MODEL TMR-2A TELEMETRY RECEIVER

- A "Universal" receiver, modular in design
- Will perform in any known telemetry system
- Economical because of its plug-in features
- Front panel selectable video band width filter, with a 12db per octave roll-off

The DEI Model TMR-2A Telemetry Receiver has been designed to fill the need for a versatile receiver in the 216-260 megacycle band that will not only meet standard FM/FM and PDM/FM applications, but PCM/FM requirements as well in systems using up to one million bits per second. IRIG recommendations in the document "Telemetry Frequency Utilization Parameters and Criteria", stress that the receiver should be frequency stable, flexible regarding bandwidth selection, and free from spurious responses and spurious emissions. The TMR-2A provides the required degree of stability by using a crystal controlled first local oscillator. A continuously tunable mode of operation is also provided for applications where reduced stability can be tolerated. Vernier tuning in either mode is obtained in the second local oscillator of the receiver. The combination of plug-in IF amplifiers to determine predetection bandwidth, simultaneous FM and AM detection and adjustable video bandwidth make the receiver suitable for use in the ground station of virtually any telemetry system currently used.

Defense Electronics, Inc.

Serving Government and Industry

WASHINGTON-ROCKVILLE INDUSTRIAL PARK
5455 RANDOLPH RD., ROCKVILLE, MARYLAND
TWX KENS 793 WHitehall 6-2600

4-62—5M

SPECIFICATIONS

Frequency Range	215 to 265 megacycles continuously tunable or crystal controlled using MIL CR-23/U crystal (no oven). Specify model TMR-2A(1) for operation with MIL CR-33/U crystal.
Receiver Stability	Crystal controlled—0.005% Continuously tunable—approx. 0.001%/C.
Vernier Tuning	± 150 kilocycles.
Type Receiver	Double Superhetrodyne; 30 mc first IF; 10 mc second IF.
Input Impedance	Operates from 50 ohm source.
Noise Figure	Less than 7 db.
Image Rejection	Greater than 60 db.
IF Rejection	Greater than 80 db.
Spurious Responses	More than 60 db below fundamental frequency response.
Spurious Emissions	Oscillator radiation within limits specified in MIL-I-6181.
IF Bandwidth	Plug-in IF amplifiers available for bandwidths of 30 kc, 50 kc, 100 kc, 200 kc, 300 kc, 500 kc, 750 kc, 1 mc and 1.5 mc.
Selectivity	60 to 6 db bandwidth ratio of approx. 2.5

FM Characteristics (Plug-in Demodulators):

Discriminator	Better than 1% linearity over a bandwidth of ± 500 kc. Better than 5% linearity over a bandwith of ± 750 kc.
Phase-lock Detector	Better than 0.5% linearity over a bandwidth of ±150 kc.
Video Output	0.08 volts/kc deviation, 20 volts peak-to-peak maximum.
Level Adjustment	Front panel control.
Output Load	As low as 600 ohms shunted by 1800 pf.
Source Impedance	Less than 50 ohms.
Frequency Response	5 cps to 1 mc (3 db).
Video Bandwidth	Low pass filter—"50 kc", "100 kc", "300 kc", "500 kc", and "1 mc" position.
AM Rejection	50% AM reference carrier deviation ± 100 kc. 400 cps to 10 kc . . . greater than 50 db 10 kc to 30 kc . . . greater than 35 db 30 kc to 80 kc . . . greater than 25 db

AM Characteristics:

Output	10 uv input (50% modulation)—approx. 1 volt rms; 10 mv input (50% modulation)—approx. 2.5 volt rms.
Frequency Response	150 cps to 250 kc (within 3 db).
Output Load	As low as 10 K ohms shunted by 500 pf.

Metering:

Tuning Meter	Indicates proper tuning on conventional telemetry signals (FM/FM, PDM/FM, PCM/FM, FM/AM, etc.)
Signal Strength Meter	Approximate indication of signal level.
Frequency Deviation Meter	25, 75, 150, 250 and 750 kc full scale. Frequency response 400 cps to 500 kc.
Output Meter	"VU" meter with adjustable reference.
Aural Monitoring	Built in audio amplifier, gain control and speaker.
Miscellaneous Outputs	(1) Signal Display Unit (DEI Type TDU-2). (2) Signal strength recording (cathode follower output). (3) 10 mc IF Output (predetection recorder output with predetection plug-in accessory unit). (4) Noise figure measurement.
Size	8¾" x 19" x 15" designed for mounting in a standard rack.
Weight	Approximately 50 pounds.
Power Input	117V AC, 60 cycles, approximately 200 watts.

We reserve the right to make changes in specifications.

Prices available on request, write for specific quotation.

Defense Electronics, Inc.