The FM/AM-500A "Micro-Monitor"

A 16 lb. Communications Service Monitor measuring only 11.5" wide x 4.9" high x 14.3" deep with No compromise in performance, quality, dependability or features

COMMUNICATIONS
SERVICE MONITOR

The FM/AM-500A "Micro-Monitor"

Through the years, we have led the way in the avionics test equipment industry due to our commitment to build the most cost effective test equipment available. The same criteria holds firm in the communications industry ...small, lightweight, rugged and dependable test instruments designed with maximum performance and durability in mind.

During the design of the IFR FM/AM-500A, we had to take a lot of things into consideration. The size, weight, functions and features were carefully scrutinized every step of the way in order to package the unit in an enclosure that measures only 11.5"W x 4.9"H x 14.3"D.

No compromise was our most important design goal from the conception of the FM/AM-500A...No compromise in performance, quality, dependability, and most of all, none in features.

Standard Features Include:

- FM signal generator
- AM signal generator
- Sensitive 2 µV receiver for AM, FM, and SSB
- 10 Hz to 9999.9 Hz variable audio generator plus audio frequency error meter
- 1 kHz audio generator
- Frequency error meter with 1 Hz resolution
- Peak and average reading watt meter, automatically protected generator output to 150 watts (no bothersome fuses to replace)
- Deviation measurement capabilities to 60 kHz
- SINAD/Distortion meter
- 0.5 PPM TCXO
- Microphone input
- Audio demodulator output
- Low price

Optional Features Include:

- 0.2 PPM TCXO
- 0.05 PPM oven oscillator (simulcast paging)
- Internal rechargeable battery (approximately 2 hour battery operation)
- High output amplifier
- Microphone
- Telescoping antenna

The most complete...compact...lightweight and rugged Service Monitor in its class today!!

FM/AM-500A
specifications

RF SIGNAL GENERATOR

Frequency Range: 250 kHz to 999.9999 MHz in 100 Hz increments

Frequency Accuracy: *Same as Master Oscillator*

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: 50Ω Nominal

Output Protection: Fully protected, 25 watts continuous, 150 watts for 1 minute. Auto changeover from generate to monitor will occur at a nominal 100 MW level.

Internal Modulation: *See Audio Generator*

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
AM: 0.01 VRMS/%

Distortion (1 kHz tone):
FM: <1% to 20 kHz deviation
AM: <10% to 60% modulation

Input Impedance: Greater than 10K OHMS.

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 Plus 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: *(at 2.5 VRMS Output)*

Fixed: <0.5%

Variable: <0.5% at 1 kHz, <1.5% 10 Hz to 9999.9 Hz

Tone Output Level: 0 to 2.5 VRMS minimum either tone into 150Ω load

Frequency Range (Variable): 10 Hz to 9999.9 Hz in 0.1 Hz increments

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 watts continuous, 150 watts 1 minute on, 5 minutes off

RECEIVER/MONITOR

Frequency Range: 100 kHz to 999.9999 MHz in 100 Hz increments

Sensitivity: 2 µV (1 MHz to 1000 MHz, FM Narrow)
(Sensitivity decreases below 10 MHz)

Selectivity:

Mode	RCVR Bandwidth	Audio Bandwidth
FM WIDE	200 kHz	80 kHz
FM MID	200 kHz	8 kHz
FM NAR	15 kHz	8 kHz
SSB	6 kHz	8 kHz
AM NAR	6 kHz	8 kHz
AM NORM	15 kHz	8 kHz

Adjacent Channel Rejection:

RCVR Bandwidth	−40 dB at
200 kHz	±300 kHz
15 kHz	±27 kHz
6 kHz	±12 kHz

Demodulation Output:

Output Impedance: 600Ω

Output Level: *(Measured into an open circuit)*
FM: 60 mVRMS/±1 kHz
AM: 5 mVRMS/%

Receiver Antenna Input Protection: 0.25 watts maximum without damage

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 Accuracy: ±0.01% ±6% of full scale

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

MODULATION METER *(Monitor Mode)*

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

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

FM Deviation Ranges: 2 kHz, 6 kHz, 20 kHz, 60 kHz full scale

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

AM % Modulation Ranges: 60%, 200% full scale

SINAD/DISTORTION METER

SINAD: 3 to 20 dB at 1 kHz

Accuracy: ±1 dB at 12 dB SINAD

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

Impedance: 10 K Ω nominal

Distortion Range: 0 to 20% at 1 kHz

MASTER OSCILLATOR

Standard TCXO:
Accuracy: 0.2 PPM (0-50°C)
Aging: 3 PPM per year, 1 PPM thereafter

Optional Oven: *(Option 02)*
Accuracy: 0.05 PPM (0-50°C)
Aging: 1 PPM per year

Note: Internal battery cannot be used with this option.

GENERATE AMPLIFIER *(Option 05)*

Gain: 30 ±2 dB typical, 100 kHz to 1000 MHz

Test Set Output with Amplifier Installed:
Variable to +10 dBm, FM, CW
Variable to +4 dBm, AM (nominal)

GENERAL

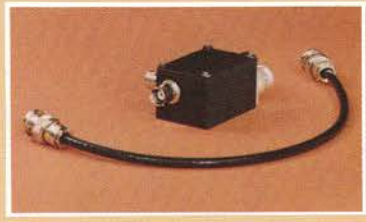
Operating Temperature Range: 0 to 50°C

Power Requirements: **Line:** 105-130/210-260 VAC, 50-400 Hz at 30 watts typical
Ext. DC: 12-14 VDC Nominal at 2 AMPS
Operation on Internal Battery *(Optional):* Approximately 2 hours

Dimensions: 29.2cm (11.5″) wide, 12.4cm (4.9″) high, 36.3cm (14.3″) deep
45.7cm (18″) *deep with lid and handle*

Weight *(Approximate):* 16 lbs. (7.2 kg)
22 lbs. (9.9 kg) with battery

Standard Accessories: Line Cord
DC Power Cord
Flexible Antenna
Lid



OPTION 05

OPTION 06

OPTIONS

02	0.05 PPM Oven (Simulcast Paging)
05	Generate Amplifier
06	Microphone
07	Telescoping Antenna

Service Facilities

IFR service centers are located in London, England; Paris, France; Mississauga, Ontario, Canada; Tokyo, Japan; Melbourne, Victoria, Australia; Wellington, New Zealand; Johannesburg, Cape Town and Durban, South Africa; Seoul, Korea; São Paulo, Brazil; Taipei, Taiwan, ROC; and our plant in Wichita, Kansas. Units sent to service centers for repair are given high priority for quick return to the owner. Calibration service is also provided at our service centers.

Metrology

We offer our customers a complete calibration check service on their test sets. Standards used in our Metrology Lab are NBS traceable. IFR is a member of the National Conference of Standards Laboratories.

Warranty

IFR Service Monitors are covered by a limited two-year warranty against defective parts and workmanship. (Optional equipment carries a 30 day warranty, batteries carry a 90 day warranty.)

The continuous improvement of its products is the intent of IFR SYSTEMS, INC., who reserves the right to make design changes without notice.

DISTRIBUTED BY:

the best is cost effective

IFR SYSTEMS, INC.
10200 West York Street / Wichita, Kansas 67215-8935 U.S.A.
Phone 316/522-4981 / TWX 910-741-6952 / FAX 316/524-2623

Litho U.S.A. 1288