



*A low cost, proven service monitor for a variety of wireless communications test requirements*

- FM and AM Signal Generators
- 2  $\mu$ V receiver for AM, FM and SSB
- Analog meters offer high visibility in all lighting conditions
- Paging test for analog paging formats and advanced digital paging with the AC510 option
- 0.2 ppm TCXO

### Proven Performance

The FM/AM-500A is a communications service monitor that gives you the performance, field portability and durability you need in a value-priced and compact package.

Since its introduction, the FM/AM-500A has earned a loyal following among wireless testing professionals. It is an incredibly rugged and field-proven communication test set.

With proven performance, the FM/AM-500A is the perfect test solution for a wide range of wireless communication test requirements.

Typical applications include FM/AM testing, conventional two-way radio test, SSB testing and basic communication systems performance tests.

### Standard Features

- FM and AM Signal Generator
- 2  $\mu$ V receiver for AM, FM and SSB
- 10 Hz to 9999.9 Hz variable audio generator and audio frequency error meter
- 1 kHz audio generator
- Frequency error meter with 1 Hz resolution

## FM/AM-500A Communications Service Monitor



- Peak/Average watt meter
- Deviation measurement to 60 kHz
- SINAD/Distortion Meter
- 0.2 PPM TCXO
- Microphone input
- Audio demodulator output

### Specification

#### RF Signal Generator

- Frequency Range**  
250 kHz to 999.9999 MHz
- Resolution**  
100 Hz
- Variable Generate**  
Continuous tuning  $\pm 10$  kHz from selected frequency
- Residual FM**  
< 100 Hz peak RMS
- RF Output Power**  
-127 dBm to -20 dBm (10 dB steps with 11 dB range continuous vernier)
- RF Output Accuracy**  
 $\pm 3$  dB
- Output Impedance**  
50  $\Omega$  Nominal
- EXTERNAL MODULATION**
- Frequency Response**  
FM: 2 Hz to 30 kHz (DC when in variable generate)  
AM: 10 Hz to 10 kHz (30% maximum modulation above 5 kHz)
- Modulation Sensitivity**  
FM: 0.08 VRMS/kHz  $\pm 30\%$  of reading  
AM: 0.01 VRMS/%
- Distortion (1 kHz tone)**  
FM: <1% to 20 kHz deviation  
AM: <10% to 60% modulation
- Input Impedance**  
Greater than 10 k $\Omega$

#### Audio Generator

- Operating Modes**  
Internal: Modulation/Tone Out level controlled by 1 kHz or variable control  
Speaker: Tone applied directly to speaker with volume controlled by 1 kHz or variable control.  
External + Internal: External modulation input is summed directly with tones and applied to modulator
- Tone Accuracy**  
Fixed: Same as master oscillator  
Variable:  $\pm 0.01\%$
- Tone Distortion** (@ 2.5 VRMS Output)  
Fixed <0.5%  
Variable  $\pm 0.5\%$  @ 1 kHz, <1.5%  
10 Hz  
To 9999.9 Hz
- Tone Output Level**  
0 to 2.5 VRMS into 150  $\Omega$  load
- Frequency Range**  
10 Hz to 9999.9 Hz in 0.1 Hz increments

#### Generate Amplifier

- Gain**  
30 dB  $\pm 2$  dB typical, 100 kHz to 1000 MHz
- Test set output with amplifier installed**  
Variable to +10 dBm, FM and CW  
Variable to +4 dBm, AM (nominal)

#### Power Meter

- Range**  
0 to 15 and 0 to 150 watts peak or average responding
- Accuracy**  
1 to 600 MHz:  $\pm 7\%$  reading  
 $\pm 3\%$  full scale  
600 to 1000 MHz:  $\pm 20\%$  reading  
 $\pm 3\%$  full scale
- Input Power**  
25 W continuous  
150 W - 60 seconds on, 5 minutes off

# FM/AM-500A

## Receiver Monitor

### Frequency Range

100 kHz to 999.9999 MHz in 100 Hz increments

### Sensitivity

2  $\mu$ V (1 MHz to 1000 MHz, FM Narrow)

### Demodulation Output Impedance

600  $\Omega$

## Frequency Error Meter

### RF Accuracy

$\pm$ Master Oscillator,  $\pm$ 3% of full scale

### RF Ranges

$\pm$ 10 kHz,  $\pm$ 3 kHz,  $\pm$ 1 kHz,  $\pm$ 300 Hz,  $\pm$ 100 Hz,  $\pm$ 30 Hz full scale.

### Audio Counter Ranges

$\pm$ 300 Hz,  $\pm$ 30 Hz,  $\pm$ 3 Hz full scale

### Audio Counter Accuracy

$\pm$ 0.01%,  $\pm$ 6% of full scale

## Modulation Meter

### Type

Maximum of positive or negative peak (AM and FM)

### FM Deviation Accuracy

$\pm$ 5% of reading,  $\pm$ 3% of full scale

### AM% Modulation Accuracy

$\pm$ 5% of reading,  $\pm$ 3% of full scale

## SINAD Distortion Meter

### SINAD Range

3 to 20 dB @ 1kHz

### Accuracy

$\pm$ 1 dB at 12 dB SINAD

### Input Level

0.25 VRMS to 2 VRMS  
(10 VRMS maximum SINAD)

### Impedance

10 k $\Omega$  nominal

### Distortion Range

0 to 20% at 1 kHz

## General Characteristics

### Dimensions

292 mm (11.5 in) wide, 124 mm (4.9 in) high,  
363 mm (14.3 in) deep

### Weight

9.9 kg (22 lb) with battery

## Versions and Accessories

When ordering please quote the full order number information

### Ordering Numbers

500A-110	FM/AM-500A, 110 VAC operation
500A-110-C	FM/AM-500A, 110 VAC, with Certificate of Calibration
500A-220	FM/AM-500A, 220 VAC operation
500A-220-C	FM/AM-500A, 220 VAC operation, with Certificate of Calibration
500A-T-110	FM/AM-500A, 110 VAC, with 0.05 ppm OCXO time base
500A-T-110-C	FM/AM-500A-T-110, with Certificate of Calibration
500A-T-220	FM/AM-500A, 220 VAC, 0.05 ppm OCXO timebase
500A-T-220-C	FM/AM-500A-T-220, with Certificate of Calibration
<b>Accessories</b>	
AC0005	Soft Padded Carrying Case
AC510	Paging Encoder
AC1201	Telescopic antenna
AC1205	Microphone
AC5201	Maintenance Manual
AC5249	Generate Amplifier +30 dB gain