



AUG 5 1963

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TECHNICAL BULLETIN NUMBER 3009

Communications Receiver  
TMC Model GPR-91RXD



The Technical Materiel Corporation's Model GPR-91RXD Communications Receiver has all of the fine features of the widely accepted GPR-90RXD receiver *plus* 15 kc bandpass for ISB reception of four voice channels or up to 64 teletypewriter channels, when used with Model SBC-2 (AN/URA-42/TD-410/UGC) sideband converter.

Dual signal conversion, low noise figure, common diode load and an excellent AGC circuit enhance the operation of this receiver in diversity reception.

Two of these receivers with a common oscillator such as TMC's Model VOX-5 to control the HFO, IFO and BFO frequencies create one of the finest diversity receivers available on the market today.

Model GPR-91RXD is patterned after Model GPR-90RXD which has received wide acceptance in Project Mercury tracking stations, at airport facilities, at foreign military installations, pipeline communication nets and tropical plantations, to name a few.

Other ancillary devices are available within TMC's product line to fulfill your most exacting requirements and our engineering department will be happy to assist you in any reception problem you may have.

# Communications Receiver

## TECHNICAL SPECIFICATIONS

FREQUENCY RANGE: .54 to 31.5 megacycles in 6 bands, continuous tuned.

MAIN BAND CALIBRATION:

BAND 1.	.54 to 1.4 mc.
2.	1.4 to 3.3 mc.
3.	3.2 to 5.6 mc.
4.	5.4 to 9.6 mc.
5.	9.4 to 17.8 mc.
6.	17.3 to 31.5 mc.

BAND SPREAD CALIBRATION:

BAND (Meters)	FREQUENCY (Mc)
160	1.8 to 2.0
80	3.5 to 4.0
40	7.0 to 7.3
20	14.0 to 14.35
15	21.0 to 21.45
11	26.95 to 27.54
10	28.0 to 29.7

MODES OF RECEPTION: AM, CW, and MCW signals. 15 kc ISB reception with Model SBC-2. FSK when used with audio type frequency shift converter, such as TMC Model CFA.

INPUT IMPEDANCE: Nominal 70 ohms unbalanced.

ANTENNA TRIMMER: Front panel control permits peaking of antenna circuit.

NOISE FIGURE: Better than 6 db.

SENSITIVITY: Better than 1 microvolt from 1.4 to 31.5 mc; intentionally desensitized to 5 microvolts from .54 to 1.4 mc.

STABILITY:

1. Crystal control — 1 part  $10^5$  per day.
2. Better than .002% first three bands and .003% remainder of range. These figures are after warm-up at a normal ambient and will hold for usual operating periods.
3. Control of HFO, IFO and BFO by means of TMC Model VOX-5.

IF SELECTIVITY: Variable in six steps from 250 cycles to 15 kilocycles, 5 crystal and 1 non-crystal positions.

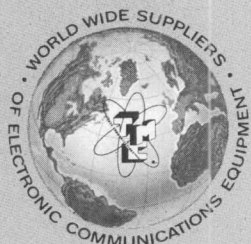
## TMC Model GPR-91RXD

HFO CONTROL:	1 variable and 10 crystal positions plus connector for external oscillator, CR 18/U, .995 to 35.455 mc.
HFO EXTERNAL INPUT:	Not less than 1 volt into 72 ohms impedance. UG-88/U.
BFO CIRCUIT:	High stability variable BFO.
CRYSTAL CALIBRATOR:	Provides 100 kc markers throughout the tuning range.
IMAGE RATIO:	Average 80 db.
IF REJECTION:	455kc—Average 85 db. 3.995mc—Average 100 db.
NOISE LIMITER:	A highly effective series type audio noise limiter.
AGC CHARACTERISTICS:	With an 80 db change in the input signal, the output remains constant within $\pm 6$ db.
IF OUTPUT:	455 kc, 50 ohms, .1 volt for MSR-4 or other IF accessory equipment.
REAR PANEL FACILITIES:	Antenna connections Fuse Loudspeaker connections Relay standby connections Phono ON/OFF Phono input SSB selector switch External HFO input AGC Diode load External BFO in External IFO in
ACCESSORY FACILITIES ON REAR PANEL:	115 volt AC outlet. Utility power socket provides: 6.3 volts, .6 amp. 250 volts, 0.1 amp.  Coaxial IF output for SSB adapter input.
AUDIO RESPONSE:	$\pm 1.5$ db 70 to 12,000 cps.
AUDIO OUTPUT:	2 watts, 4, 8, 16, and 600 ohms.
HUM LEVEL:	Better than 60 db down.

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AUDIO SELECTIVITY:	Specially designed audio selectivity control with variable bandwidth.
METERING:	Calibrated "S" meter.
PRIMARY POWER:	115/230 volts, 50/60 cycles, approximately 90 watts.
SIZE (rack mount):	19" wide x 10½" high x 14" deep.
INSTALLED WEIGHT:	63 lbs.
TEMPERATURE AND HUMIDITY:	0 to 50° C, up to 90% humidity.
SHIPPING WEIGHT & SIZE:	160 lbs. (export packed), 6.2 cu. ft. Export size—27" x 23" x 18"
LOOSE ITEMS:	All mating coaxial connectors and 2 instruction books are provided.
INSTRUCTION BOOKS:	IN 3009.
COMPONENTS AND CONSTRUCTION:	Equipment manufactured in accordance with JAN/MIL specifications wherever practicable.
ACCESSORY EQUIPMENT:	Use TMC Model MSR-4 or MSR-5 for upper or lower sideband operation; use TMC Model VOX-5 for diversity operation where VMO is required.

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