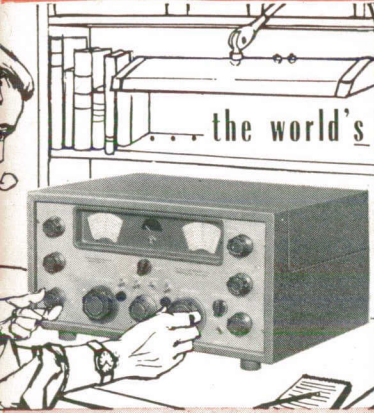
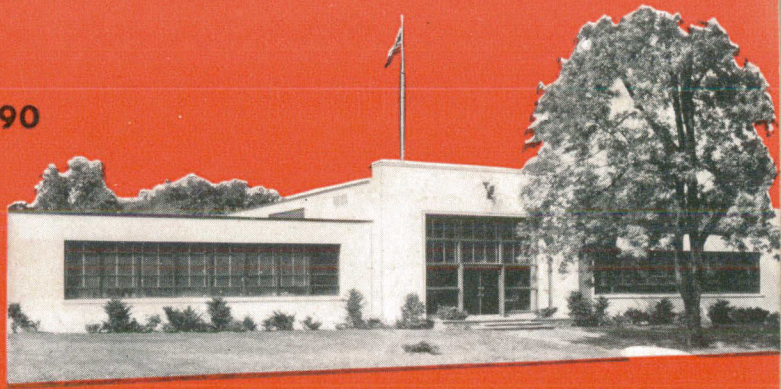


THE HOME OF THE GPR-90



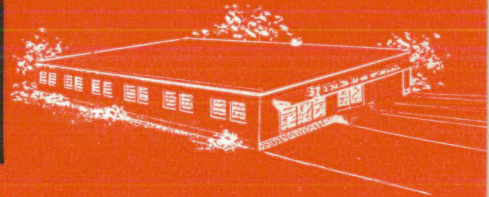
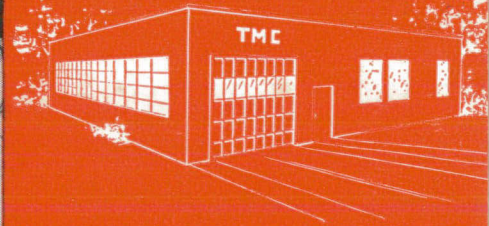
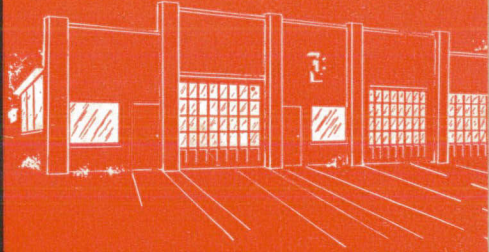
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MAMARONECK, NEW YORK



THE TECHNICAL MATERIEL CORPORATION

COMMUNICATION RECEIVER

The Model GPR-90 Receiver is a professional, general purpose communications receiver of the double conversion superheterodyne type covering the frequency range of .54 to 31 mcs. The receiver features low noise, excellent selectivity, a highly stable HFO and BFO, accuracy in calibration, the finest components, and is designed for ease of servicing.

New and novel features such as low noise grounded grid broadbanded ferramic input stage, low intermodulation, delayed AVC, audio selectivity and excellent audio response make this the finest receiver in its class.

FREQUENCY RANGE: .54 to 31 mcs in six bands. **TYPE OF RECEPTION:** AM, CW, MCW, FS and SSB. **TUNING SYSTEM:** Accurately calibrated main tuning dial plus full electrical bandspread. **SENSITIVITY:** Better than 1 microvolt for 10 db signal to noise ratio. **IMAGE RATIO:** Average 85 db. **CRYSTAL CALIBRATOR:** Provides 100 kcs markers through tuning range. **STABILITY:** Better than .002% first three bands and .003% remainder of range.



(FCDA APPROVED)

GPR-90



BULLETIN 179

RADIO TRANSMITTER

The Model GPT-750 Radio Transmitter is a general purpose transmitter providing radio-telephone, telegraph, frequency shift, facsimile and Single Sideband operation on all frequencies within the range 2 to 32 Mcs.

The transmitter is completely bandswitched. It contains a high stability direct reading master oscillator. The transmitter is constructed on a building block basis, using slide-in drawers thereby permitting economic combinations to suit a particular service.

FREQUENCY RANGE: 2 to 32 Megacycles bandswitched. **POWER RATINGS:** 1000 watts output CW and FS, 750 watts output Radio Telephone, 750 watts PEP Single Sideband.

FREQUENCY CONTROL: Direct Reading Master Oscillator plus three crystal positions. **MASTER OSCILLATOR STABILITY:** Better than 20 parts per million. **FREQUENCY CALIBRATION:** By means of a built-in oven controlled 100 kcs crystal oscillator with visual Zero Beat indication. **COOLING:** Forced Filtered Air in a steel pressurized cabinet. **RUGGEDNESS:** Designed for mobile application, with the addition of shock mounts.



(FCDA APPROVED)

GPT-750



BULLETIN

SINGLE SIDEBAND ADAPTER

The Model GSB-1 Single Sideband Adapter is a filter type slicer permitting accurate and simple tuning of Single Sideband, AM, CW and MCW signals. The unit incorporates features which will improve any receiving system. The filter provides additional selectivity and pass-band tuning. Additional AVC (FAST/SLOW) prevents powerful local stations from over-loading the receiving system. The noise limiter reduces impulse peaks. Electrical bandspread eliminates the critical frequency adjustments characteristic of single sideband tuning. Upper and lower sidebands are selected by a flip of a switch:

FREQUENCY RANGE: 452 to 458 kcs. **RECEPTION:** AM, SSB (upper or lower), CW, and exalted carrier. **INPUT:** 0.1 to 10 volts. **OUTPUT:** One Watt into 6, 8, 16 or 600 ohms. **TUNING:** Bandspread control calibrated in cycles.



GSB-1



BULLETIN 194

REMOTE CONTROL AMPLIFIER

The Model RTC Remote Control Amplifier is a multi-purpose unit providing amplification for a low level microphone, selectable peak clipping and variable tone output for MCW. The unit also makes possible remote keying, break-in and other semi-remote transmitter control functions.

The peak clipping feature may be switched into operation by means of a front panel switch. The clipping characteristic is continuously adjustable 0 to 20 db, and high and low pass filters are provided.

INPUT LEVEL: Minus 50 db for full output. **OUTPUT LEVEL:** 0 volts to plus 6 dbm, continuously variable. **FREQUENCY RESPONSE:** Plus/Minus 2 db from 100 to 7500 cps. **DISTORTION:** Less than 2% total harmonic. **CLIPPING:** 0 to 20 db continuously adjustable.



(FCDA APPROVED)

RTC



BULLETIN 183

ANTENNA TUNING UNIT

The Model TAC Antenna Tuning Unit matches the 70 ohm unbalanced output of a radio transmitter to balanced or unbalanced loads ranging from 50 to 1200 ohms over the frequency spectrum 2 to 30 Mcs.

The Tuning Unit incorporates a unique, continuously variable, contact type inductance with switched taps to control the loading of the transmitter over the frequency range. Capacitor spacing and teflon insulation prevents flash-over.

FREQUENCY RANGE: 2 to 30 Mcs. **INPUT IMPEDANCE:** Nominal 75 ohms unbalanced. **OUTPUT IMPEDANCE:** 50 to 1200 balanced or unbalanced. **RF POWER RATING:** 1000 watts input.

BULLETIN 163

TAC



COMMUNICATIONS RECEIVER

(AN/FRR-49(V))

The Model FFR is a highly versatile receiver, covering the frequency range 50 Kcs to 32 Mcs and is used for dependable, unattended continuous reception of AM, CW, MCW, FS and SSB signals. Provision is made for Crystal, Internal and External operation of the HFO and BFO. Rapid frequency change is made possible by means of accurately calibrated pretuned plug-in 'front ends'. Remote control and diversity features are incorporated as standard features. The Receiver is also available with squelch (CODAN), and for Beacon Monitoring purposes.

FREQUENCY RANGE: 50 to 400 kcs, 500 kcs, 2 to 32 mcs. **BAND CHANGE:** By means of pretuned, preheated, receiver front ends. **TYPE OF RECEPTION:** AM, CW, MCW, FS and SSB. **CONTROL:** Manual or remote. **FREQUENCY CONTROL:** Crystal or VFO. **SENSITIVITY:** Better than 1.0 microvolt for 10 db Signal to Noise Ratio. **OVERALL SELECTIVITY:** 2 to 32 mcs—Less than 5 kc at 6 db down. Variable Selectivity—50 kc - 400 kc. 5, 1.3, 0.5, 0.3 kc at 6 db down.

BULLETIN 124

FFR



PORTABLE MASTER OSCILLATOR

(O-459/URT)

The Model PMO Portable Master Oscillator and Heterodyne Frequency Meter is a highly stable, precision, direct reading device used as a transmitter exciter, frequency meter or receiver calibrator. It provides output over the range 2 to 8 mcs and is directly calibrated by means of a counter-dial system over the range of 2 to 4 mcs. An oven controlled 100 kc oscillator provides visual calibration of the unit.

FREQUENCY RANGE: 2 to 8 mcs. **OUTPUT:** 3 Watts adjustable into 70 ohms. **STABILITY:** Better than 20 parts per million for a 30 degree C change in ambient. **CALIBRATION:** Direct reading in cycles 2-4 mcs. **READABILITY:** Resetability, 30 parts per million to a previously calibrated frequency. **CALIBRATION:** Against a calibrator controlled 100 kc crystal oscillator with visual indication.

BULLETINS 173 & 193

PMO



VARIABLE FREQUENCY OSCILLATOR

(O-330/FR)

The Model VOX Variable Frequency Oscillator is a direct reading, precision variable frequency device designed to replace the crystal oscillator of a diversity receiver or of a transmitter. This oscillator is also used as a secondary standard.

The VOX provides a continuously variable output over the range 2 to 64 mcs, with direct reading calibration over the basic oscillator range with better than .002% long term stability. Frequency calibration is provided by means of an oven controlled 100 kc crystal oscillator with visual Zero Beat indication.

FREQUENCY RANGE: 2 to 64 mcs. **OUTPUT:** 3 - 75 ohm coaxial outputs. **STABILITY:** Better than 20 parts per million for Zero to 50 degrees C change in ambient. **RESETABILITY:** Better than 20 parts per million to a calibrated frequency. **ADDITIONAL FEATURES:** 1. Crystal BFO for receiver control provided. 2. Crystal IFO for receiver control provided. 3. Three HFO crystal positions provided.

BULLETIN 134

VOX-2



FREQUENCY SHIFT CONVERTER

The Model CFA Frequency Shift Converter is an audio type, dual channel converter for use with diversity or single receiver systems, used to convert the mark and space tones of a frequency shifted signal into DC pulses capable of operating a teletypewriter.

The CFA is a compact equipment incorporating visual monitoring, wide signal drift acceptance, mark hold and bias correction. The unit is available for optimized narrow shift applications.

INPUT LEVEL: Minus 30 to plus 30 dbm. **LIMITING:** 50 to 60 db per channel. **INPUT FREQUENCY DRIFT LIMITS:** Up to 1500 cycles. **KEYING SPEEDS:** Up to 600 wpm. **TUNING INDICATOR:** Two inch cathode ray tube. **OUTPUT CIRCUIT:** Neutral, either side grounded or floating.

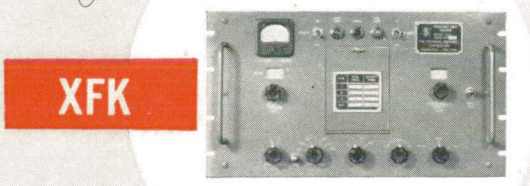


CFA
BULLETIN 120

FREQUENCY SHIFT EXCITER

The Model XFK Frequency Shift Exciter is a high stability radio frequency oscillator which replaces the crystal oscillator in the transmitter and provides the mark and space pulses necessary for the transmission of teleprinter, telegraph, narrow band FM telephone, facsimile or telephoto intelligence. The XFK features two precision temperature controlled ovens providing the high stability required for unattended operation.

FREQUENCY RANGE: 1 to 6.9 mcs. **FREQUENCY SHIFT:** Linear to 1000 cycles. **OUTPUT:** 3 Watts adjustable into 70 ohms. **CONTROLS:** Directly calibrated in frequency. **FREQUENCY CONTROL:** 3 crystal positions and one external oscillator position. **KEYING SPEED:** 1000 wpm. **STABILITY:** 10 cycles for an ambient change of 50 degrees C. **TRANSMITTER MULTIPLICATION:** Automatic by means of a unique patching system.

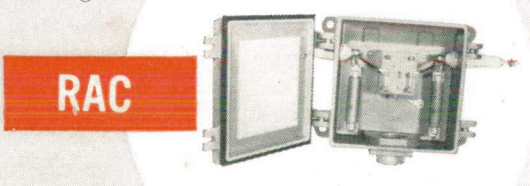
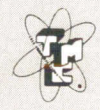


XFK
BULLETIN 118

RHOMBIC ANTENNA COUPLER

The Model RAC Rhombic Antenna Coupler is a broadbanded transformer covering the frequency range 2 to 60 megacycles and is used to match an unbalanced transmission line to a balanced antenna. The coupler is housed in a cast aluminum weather-tight case. Lightning protection and DC continuity is provided.

FREQUENCY RANGE: 2 to 60 megacycles. **INPUT IMPEDANCE:** 700 and 200 ohms balanced. **OUTPUT IMPEDANCE:** 70 ohms unbalanced. **FREQUENCY RESPONSE:** Within 3 db over frequency range. **LIGHTNING PROTECTION:** By means of adjustable or gas filled gaps.

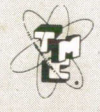


RAC
BULLETIN 112

TRANSMITTING ANTENNA DISSIPATORS TERMINATING RESISTORS AND DUMMY LOADS

The TER Series are special non-inductive resistive elements packaged for indoor or outdoor use as transmitting terminators, dissipators and dummy loads. The resistors are of a new design providing a minimum of reactance. The entire assembly is shock mounted in a plastic case and may be quickly removed for service. The resistors may be instantly brought up to full rated output power at minus 40 degree C without harm.

FREQUENCY RANGE: DC to 30 megacycles. **POWER RATINGS:** 500, 1750 and 5000 watts. **IMPEDANCES:** 70 or 600 ohms balanced or unbalanced. **COOLING:** Natural Air Cooling. **OPERATING TEMPERATURE:** Minus 40 to plus 100 degrees C.



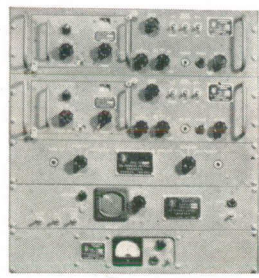
SERIES TER
BULLETIN 188

DIVERSITY RECEIVING PACKAGE

The Model DRP-1 Diversity Receiving Package combines the Model FFR (AN/FRR-49(V) Receiver, the Model CFA, FS Converter, and the Model PSP, Power Supply, into a compact, easy to operate system capable of receiving AM, FS, CW and MCW signals in diversity within the frequency range of 50 to 400 Kcs and 2 to 32 Mcs. Either SPACE or FREQUENCY Diversity may be used. Pretuned, plug-in, receiver 'front ends' provide quick frequency change. The package may be remotely controlled by use of the Model RCR (AN/FRA-501) Remote Control System.

FREQUENCY RANGE: 50 to 400 Kcs and 2 to 32 Mcs. **RECEPTION:** AM, FS, CW and MCW. **FREQUENCY CONTROL:** Crystal, Internal or External VFO and BFO. **REMOTE CONTROL:** By means of Model RCR Remote Control System. **DIVERSITY COMBINING:** AM-MCW-CW—Common diode load, FS-CW—Audio type converter Model CFA. **OUTPUT:** Audio output 8 or 600 ohms, teletypewriter output DC into 2000 ohms.

BULLETIN 170



DRP-1



BULLETIN 190



DDR-3



DUAL DIVERSITY RECEIVER

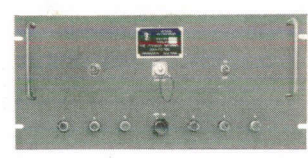
The Model DDR-3 Dual Diversity Receiver is an all-purpose receiving system, covering the frequency range of .54 to 31 mcs, for the reception of AM, FS, CW, MCW and SSB signals in diversity. The system incorporates the new Model GPR-90 Receiver in conjunction with the VOX Variable Frequency Oscillator, a unique diversity combining unit and a visual tuning indicator.

FREQUENCY RANGE: .54 to 31 mcs. **RECEPTION:** AM, FS, CW, MCW and SSB. **FREQUENCY CONTROL:** Crystal or high stability VFO. **DIVERSITY COMBINING:** AM, CW and SSB—By means of Model DCU Combining Unit, FS—Audio type converter, Model CFA.

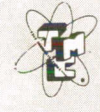
ANTENNA MULTICOUPLER

(CU-5013/SRR)
The Model AMC-6 is a broadbanded branching amplifier which permits the connection of six high frequency receivers to one antenna. The unit provides excellent isolation between receivers and effectively prevents re-radiation into the antenna system. By use of the AMC, the overall noise figure of a receiver system is improved throughout the operating band and the receiver sensitivities are usually increased. Cascade operation will provide up to 36 receiver outputs.

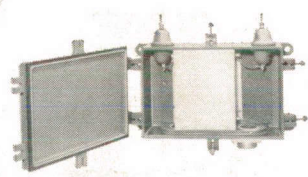
BULLETIN 155



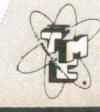
AMC-6



BULLETINS 178-180



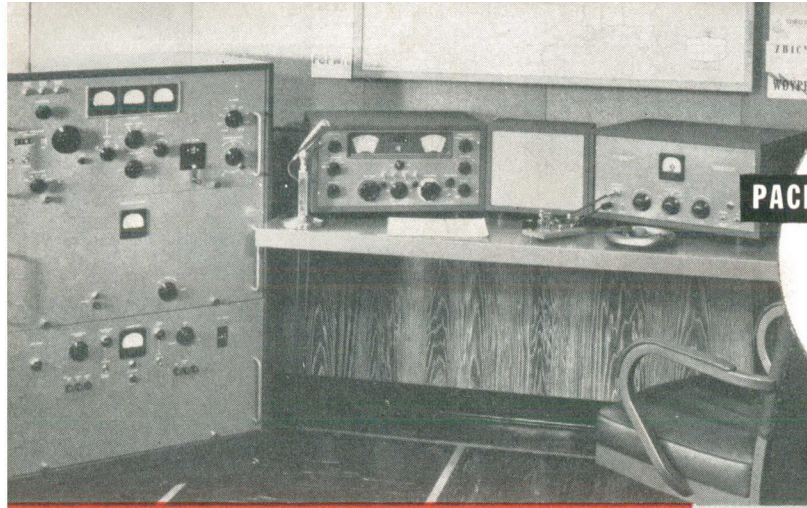
SERIES TRC



SERIES TRC

The TRC Series are transmitting type broadbanded antenna couplers for transferring RF Power from unbalanced inputs to balanced outputs over the frequency range 2 to 30 Mcs. These are passive transformer devices requiring no tubes, power supplies or tuning adjustments.

TRC 100	100 watts
TRC 500	500 watts
TRC 3500	3500 watts

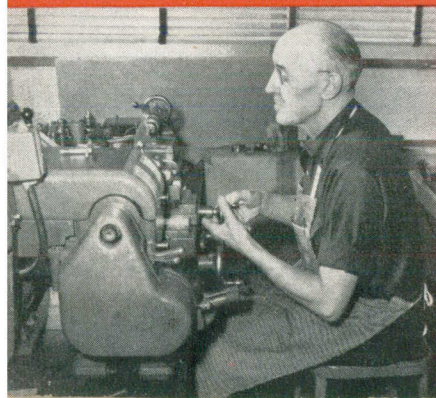
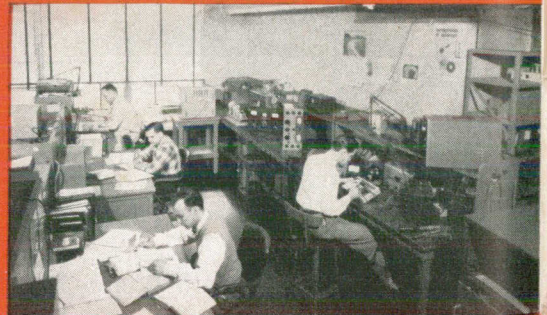
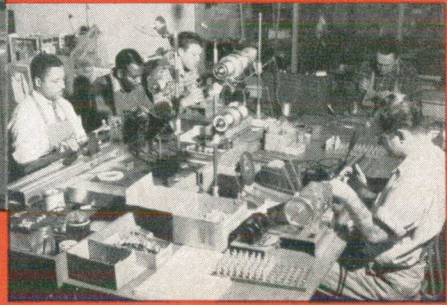


SERIES
5700

PACKAGE STATION

... a complete station, approved for FCDA Funds, consisting of the GPT-750, the GPR-90, the RTC and all accessories including choice of antenna, microphone and key.

ALL THE ILLUSTRATED EQUIPMENT IS
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