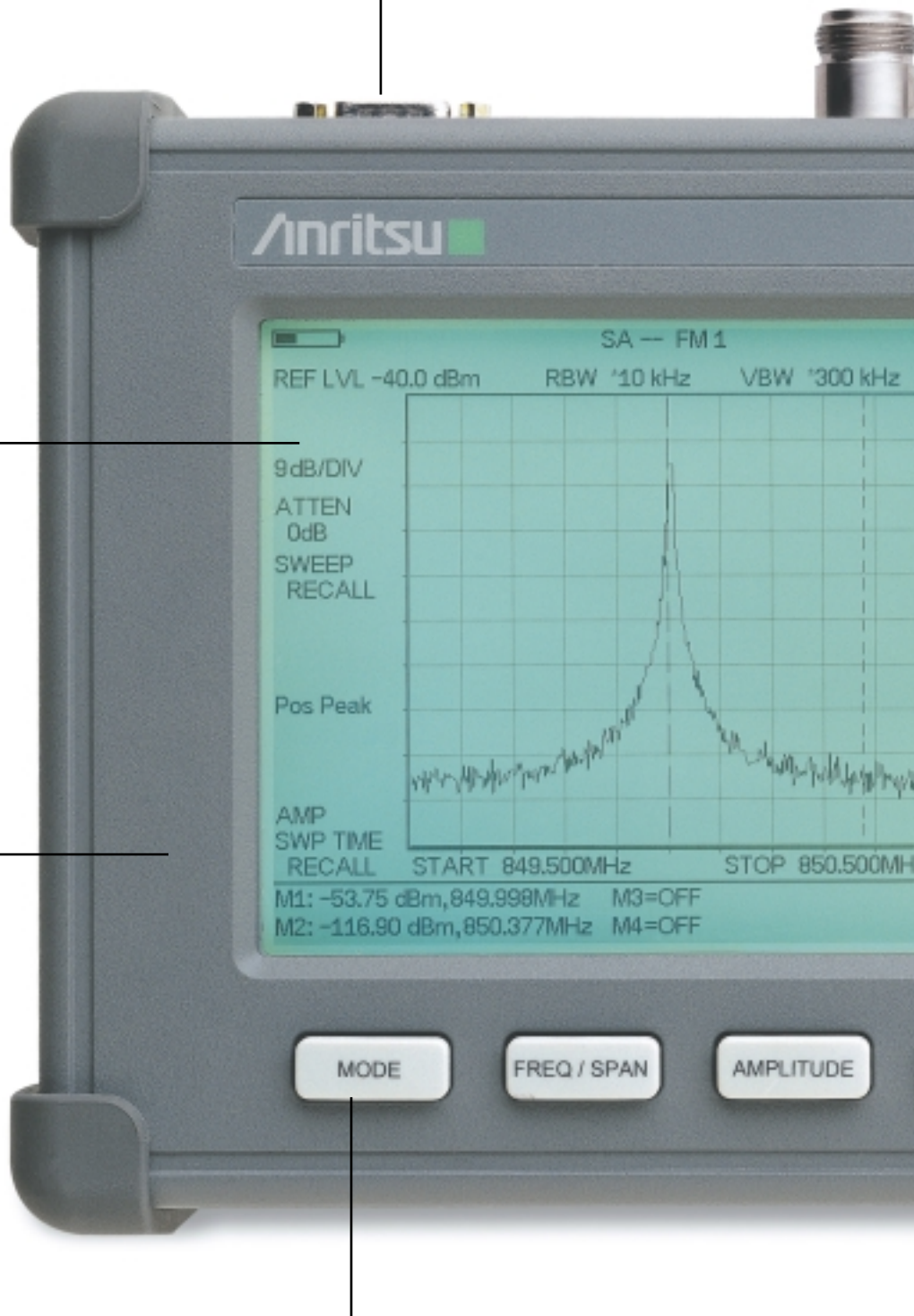of conditions.

**Rugged Chassis Design**
Ruggedized, lightweight,
high-impact housing ideally
suited for handheld operation
and field environments.
A softcase is provided for easy
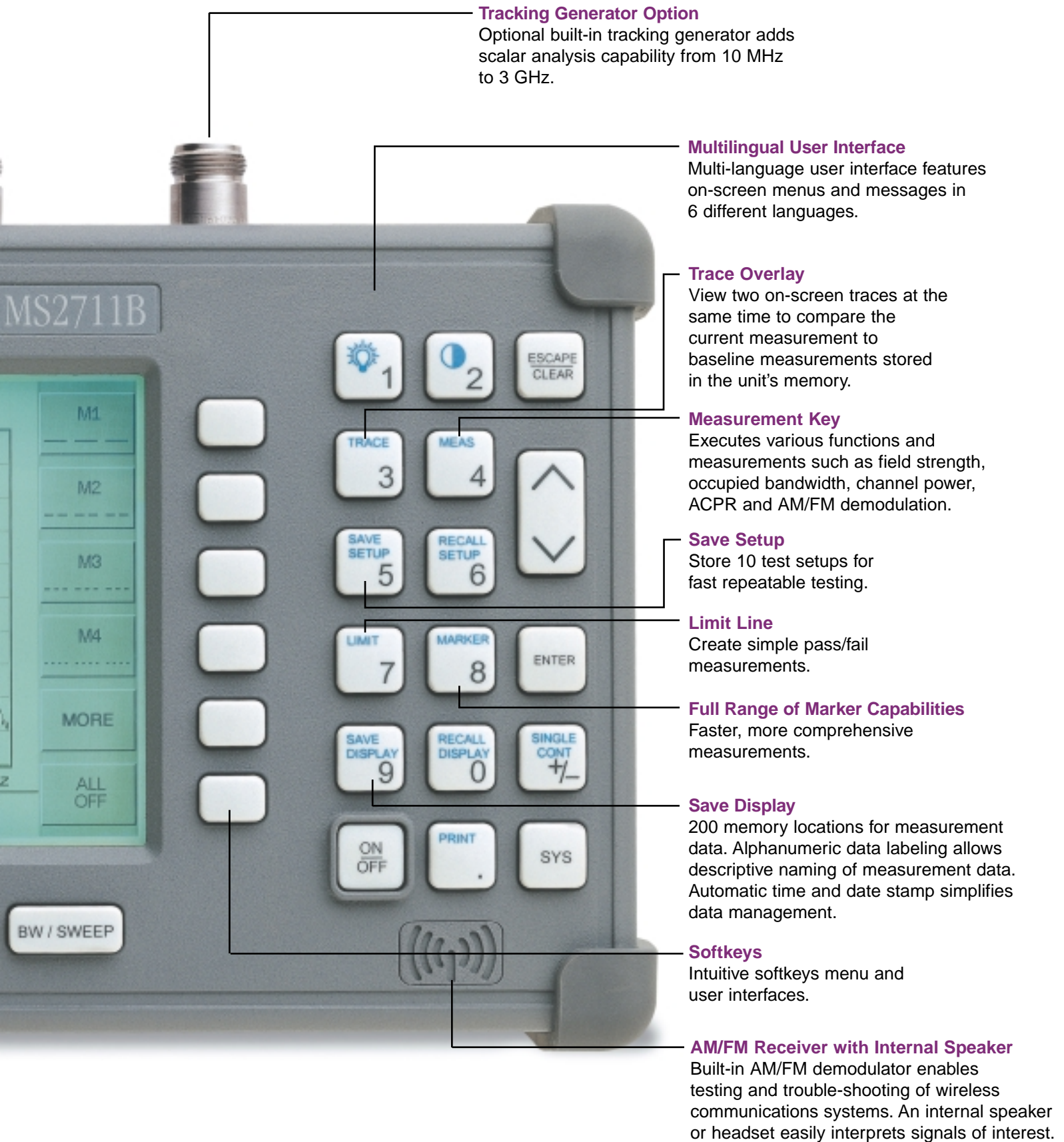carrying and additional
environment protection.

**Unit Measurements**
Metric: 25.4 x 17.8 x 6.10 cm
Inches: 10 x 7 x 2.4 in.

**Function Keys**
Four dedicated function keys simplify
measurement tasks.



*Display shown:*

SA — FM 1
REF LVL −40.0 dBm    RBW '10 kHz    VBW '300 kHz
9 dB/DIV
ATTEN
0dB
SWEEP
RECALL
Pos Peak
AMP
SWP TIME
RECALL    START 849.500MHz    STOP 850.500MH
M1: −53.75 dBm, 849.998MHz    M3=OFF
M2: −116.90 dBm, 850.377MHz    M4=OFF

**MODE**    **FREQ / SPAN**    **AMPLITUDE**

**Tracking Generator Option**
Optional built-in tracking generator adds scalar analysis capability from 10 MHz to 3 GHz.

**Multilingual User Interface**
Multi-language user interface features on-screen menus and messages in 6 different languages.

**Trace Overlay**
View two on-screen traces at the same time to compare the current measurement to baseline measurements stored in the unit's memory.

**Measurement Key**
Executes various functions and measurements such as field strength, occupied bandwidth, channel power, ACPR and AM/FM demodulation.

**Save Setup**
Store 10 test setups for fast repeatable testing.

**Limit Line**
Create simple pass/fail measurements.

**Full Range of Marker Capabilities**
Faster, more comprehensive measurements.

**Save Display**
200 memory locations for measurement data. Alphanumeric data labeling allows descriptive naming of measurement data. Automatic time and date stamp simplifies data management.

**Softkeys**
Intuitive softkeys menu and user interfaces.

**AM/FM Receiver with Internal Speaker**
Built-in AM/FM demodulator enables testing and trouble-shooting of wireless communications systems. An internal speaker or headset easily interprets signals of interest.

MS2711B

M1
M2
M3
M4
MORE
ALL OFF

BW / SWEEP

TRACE 3   MEAS 4   SAVE SETUP 5   RECALL SETUP 6   LIMIT 7   MARKER 8   ENTER   SAVE DISPLAY 9   RECALL DISPLAY 0   SINGLE CONT +/−   ON OFF   PRINT .   SYS   ESCAPE CLEAR

# The Benefits are Much Larger

# *SO POWERFUL, YET SO SMALL THAT IT FITS INTO YOUR BACKPACK*

## POWERFUL NEW FEATURES

- Wide Dynamic Range
- Built-in Preamplifier Option
- Built-in Tracking Generator Option
- Dynamic Attenuation
- One-Button Measurements

- Trace Averaging
- 50Ω to 75Ω Adaptable Interface
- Multilingual User Interface
- Quick Zoom-in, Zoom-out Display
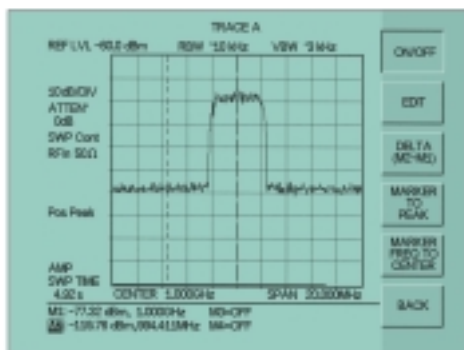- Reference Level Offset

### Wide Measurement Range

The MS2711B delivers a broad range of performance from –95 dBm to + 20 dBm for finding the source of interfering signals in various wireless technologies including cellular, PCS, mobile data, mobile satellite, fixed wireless and SMR applications.
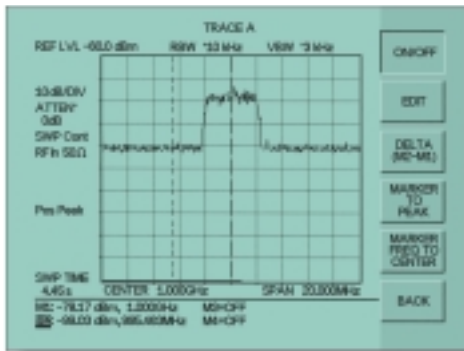
*Preamplifier Off*

### Preamplifier

With the optional built-in preamplifier, the sensitivity of the MS2711B can be extended to –115 dBm, enabling full testing and troubleshooting of very low level signals.

*Optional Preamplifier Activated*

### Dynamic Attenuation

Dynamic attenuation tracks the input signal level, automatically adjusting the reference level to protect the MS2711B in situations of high RF signal levels, or enhancing the instrument sensitivity in situations of low-level RF signal input. When configured with the optional built-in preamplifier, dynamic attenuation automatically activates or de-activates the preamplifier according to signal environment.

### One Button Measurements

Using the MS2711B's measurement function, dedicated one-button measurements such as channel power, adjacent channel power ratio and occupied bandwidth measurements can confirm the distortion level or channel power performance of a transmitter. Additionally, the MS2711B can conduct a series of spurious measurements when analyzing a wireless base station transmitter, as well as using the field strength mode to measure propagation and coverage or to pinpoint electromagnetic leakage in broadcast systems.
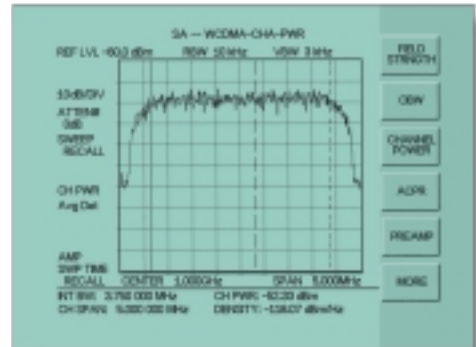
*One Button Measurement Menu*

# HANDHELD, BATTERY-OPERATED, FIELD PROVEN DESIGN

## Tracking Generator

The optional built-in tracking generator adds scalar analysis capability from 10 MHz to 3 GHz. The tracking generator function can be used to measure gain, frequency response, flatness and even return loss of wireless communication systems. A built-in attenuator provides an output power range of –60 to 0 dBm.
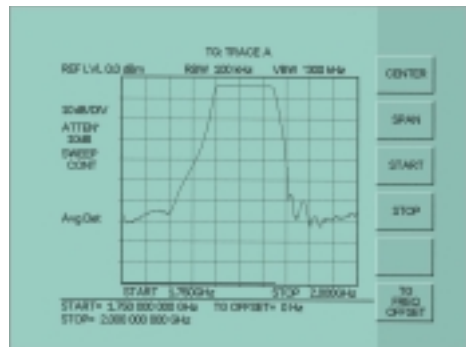


*Tracking Generator Measurement*

## Marker Functions

A full range of marker functions, such as peak, delta and center give users faster and more comprehensive measurements of displayed signals. Additionally, up to six individual markers can be displayed at one time on the MS2711B.
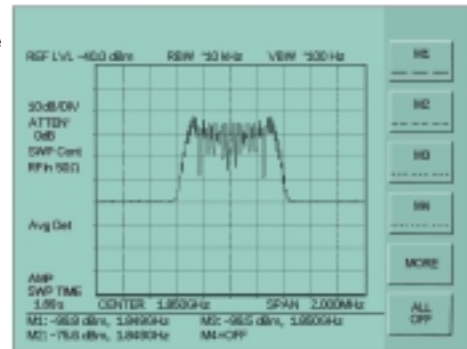


*Marker Screen*

## Multilingual User Interface

The new multilingual user interface features on-screen menus and messages in 6 different languages (English, Chinese, Japanese, German, French and Spanish).
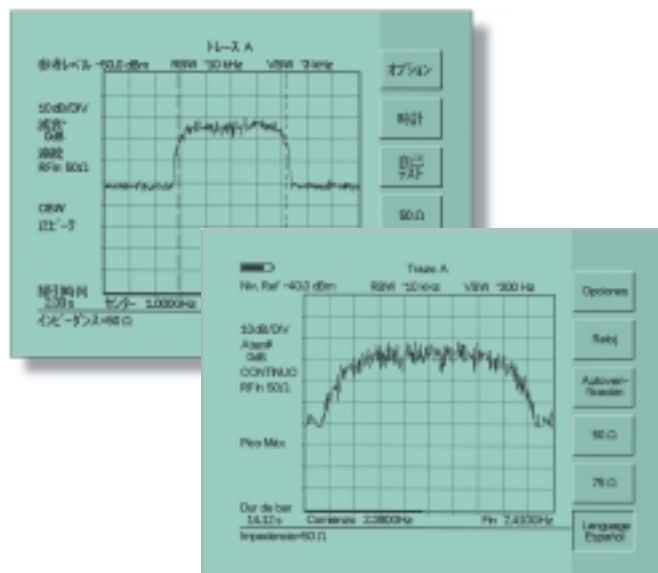


*Multilingual User Interface*

## Single and Segmented Limit Lines

The MS2711B features both single and segmented limit line capability. Limit lines simplify amplitude measurements, giving users the ability to make quick, simple pass/fail measurements.
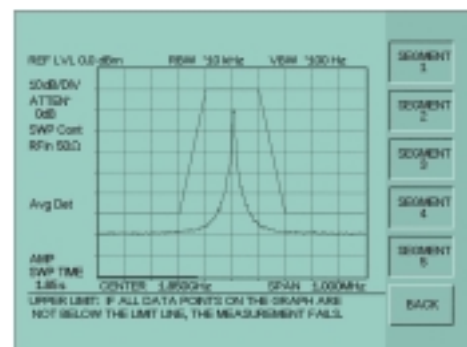


*Segmented Limit Line*

## Trace Overlay

The MS2711B provides the ability for users to visually compare a current trace against a reference trace that is stored in the unit's memory.
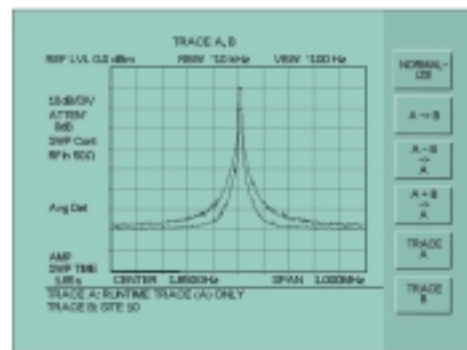


*Trace Overlay Screen*

## AM/FM Receiver

A built-in AM/FM demodulator enables testing and troubleshooting of wireless communications systems. An internal speaker or headset easily interprets signals of interest.

# *SPECTRUM ANALYSIS – ANYWHERE, ANYTIME*

## Reference Level Offset

The reference level offset feature allows measurement of high signal levels with the use of an attenuator. By adding an offset value to the displayed reference level, high signal levels can then be easily and accurately measured by the MS2711B.

## Quick Zoom-In, Zoom-Out Display

Enter span parameters directly, or use the quick zoom-in/zoom-out feature to quickly reduce or increase span settings in a 1-2-5 sequence.
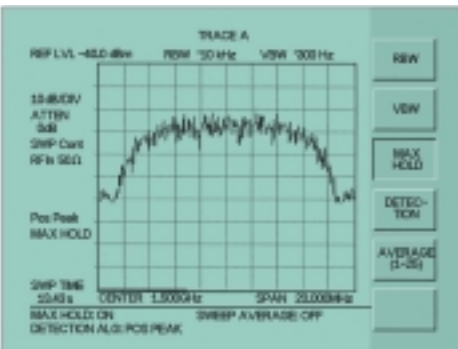
## Trace Averaging

Use the trace averaging function to make easier and more accurate noise-related measurements. By selecting the trace averaging function users can select up to 25 sweep averages.
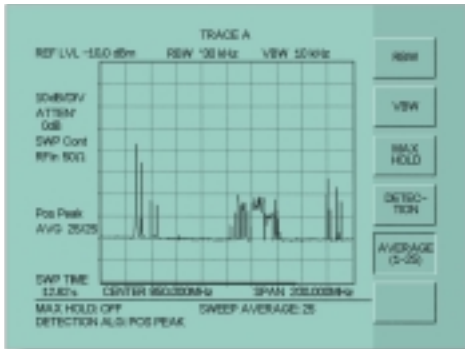


*Trace Averaging Menu*

## Max Hold

Use the MS2711B's Max Hold feature to display and hold the maximum response of the input signal.



*Max Hold Screen*

## Field Strength Measurements

The MS2711B comes standard with field strength capability. Field strength measurements can be used to pinpoint electromagnetic (EM) leakage in broadcast systems or areas of weak coverage in mobile communication systems.
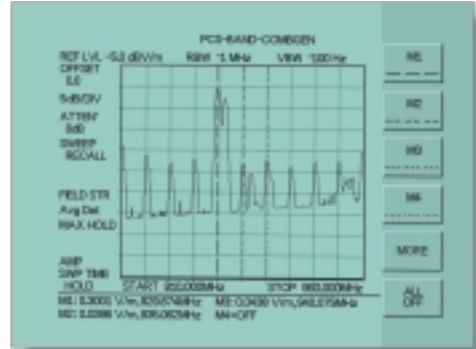


*Field Strength Measurement*

## $50\Omega$ to $75\Omega$ Interface

The MS2711B comes standard with a $50\Omega$ interface feature that allows measurements of a $75\Omega$ system while retaining amplitude accuracy with the $50\Omega$ input of the MS2711B Handheld Spectrum Analyzer.
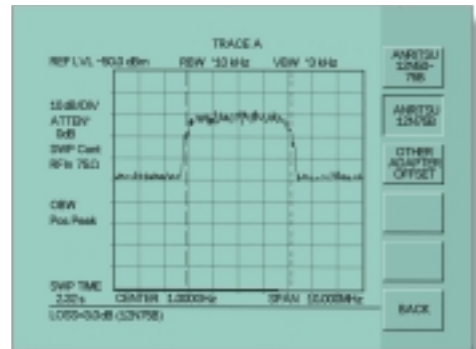


*$75\,\Omega$ Measurement*

# THE SMART SOLUTION FOR FIELD MEASUREMENTS

The MS2711B is perfect for radio communications agencies needing to monitor signals and sources of interference in field environments.

Power, frequency, occupied bandwidth, frequency deviation, signal strength, AM/FM demodulation and modulation depth measurements are easily executed with the MS2711B's intuitive soft-key/hard-key user interface.

The MS2711B provides a broad range of testing capability across a variety of field applications including:

- Detection of Signal Interference
- Monitoring of Selected and Unselected Transmissions
- Detection of Unlicensed Transmitters
- Detection of Undesired Emissions
- Protection Against Concealed Transmitters
- Coverage/Signal Strength Mapping



## Antenna Alignment

The MS2711B is ideal for field alignment of small dish antennas. Simply tune to the frequency of interest and monitor received signal strength until position is optimized.



## Signal Mapping

Ideal for site surveys and other signal mapping applications, the MS2711B can optimize placement of antennas and access points in a WLAN or WPBX network. Identification of potential in-band interference as well as transmitted signal quality can be easily performed as the installer moves about the installation site. Use of the optional, built-in preamplifier can further facilitate the identification of stray signals or optimize access point placement.

## Interference

With the increased deployment of wireless technologies, identifying the source of RF interference problems can be very difficult. The MS2711B solves this problem by providing the noise floor and phase noise performance necessary to enable easy detection of signal interference. The unit's built-in AM/FM demodulation and zero span capability further facilitates detection of signal interference. With the unit's RS-232 interface, a notebook computer can be used for automated control and collection of interference data in the field. A modem can also be used for remote operation.
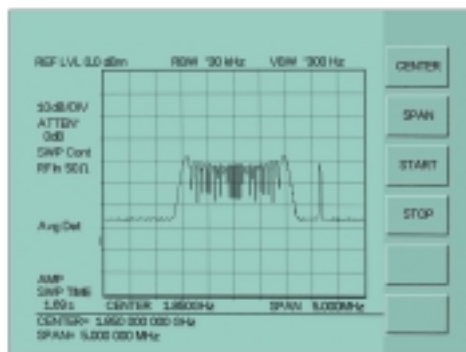


*Interference Measurement*

## On-Site System Test

Convenient operating procedures, high sensitivity and excellent repeatability enables the MS2711B to pinpoint the smallest RF performance degradation. Harmonic distortion, Channel Power, Occupied Bandwidth, Antenna-to-Antenna isolation and potential interference problems can be detected before small problems grow into big, costly, time-consuming headaches and unwanted site downtime.

## Spurious Emissions

In-Band and Out-of-Band spurious emissions can cause havoc with Tx-Rx communication systems. Real-time monitoring of spurious emissions from a transmitter or receiver can uncover unwanted signals before they interfere with other users of the radio spectrum, rendering your system noncompliant.
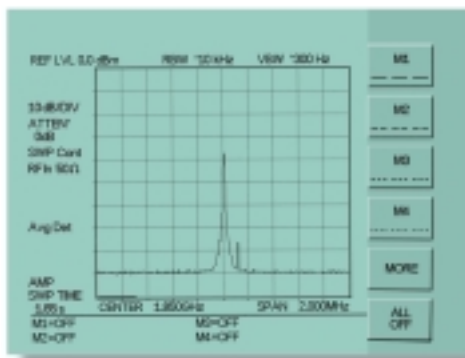


*In-Band Spur Measurement*

## Channel Power

One of the most common measurements for transmitters is the channel power measurement. Channel power measures power and power spectral density in a given bandwidth and can quickly confirm if a transmitter is operating in compliance with system specification.
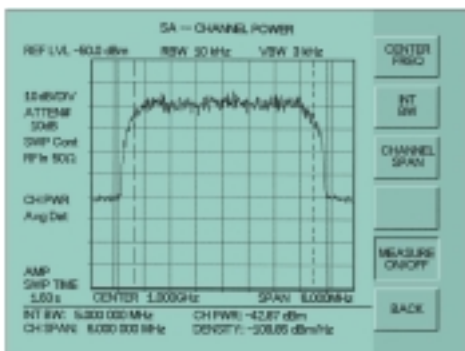


*Channel Power Measurement*

## Adjacent Channel Power

The adjacent channel power measurement allows the user to measure the amount of (or ratio of) power leakage into adjacent radio channels.
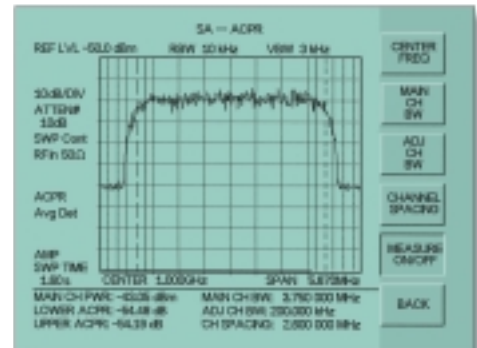


*ACP Measurement*

## Occupied Bandwidth

Monitoring of a transmitter's occupied bandwidth enables the user to determine if the transmitter is functioning properly. The MS2711B provides Xdb Down and % of power methods to assist users in making transmitter occupied bandwidth measurements.



*Occupied Bandwidth Measurement*

7
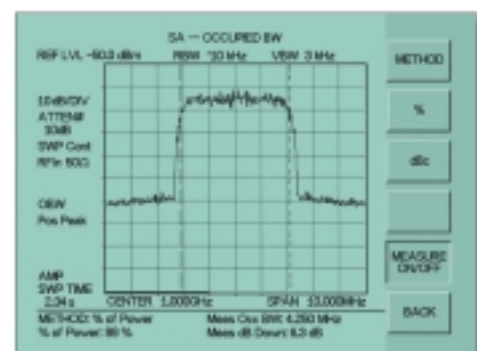
# PC SOFTWARE TOOLS FOR PROFESSIONAL ANALYSIS AND REPORT GENERATION

Although the MS2711B features built-in analytical and reporting functions, users can also download measurement data to a PC for additional analysis or report generation. User friendly Software Tools is a Windows® program designed specifically for field spectrum analysis and will run on any computer with Windows 95/98/NT4/2000/ME/XP.
Test data can be analyzed and compared to historical performance.

• Up to 200 MS2711B Handheld Spectrum Analyzer trace memory locations can be down loaded with a single menu selection.

• Build historical records with an unlimited number of traces in one document.

• Standard Windows 95/98/NT4/2000/ME/XP interface simplifies data analysis and report generation.

• Intelligent drag-and drop automatically converts traces to a common scale and speeds fault identification.

• Supports long file names for easy measurement data identification.

• Quickly and easily download data traces from the MS2711B to PC database with a single menu selection, or upload traces from the PC database to the MS2711B for in-field measurement comparison.
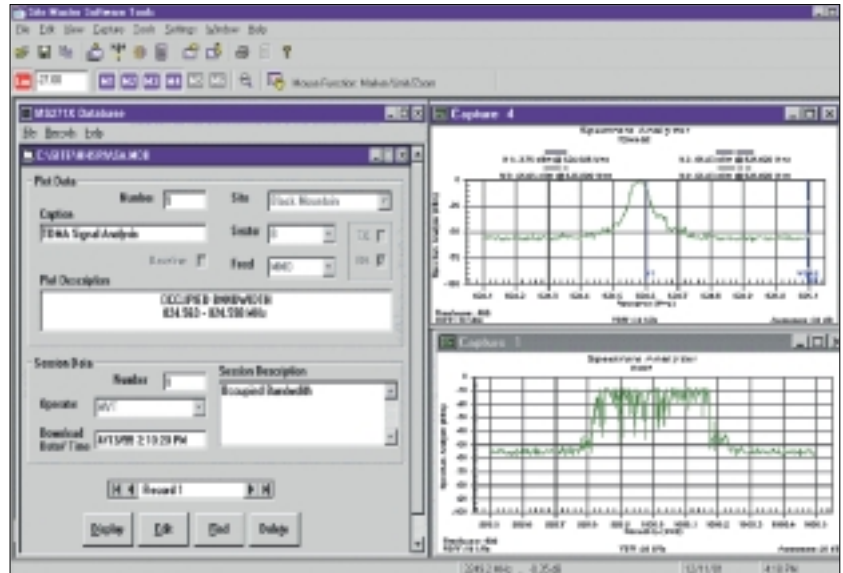


*The MS2711B Handheld Spectrum Analyzer Software Tools quickly stores Test Site data to a Relational Database File*



*Tired of searching for a notebook full of obsolete measurement data? When you go to a site, your database goes with you. Software Tools for the MS2711B is intended for use as a maintenance tool. You can add new data to an existing database. Compare historical measurements to current test data to quickly pinpoint small changes in performance. The database's search feature allows technicians to enter data into any open field on the menu. The search returns all trace data ("records") which fit the description. So, if you'd like to see every trace measured by "Phil B." at site number "51", just pull-down (or key-in) those selections and click on the Search button.*

# *PERFORMANCE ENHANCING OPTIONS*

## RF Power Monitor (Option 5)

A RF Wattmeter option is also available on the Anritsu MS2711B Handheld Spectrum Analyzer. The MS2711B power monitor features precision, high return loss (low SWR) detectors. The excellent impedance match dramatically reduces the largest component of power measurement error, mismatch uncertainty. Display formats include absolute power (dBm or Watts) and relative power (dB or %). Built-in auto-averaging automatically reduces the effects of noise. Zeroing control allows optimum measurement accuracy at lower power levels.



*Signal Detector range, −50 to +20 dBm*

## Tracking Generator (Option 20)

A built-in tracking generator covering 10 MHz to 3.0 GHz is available for the MS2711B, making it ideal for tuning cavity filters, adjusting repeater gain and many other applications. The fast tuning feature allows faster scalar measurements with minimal user intervention.
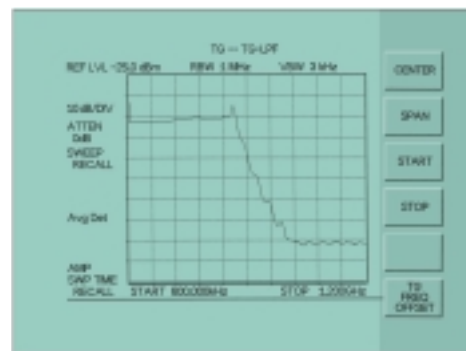


*Tracking Generator (Option 20)*

## Preamplifier (Option 8)

A built-in 20 dB preamplifier featuring broadband coverage from 1 MHz to 3.0 GHz is available for the MS2711B making it ideal for low-level signal analysis and site surveys. With the built-in preamplifier option, sensitivity of the MS2711B can be extended to −115 dBm.



*Preamplifier (Option 8)*
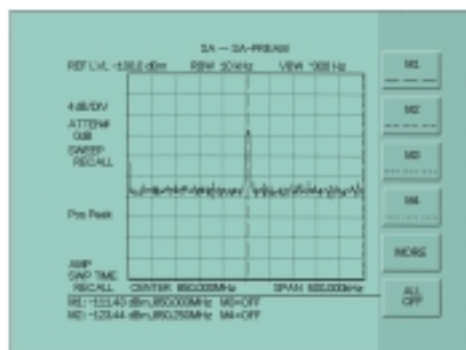
# SPECIFICATIONS

Except where noted otherwise, specified values are obtained after warming up the Anritsu MS2711B 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 GHz

**Frequency Reference**
Aging: ± 1 ppm/yr
Accuracy: ± 2 ppm

**Frequency Span**
1 kHz to 3 GHz in 1,2,5 step selections in auto mode, plus zero span

**Sweep Time**
≥ 6500 ms full span; 510 ms zero span

**SSB Phase Noise**
−75 dBc/Hz, 30 kHz offset

**Spurious Responses**
Input Related: ≤ −45 dBc

**Spurious**
Residual Responses: ≤ −90 dBm, ≥ 500 kHz

### Resolution Bandwidths

**Selections**
10 kHz, 30 kHz, 100 kHz and 1 MHz

**Accuracy**
± 20%, typical

### Video Bandwidth

**Selections:**
100 Hz to 300 kHz in 1-3 sequence

### Amplitude

**Measurement Range**
+20 to −95 dBm, (without product options)

**Maximum Safe Input Level**
+ 23 dBm, ± 50 Vdc

**Displayed Average Noise Level**
≤ −115 dBm (≥ 1 MHz, typical with preamplifier on)
≤ −95 dBm (≥ 500 kHz, typical with preamplifier off)
≤ −80 dBm (< 500 kHz, typical with preamplifier off)

**Dynamic Range**
> 65 dB

**Total Level Accuracy**
± 2 dB, ≥ 500 kHz, typical
± 3 dB, < 500 kHz, typical

**Units**
dBm, dBV, dBmV, dBμV

**Display Range**
2 to 15 dB/div in 1 dB steps
Ten divisions displayed

**Attenuator**
Range: 0 to 50 dB, selected manually or automatically coupled to the reference level
Resolution: 10 dB steps

### Display

**Type**
Monochrome LCD (with backlight capability)

**Resolution**
640 x 480

**Marker Modes**
6 Markers; standard, delta, marker to peak and marker to center

### Memory

**Trace Storage**
200 stored traces

**Setup Storage**
10 test setups

**Displayed Traces**
2

### Inputs

**RF Input**
50-Ohms

**Connector**
Type N Female

**RF Input VSWR**
2.0:1

### RS-232 Interface

**Type**
Null modem

**Baud Rate**
9600,19.2k, 38.4k, 56k, 115.2k Baud

### Printer Interface

**Drivers**
Epson ESC/P
Epson ESC/P RAST
Epson ESC/P2
HP PCL3

### General Characteristics

**Dimensions**
10.0 in. x 7.0 in. x 2.4 in.
25.4 cm x 17.8 cm x 6.1 cm

**Weight**
≤2.2 kg (4.9 lbs) including battery

### Power Requirement

**Battery Operation (standard)**
NiMH battery

**AC/DC Operation (optional via external DC input)**
+12.5 to +15 Vdc, 1100 mA max.

### Environmental

**Temperature**
Operating: 0 to +50°C, humidity 85% or less
Non-operating: −20 to +75˚C

### Electromagnetic Compatibility

Complies with European community requirements for CE marking

### Safety

Conforms with EN 61010-1 for class 1 portable equipment

# MS2711B RF POWER MONITOR (OPTION 5) SPECIFICATIONS

| Measurement Range |
|---|

**Measurement Range**
  −50 to +20 dBm (10.0 nW to 100.0 mW)

**Offset Range**
  0 to +60.0 dB

**Resolution**
  0.1 dB or 0.1 xW

# MS2711B TRACKING GENERATOR (OPTION 20) SPECIFICATIONS

| Frequency |
|---|

**Frequency Range**
  10 MHz to 3 GHz

**Frequency Resolution**
  5 kHz

**Tracking Offset Range**
  ± 5 MHz

| Output |
|---|

**Output Power Level**
  0 to −60 dBm

**Output Power Level Resolution**
  0.1 dB

**Absolute Level Accuracy**
  ±1.5 dB, 0 to −40 dBm,
  ±4.0 dB, −40 dBm to −60 dBm

**Output Tracking VSWR**
  <2.0:1, <0 dBm

**Spurious Harmonics**
  ≤−20 dBc

**Non-Spurious**
  ≤−20 dBc

| Measurement Range |
|---|

**Measurement Range**
  +20 to −90 dBm (≥10 MHz, typical with tracking generator on)

# MS2711B PREAMPLIFIER (OPTION 8) SPECIFICATIONS

| Frequency |
|---|

**Frequency Range**
  1 MHz to 3 GHz

| Amplitude |
|---|

**Gain**
  20 dB, 1 MHz to 3 GHz, typical

**Measurement Range**
  −25 dBm to −115 Bm (with preamp on)

**Displayed Average Noise Level**
  ≤ −115 dBm (1 MHz to 3 GHz, typical)

**Max Input Level (Preamp On)**
  −25 dBm, maximum measurable input
  +13 dBm, ±50 Vdc, maximum without damage



*Panel connections include a 9 pin D-sub RS-232, precision test port connector, DC power input,*
*headphone jack and an optional RF detector connection for the power meter operations.*

# ORDERING INFORMATION

## Standard Product and Accessories

### Model MS2711B (100 kHz to 3000 MHz)
User's Guide
Soft Carrying Case
Rechargeable Battery, NiMH
AC – DC Adapter
Automotive Cigarette Lighter/12 Volt DC Adapter
One Year Warranty
CD ROM containing Software Management Tools
Serial Interface Cable

## Product Options

| | |
|---|---|
| Option 5 | RF Watt Meter Power Monitor (RF Detector not included) |
| Option 8 | 20 dB, Preamplifier, Built-in, 1 MHz to 3.0 GHz |
| Option 20 | Tracking Generator, Built-in, 10 MHz to 3.0 GHz |

## Optional Accessories

| | |
|---|---|
| 5400-71N50 | RF Detector, N(m), 50 Ohm, 1 to 3000 MHz |
| 42N50A-30 | 30 dB, 50 Watt, Bi-directional Attenuator, DC to 18 GHz, N(m) to N(f) |
| 15NN50-1.5C | Test Port Cable Armored, 1.5 meter, N(m) to N(m), 6.0 GHz |
| 15NN50-3.0C | Test Port Cable Armored, 3.0 meter, N(m) to N(m), 6.0 GHz |
| 15NN50-5.0C | Test Port Cable Armored, 5.0 meter, N(m) to N(m), 6.0 GHz |
| 15NNF50-1.5C | Test Port Cable Armored, 1.5 meter, N(m) to N(f), 6.0 GHz |
| 15NNF50-3.0C | Test Port Cable Armored, 3.0 meter, N(m) to N(f), 6.0 GHz |
| 15NNF50-5.0C | Test Port Cable Armored, 5.0 meter, N(m) to N(f), 6.0 GHz |
| 15ND50-1.5C | Test Port Cable Armored, 1.5 meter, N(m) to 7/16 DIN(m), 6.0 GHz |
| 15NDF50-1.5C | Test Port Cable Armored, 1.5 meter, N(m) to 7/16 DIN(f), 6.0 GHz |
| 61N50 | RF SWR Bridge (10 to 2500 MHz), N(m) Connector, 50Ω |
| 61NF50 | RF SWR Bridge (10 to 2500 MHz), N(f) Connector, 50Ω |
| 1030-86 | Band Pass Filter, 806-869 MHz, 1.7 dB loss, N(m) to SMA(f), 50Ω |
| 1030-87 | Band Pass Filter, 902-960 MHz, 1.7 dB loss, N(m) to SMA(f), 50Ω |
| 1030-88 | Band Pass Filter, 1.85-1.99 GHz, 1.8 dB loss, N(m) to SMA(f), 50Ω |
| 1030-89 | Band Pass Filter, 2.4-2.5 GHz, 1.4 dB loss, N(m) to SMA(f), 50Ω |
| 510-90 | Adapter 7/16 (f) to N(m), 7.5 GHz |
| 510-91 | Adapter 7/16 (f) to N(f), 7.5 GHz |
| 510-92 | Adapter 7/16 (m) to N(m), 7.5 GHz |
| 510-96 | Adapter 7/16 DIN (m) to 7/16 DIN (m), 7.5 GHz |
| 510-97 | Adapter 7/16 DIN (f) to 7/16 DIN (f), 7.5 GHz |
| 1091-26 | Adapter, DC to 18 GHz, 50Ω, N(m) to SMA(m) |
| 1091-27 | Adapter, DC to 18 GHz, 50Ω, N(m) to SMA(f) |
| 1091-172 | Adapter, DC to 1.3 GHz, 50Ω, N(m) to BNC(f) |
| 34NN50A | Precision Adapter, DC to 18 GHz, 50Ω, N(m) to N(m) |
| 34NFNF50A | Precision Adapter, DC to 18 GHz, 50Ω, N(f) to N(f) |
| 12N50-75B | Matching Pad, converts 75Ω to 50Ω, 7.5 dB loss, DC to 3,000 MHz, 50Ω N(m) to 75Ω N(f) |

## Optional Accessories (continued)

| | |
|---|---|
| 48258 | Spare Soft Carrying Case |
| 40-115 | Spare AC/DC Adapter |
| 806-62 | Spare Automotive Cigarette Lighter/12 Volt DC adapter |
| 800-441 | Spare Serial Interface Cable |
| 551-1691 | USB to RS232 Serial Adapter |
| 760-215A | Transit Case for Anritsu Handheld Spectrum Analyzer |
| 633-27 | Rechargeable Battery, NiMH |
| 2000-1029 | Battery Charger, NiMH |
| 2300-347 | Anritsu Handheld Spectrum Analyzer Software Tools |
| 10580-00074 | Anritsu HHSA User's Guide, Model MS2711B |
| 2000-1030 | Portable Antenna, 50 Ohm, SMA (m), 1.71-1.88 GHz |
| 2000-1031 | Portable Antenna, 50 Ohm, SMA (m), 1.85-1.99 GHz |
| 2000-1032 | Portable Antenna, 50 Ohm, SMA (m), 2.4-2.5 GHz |
| 2000-1200 | Portable Antenna, 50 Ohm, SMA (m) 806-869 MHz |
| 2000-1035 | Portable Antenna, 50 Ohm, SMA (m), 902-960 MHz |
| 70-28 | Portable lightweight headset |

## Printers

| | |
|---|---|
| 2000-766 | HP DeskJet Printer, Model 350 Includes: Interface Cable, Black Print Cartridge, and U.S. Power Cable |
| 2000-753 | Spare Serial-to-Parallel Converter Cable |
| 2000-755 | Five (5) rolls of Thermal Paper |
| 2000-756 | Serial 9-pin to 25-pin D-Sub Converter Cable (for Sieko DPU-411-12BU) |
| 2000-1206 | Black Print Cartridge (for HP 350 Printer) |
| 2000-1207 | Rechargeable Battery for DeskJet Printer (for HP 350 Printer) |
| 2000-663 | Power Cable (Europe) for DeskJet Printer |
| 2000-664 | Power Cable (Australia) for DeskJet Printer |
| 2000-665 | Power Cable (U.K.) for DeskJet Printer |
| 2000-667 | Power Cable (So. Africa) for DeskJet Printer |
| 2000-1008 | Sieko DPU-414-30B Thermal Printer Includes: Internal Battery, Thermal Printer Paper, Serial Cable, Power Cable |
| 2000-1002 | U.S. Adapter (for Seiko DPU-414-30B) |
| 2000-1003 | Euro Adapter (for Seiko DPU-414-30B) |
| 2000-1004 | Battery Pack Adapter (for Seiko DPU-414-30B) |
| 2000-1012 | Serial 9-pin (male) for 9-pin (female) cable |
| 2000-1194 | Japan Adapter (for Sieko DPU-414-30B) |

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