

MODEL 7500

- Lightweight, portable, battery operated for go-anywhere testing.
- 100 kHz–2060 MHz range for AM, FM, TV, PCS, cellular, and mobile radio
- Graphic user interface and calculator keypad for fast, intuitive set-ups.
- Sharp, backlit LCD display for easy viewing under any light.
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- Spectrum, bargraph, and channel difference display modes.
- Serial and parallel printer interfaces for convenient hardcopy generation.

Model 7500 2 GHz RF Field Strength Analyzer

The Model 7500 RF Field Strength Analyzer is the world's first portable instrument to combine the functionality of a graphic spectrum analyzer, frequency counter, and tunable RF monitor in a 1.5-pound, hand-held instrument. Its wide 100 kHz to 2060 MHz frequency range covers mobile, PCS, cellular and cordless phones, AM, FM, TV, amateur, satellite, aeronautical, and marine frequencies. Compatibility with AM, single side band (SSB), and

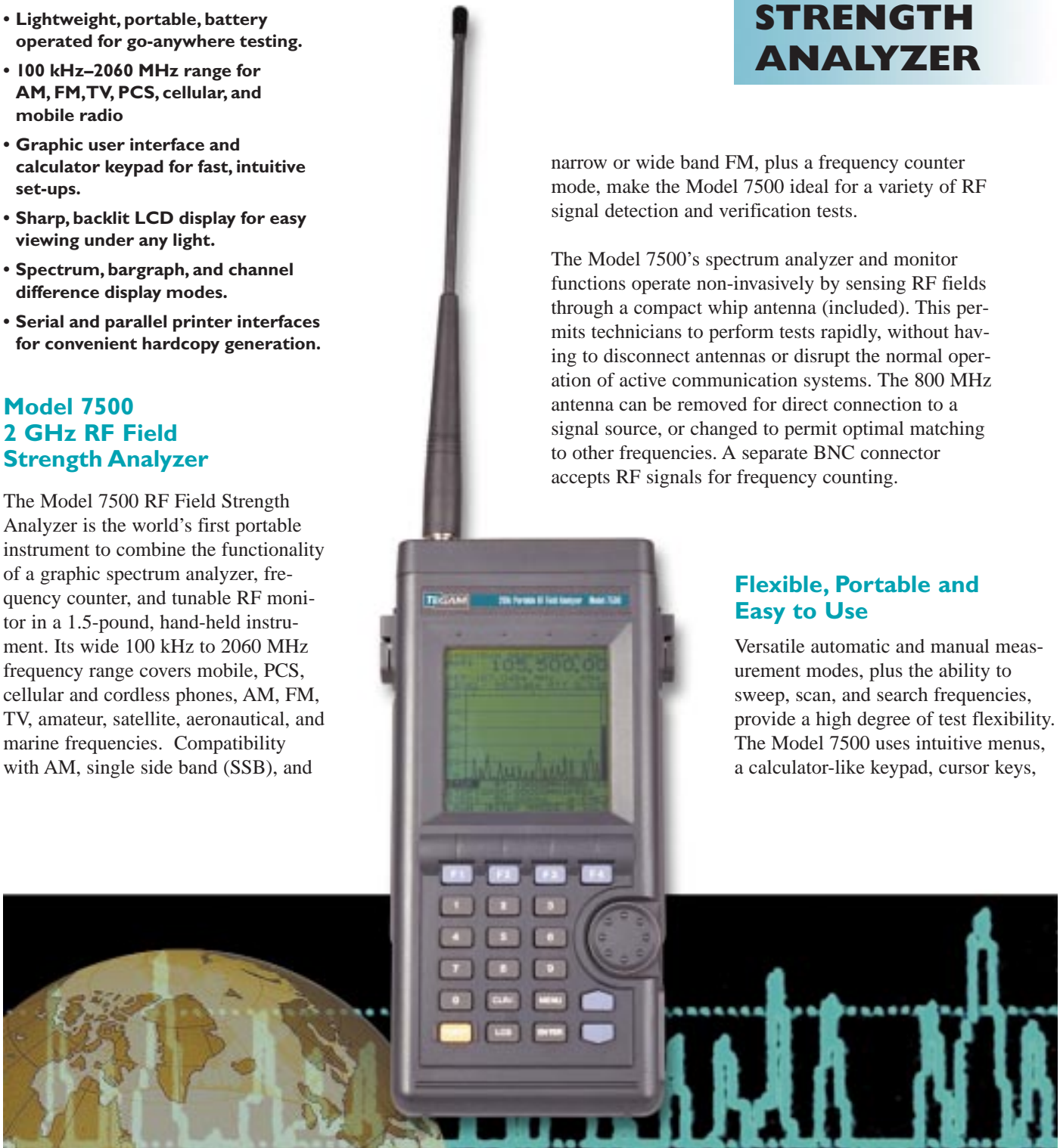
RF FIELD STRENGTH ANALYZER

narrow or wide band FM, plus a frequency counter mode, make the Model 7500 ideal for a variety of RF signal detection and verification tests.

The Model 7500's spectrum analyzer and monitor functions operate non-invasively by sensing RF fields through a compact whip antenna (included). This permits technicians to perform tests rapidly, without having to disconnect antennas or disrupt the normal operation of active communication systems. The 800 MHz antenna can be removed for direct connection to a signal source, or changed to permit optimal matching to other frequencies. A separate BNC connector accepts RF signals for frequency counting.

Flexible, Portable and Easy to Use

Versatile automatic and manual measurement modes, plus the ability to sweep, scan, and search frequencies, provide a high degree of test flexibility. The Model 7500 uses intuitive menus, a calculator-like keypad, cursor keys,



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RF Field Strength Analyzer

and a data dial to speed the entry of test parameters for exceptionally easy operation, even for occasional users. Technicians can use the Model 7500 to improve efficiency by predefining and storing tests so that they may be run quickly at a test site. The user can define and name channels (individual frequencies), and include up to 160 channels in a scan. The Model 7500 can also compare and report the difference in strength of signals on two separate frequencies. On-board memory can store up to 10 setups for each operating mode, as well as the results of up to 10 displays, each showing up to 160 channels. The Model 7500's seven-digit frequency counter operates over a range of 9 MHz to 2 GHz, with a resolution of 1 kHz. Up to 10 frequency measurements can be stored in memory.

Graphic Display Provides Complete Information

The 192 x 192 pixel liquid crystal display (LCD) shows signal information in the form of a spectrum, multi-bar graph, or numerical data, depending on operating mode. The LCD is backlit, and maintains excellent visibility in bright sunlight or low ambient lighting.

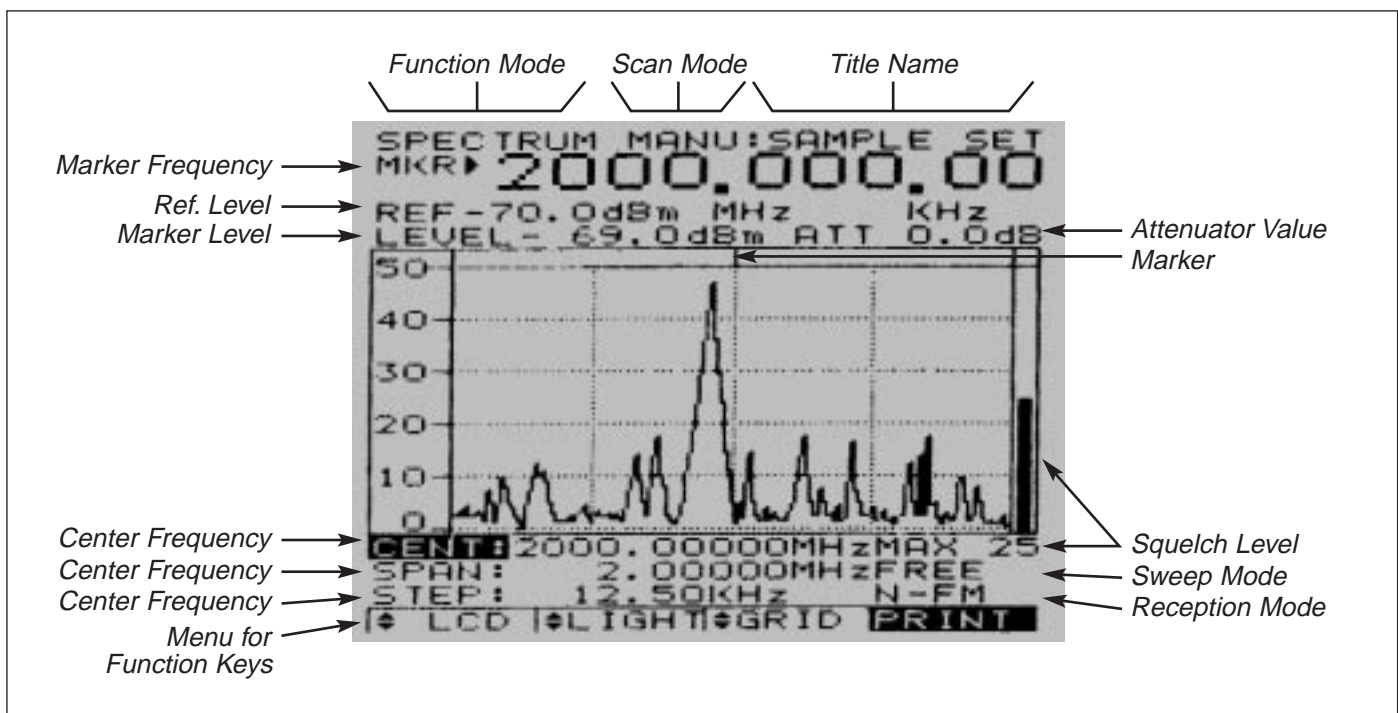
Advanced Features Add To Versatility

An internal, pushbutton-selectable, -10 dB attenuator enables input sensitivity to be adjusted in order to extend measurement range. Up to -60 dB of attenuation can be added externally, and the unit set to compensate for standard attenuator values of 3, 6, 10, 20, 30, 40, 50, or 60 dB automatically.

A self-contained demodulator and speaker provide audio output for AM, FM, or SSB signals at a user-controlled marker frequency. Private monitoring is possible using the built-in headphone jack and volume control. Built-in RS232C serial and parallel interfaces can be used to connect the Model 7500 to computer or optional printer. The serial interface supports communication rates up to 9600 baud.

A built-in battery pack and weight of less than 1.5 pounds facilitate field testing without the need for an AC supply. Power options include internal easy-to-obtain alkaline batteries, nicad batteries, or an external source of 11-16 Vdc. An automotive power adapter is included. Automatic power-off and backlight control conserve batteries.

Spectrum Analyzer Display



Specifications

Frequency

Frequency Range:	100 kHz to 2060 MHz
Frequency Step:	5 KHz to 9995 kHz in multiples of 5 kHz or 6.25 kHz
Ref. Oscillator Accuracy:	± 3 PPM
Frequency Marker Accuracy:	± 25 PPM
Frequency Meas.:	Narrow Band FM, Wide Band FM, AM and Single side band modulated signals

Input

Input Impedance:	50 ohms, 75 ohms with software compensation
Max. Input Volts:	5 V rms.
Measurement Units:	dBmV, dB μ V, dBmW
Attenuation:	0 dB or -10 dB internal. 0 dB to -60 dB with external attenuator

Level Measurements

Narrow Band FM:	Level Meas. Range: -70 dBmV to -20 dBmV (1 MHz to 2060 MHz) Resolution: ± 0.5 dB Accuracy: ± 3 dB Bandwidth: 12.5 kHz (-6 dB)
Wide Band FM, AM and SSB:	Level Meas. range: -60 dBmV to -10 dBmV (1 MHz to 2060 MHz) Resolution: ± 0.5 dB Accuracy: ± 3 dB Bandwidth: Wide band FM: Approx. 180 kHz, AM and SSB: Approx. 2.4 kHz BFO Freq. Range: up to ± 1.5 kHz above or below carrier

Displays

Display Modes:	Spectrum, bar graph and frequency counter
Bargraph Displays:	Multi channel (2, 5, 10, 20, 40, 80, 160 bar graphs per display), single channel and 2-channel difference.
Sweep Modes:	Single, Normal* and Free run * continuous sweep until level exceeds squelch
Squelch Level:	0 to full-scale, variable
Spurious Signals:	-35 dBc W-FM; -45 dBc for N-FM typical below a full-scale signal level frequency.

Scan Modes: Manual, Channel (memory scan) and Search scan

Scan Rate: 12.5 channels/second

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Specifications (continued)

Memory

Data Mem: Stores 10 displays of up to 160 channels per display.

Setup Mem: Stores 10 setups for each scan mode.

Frequency Counter

Bandwidth: 9 MHz to 2060 MHz

Resolution: 1 kHz

Accuracy: 50 PPM \pm 1 count

Input Impedance: 50 ohms

Max Input Volts: 5 Vrms

Response Time: 0.512 seconds

Input Sensitivity: 9 MHz to 2000 MHz: 150 mV
20 MHz to 1000 MHz: 100 mV
2 MHz to 2800 MHz: 500 mV

Data Memories: Stores 10 readings

General

LCD: 192 x 192 pixels, light green

Back Light: shuts off 5 seconds after last key depression, or continuous on

Interfaces: RS-232 interface with female 8-pin mini DIN connector. Baud rates of 1200, 2400, 4800, and 9600 bps are menu selected.
Parallel port

Auto Power Off: After 5, 10, 20, or 30 minutes of idle time. User selectable.

Audio Output: 120 mW into 8 ohms

Power: 6 AA NiCad Batteries, 12 volt car adapter, 11 V to 16 V @ 400 mA Max. AC to DC adapter

Warranty: The Model 7500 is warranted against defects in workmanship and materials for two years.

Physical

Operating Temperature: 0° to 40°C

Storage Temperature: -10° to 50°C

Relative Humidity: 35% to 85%

Dimensions: Height: 9 inches (229 mm)
Width: 4 inches (102 mm)
Depth: 1.77 inches (45 mm)

Weight: 1.4 lbs

Standard Accessories

(6) 1.5 V AA rechargeable NiCad batteries, recharger, vehicle power adapter, detachable 9" whip antenna, operator's manual, RS-232 cable and software, carrying case and strap, earphone.

Recommendations:

Manual page iv – General display features
Manual page 9 – Controls/Panel description
Manual page 25 – Figures 3, 8, 10

The Model 7500 is  Marked

Specifications subject to change without notice.

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