FM/AM-500A
Communications Service Monitor

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

- FM and AM Signal Generators
- 2 µV 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 µV 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
- 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 ±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
±3 dB

Output Impedance
50 Ω 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 ±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 kΩ

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:	±0.01%
Tone Distortion	(@ 2.5 VRMS Output)
Fixed	<0.5%
Variable	±0.5% @ 1 kHz, <1.5% 10 Hz To 9999.9 Hz

Tone Output Level
0 to 2.5 VRMS into 150 Ω load

Frequency Range
10 Hz to 9999.9 Hz in 0.1 Hz increments

Generate Amplifier

Gain
30 dB ±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:	±7% reading ±3% full scale
600 to 1000 MHz:	±20% reading ±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 µV (1 MHz to 1000 MHz, FM Narrow)

Demodulation Output Impedance
600 Ω

Frequency Error Meter

RF Accuracy
±Master Oscillator, ±3% of full scale

RF Ranges
±10 kHz, ±3 kHz, ±1 kHz, ±300 Hz, ±100 Hz, ±30 Hz full scale.

Audio Counter Ranges
±300 Hz, ±30 Hz, ±3 Hz full scale

Audio Counter Accuracy
±0.01%, ±6% of full scale

Modulation Meter

Type
Maximum of positive or negative peak (AM and FM)

FM Deviation Accuracy
±5% of reading, ±3% of full scale

AM% Modulation Accuracy
±5% of reading, ±3% of full scale

SINAD Distortion Meter

SINAD Range
3 to 20 dB @ 1kHz

Accuracy
±1 dB at 12 dB SINAD

Input Level
0.25 VRMS to 2 VRMS
(10 VRMS maximum SINAD)

Impedance
10 kΩ 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	*Versions*
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
	Accessories
AC0005	Soft Padded Carrying Case
AC510	Paging Encoder
AC1201	Telescopic antenna
AC1205	Microphone
AC5201	Maintenance Manual
AC5249	Generate Amplifier +30 dB gain

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