

SALES SERVICE BULLETIN NUMBER 205

Communications Receiver, Model GPR-90RX
Receiver Set Radio R-840 URR



- SSB - POINT TO POINT OPERATION
 - EXTERNAL HFO POSITION
 - .54 to 31.5 MCS
 - 100 KC CALIBRATION

There has been considerable demand for stabilities in Single Sideband Operation which can only be achieved by crystal or synthesizer operation. As a consequence, T.M.C. has developed the Model GPR-90RX Receiver which not only provides the high quality characteristics of the regular GPR Receiver, but also permits the use of 10 precisely adjustable crystal positions available from the front panel plus a rear deck input for an external high stability control oscillator or synthesizer.

Because of the ease with which the crystals may be adjusted, point to point and net operation become simple and straight forward operational procedures.

The audio selectivity feature found so desirable in the GPR-90 and the RCR Series is even more usable because of the high stability characteristics of this receiver.

The limits of adjustment of this variable audio selectivity feature are shown in the curve entitled Audio Fidelity.

In addition, the Model GPR-90RX includes all of the field proven features of the Model GPR-90 such as a grounded grid input stage, low intermodulation, delayed AVC, audio selectivity and excellent radio response.

On the last page of this bulletin will be found several combinations of the GPR-90RX with other units of our manufacture for monitoring and single or independent sideband operation.

TECHNICAL SPECIFICATIONS:

FREQUENCY RANGE: .54 to 31 megacycles in 6 bands.

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

TYPE OF RECEPTION: AM, CW, MCW and SSB signals. FS when used with appropriate audio type frequency shift converter.

TUNING SYSTEM: Accurately calibrated main tuning dial with "Conelrad" markings plus auxiliary dial with full electrical bandspread.

ANTENNA INPUT CIRCUIT: 75 ohms unbalanced, 300 ohms balanced with built-in ferrite transformer providing accurate matching.

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

H F O 1 variable and 10 crystal positions plus connector for external oscillator.

HFO CRYSTALS: CR 18/U, 0.955 to 20.0 Mcs.

HFO EXTERNAL INPUT: Not less than 1 volt into 75 ohms impedance. UG-88/U.

BFO CIRCUIT: High stability variable BFO.

CRYSTAL CALIBRATOR: Provides 100 Kc markers throughout the tuning range.

SENSITIVITY: Better than 1 microvolt from 1.5 to 31 Mc for AM, CW, MCW, FS and SSB signals. Intentionally desensitized to 5 microvolts from .54 to 1.5 Mc.

ALL measurements are for a 10 db signal to noise power ratio at FULL RATED OUTPUT.

IMAGE RATIO: Average 85 db.

VFO STABILITY: 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.

XTAL STABILITY: Dependent on crystal used.

AVC CHARACTERISTICS: With an 80 db change in the input signal, the output remains constant within 12 db.

SELECTIVITY: Variable in six steps from 200 cycles to 5 kilocycles, 5 crystal and 1 non-crystal position.

OUTPUT IMPEDANCE: 4, 8, 16, and 600 ohms.

HUM LEVEL: Better than 60 db down

OUTPUT POWER: 2 watts high quality audio output.

INPUT POWER: 115/230 volts, 50/60 cycles, approximately 90 watts.

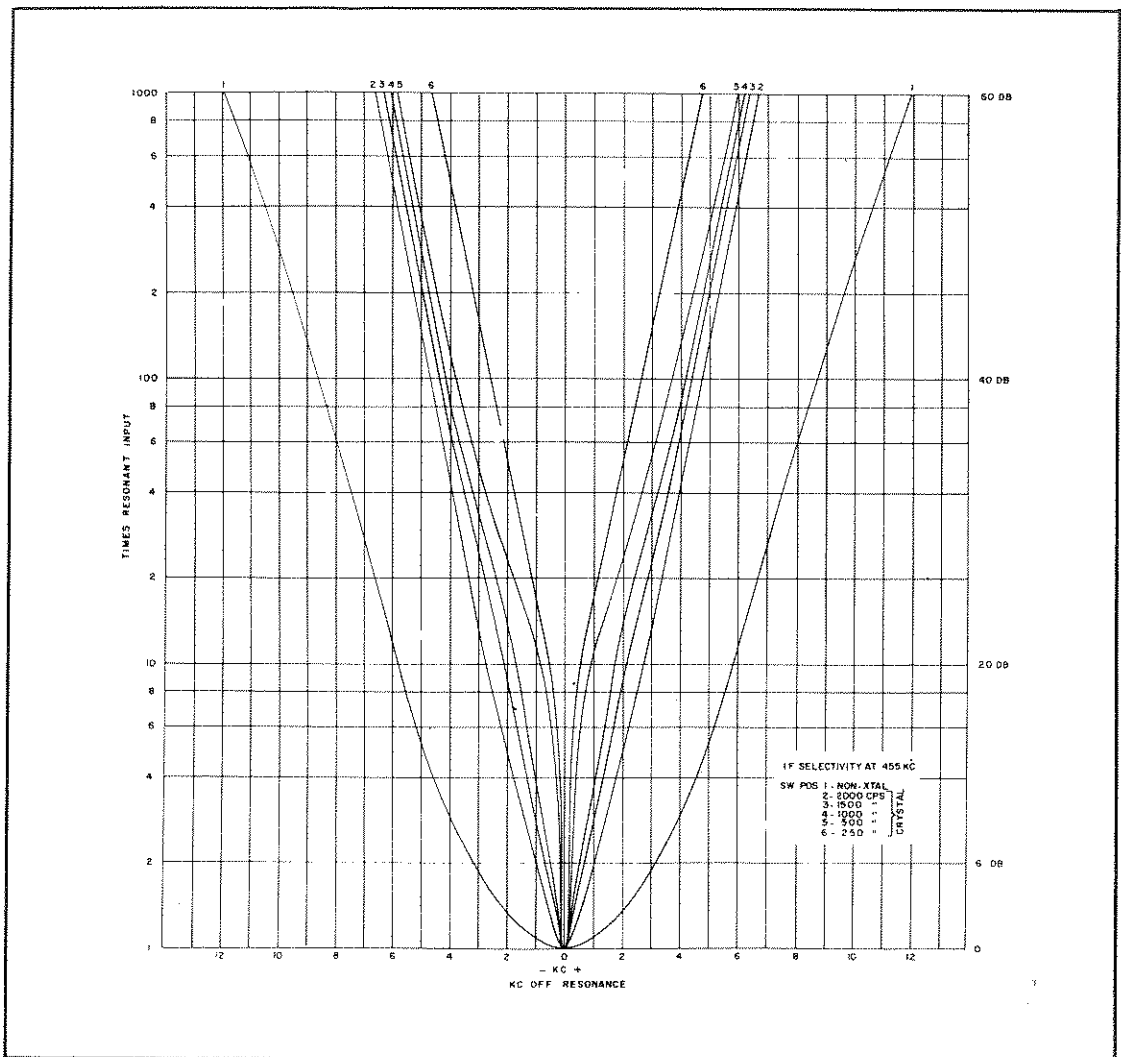
NOISE LIMITER: A highly effective Noise Limiter circuit is provided.

METERING: Calibrated "S" meter.

AUDIO SELECTIVITY: Specially designed Audio Selectivity control with variable bandwidth.

FRONT PANEL CONTROLS: Main Tuning Dial
Bandspread Dial
Range Selector
Antenna Tune
Xtal Phase
HFO Crystal Adjust
HFO Selector Switch
RF Selectivity
Audio Gain
Calibrate
Receive/Send
AVC/MANUAL
Noise Limiter
BFO ON/OFF
Audio Spread
Phone jack.
RF Gain
BFO Pitch
Audio Selector
Dial Locks

REAR PANEL FACILITIES: Antenna connections
Fuse
Loudspeaker connections
Relay Standby connections
Phono ON/OFF



REAR PANEL FACILITIES:
(continued)

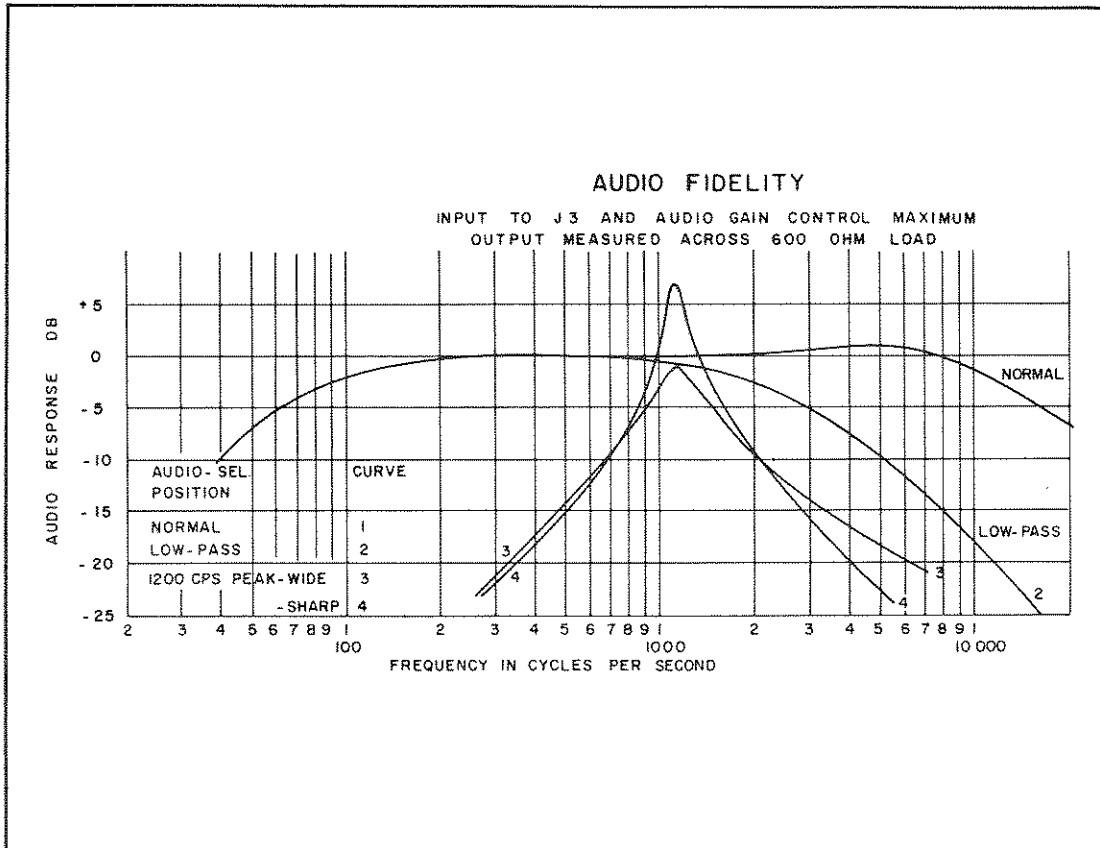
Phono input
SSB Selector Switch
External HFO Input

**ACCESSORY FACILITIES ON
REAR PANEL:**

115 VAC outlet. Utility power
socket provides 6.3 V .6 amp.,
250 V .01 amp.
Coaxial IF output for SSB
Audio input for SSB

TUBE COMPLEMENT:

6AB4 Grounded Grid Input RF Amplifier
6CB6 2nd RF
6AU6 1st Converter
6AG5 Oscillator
6BE6 2nd Converter and Oscillator
6BA6 IF Buffer Amplifier
3- 6BA6 IF Amplifiers
6AL5 Detector and Noise Limiter
6AG5 BFO



TUBE COMPLEMENT:
(continued)

12AX7 AVC and Audio Amplifier
6V6 Output
OA2 Regulator
5U4G Rectifier
6AU6 Calibrator
6AG5 Amplifier, Crystal Oscillator

MOUNTING:

Standard W.E. Relay Rack. w/ dust cover

SIZE (rack mount):

19" wide x 10-1/2" high x 14" deep

SHIPPING DATA:

WEIGHTS	
NET	GROSS
62 lbs.	79 lbs. 160 lbs.

DIMENSIONS

Carton - 25" x 21" x 16"
Export - 27" x 23" x 18"

COMPONENTS
AND CONSTRUCTION:

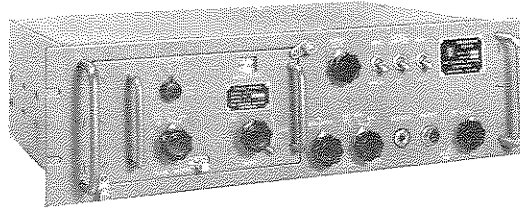
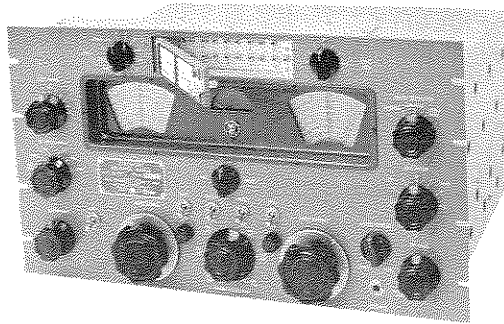
Equipment manufactured in accordance with JAN specifications wherever practicable.

LOGISTIC DATA:

Receiver Set, Radio R-840/URR
FSN w/Spares F5820-543-1216

AN IDEAL HF/LF MONITOR COMBINATION

Model GPR-90RX (R-840/URR)	Receiver Set, Radio	.54 to 31.5 Mcs.
Model FFR (AN/FFR-49 (V))	Receiver Set, Radio	50 to 400 Kcs. 2 to 32 Mcs.

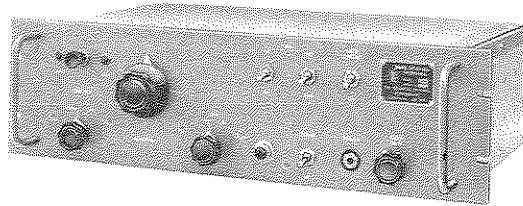
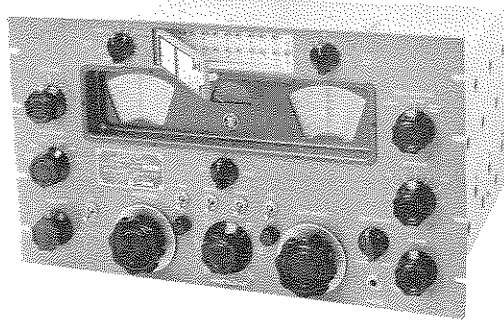


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SINGLE SIDEBAND COMBINATION

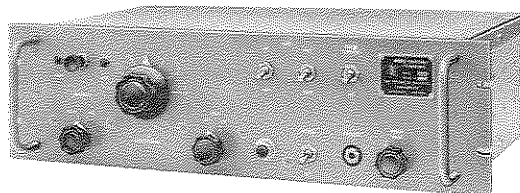
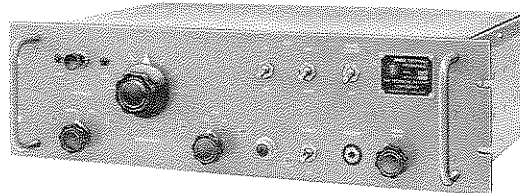
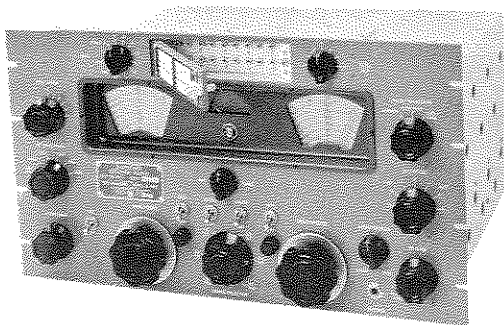
Model GPR-90RX (R-840/URR)	Receiver Set, Radio
Model MSR-1 (CV-591/URR)	Mode Selector, Receiving

Manual, Fixed Crystal or Remote fine tuning of a sideband signal.



SIMULTANEOUS RECEPTION OF TWO INDEPENDENT SIDEBANDS

Model GPR-90RX (R-840/URR)	Receiver Set, Radio	
Model MSR-1 (CV-591/URR)	Mode Selector, Receiving	2 Required



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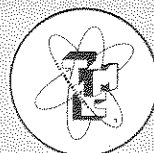
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THE TECHNICAL MATERIEL CORPORATION

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CABLE
TEPEI
NEW YORK, N.Y.



COMMUNICATION ENGINEERS

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