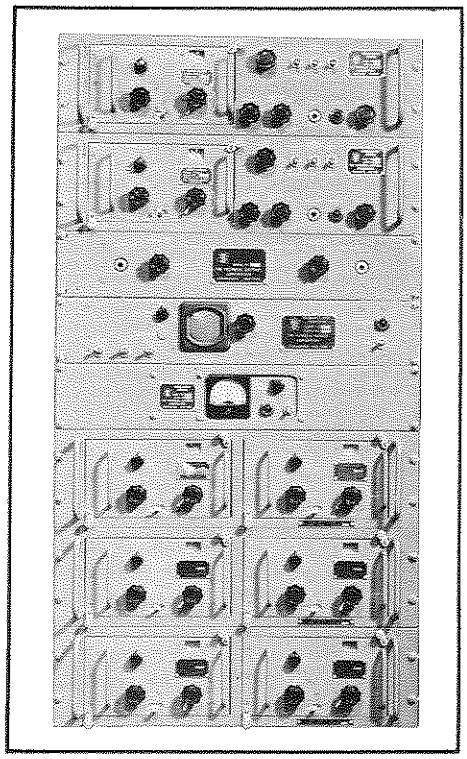
# SALES SERVICE BULLETIN NUMBER 170A

## Diversity Receiving Package, Model DRP-1



The TMC Diversity Receiving Package, Model DRP-1 was designed to provide a compact, easy to operate equipment capable of receiving AM, FS, CW, and MCW signals within the frequency range of 50-400 kcs and 2 to 32 megacycles.

The basic receiver in the package is the TMC Communication Receiver, Model FFR. This receiver has proven to be one of the most versatile and efficient receivers in the field.

The Model DRP-1 system may be used for either "SPACE" or "FREQUENCY" diversity reception and the changeover for either type of reception is done by simple coaxial connections at the rear of the equipment.

The receivers are designed for operation with common oscillator control on a MASTER-SLAVE basis using either crystal or VFO operation of the HFO and BFO.

Complete flexibility is provided so that all common types of diversity combining can be achieved. Frequency shift operation is provided by the use of TMC Frequency Shift Converter, Model CFA.

Field tests of the DRP-1 system have proven it to be extremely valuable for fixed point-to-point requirements such as those required by Press or Communications organizations. Daily frequency change requirements are very simple and are accomplished by plugging in new pre-tuned tuning drawers. The initial tuning of these drawers requires no special equipment. Each drawer is directly calibrated in frequency and may be securely locked to the desired frequency.

The TMC Diversity Receiving Package, Model DRP-1, consists of the following equipment:

| | |
|---|---|
| Two | Model FFR, Communication Receivers, each complete with one Model FFRD-*, Tuning Drawer. |
| One | Model CFA, Frequency Shift Converter. |
| One | Model PSP-1, Teletypewriter Power Supply. |
| One | Model SFP-2, Filter Panel (*See Note) |
| Three | Model FFR-DP, Storage Panels, each containing two Model FFRD-*, Tuning Drawers. |
| One | Rack and Cable Assembly. |

*NOTE: The Model SFP-2 is optional and is only required when severe conditions of adjacent channel interference are anticipated.

## TECHNICAL SPECIFICATIONS

| | |
|---|---|
| FREQUENCY RANGE: | 50 - 400 kcs and 2 to 32 Megacycles |
| BAND CHANGE: | By means of plug-in tuning drawers, covering the following frequencies:<br>FFRD-1 covers 50 - 100 kcs.<br>FFRD-2 covers 100 - 200 kcs.<br>FFRD-3 covers 200 - 400 kcs.<br>FFRD-3M covers 500 kcs.<br>FFRD-5 2 to 4 megacycles.<br>FFRD-6 4 to 8 megacycles.<br>FFRD-7 8 to 16 megacycles.<br>FFRD-8 16 to 32 megacycles. |
| TYPE OF RECEPTION: | AM, CW, FS, and MCW Signals. |
| Diversity Combining AM and MCW: | Diode load combination using a single receiver audio amplifier output. |
| CW: | Either diode load combination as for AM or by means of the CFA converter. |
| FS: | Utilizing the TMC Model CFA, Frequency Shift Converter. |
| ANTENNA INPUT CIRCUITS: | 75 ohms unbalanced, 300 ohms balanced. |
| HFO Circuit: | Crystal or Internal VFO operation. |
| BFO Circuit: | Crystal or Internal BFO operation. |
| Sensitivity: | 2.5 microvolts for a 10 db signal to noise power ratio at 30 megacycles. |
| Image Ratio: | Better than 60 db, 2 to 16 mcs, and not less than 40 db, 16 to 30 mcs. |
| Selectivity: | 5 kc at 6 db down.<br>25 kc at 60 db down. |
| Overall Selectivity: | Less than 5 kcs at 6 db down. |

| | |
|---|---|
| AVC Characteristics: | With an 80 db change in the input signal the output remains constant within 12 db. |
| Hum Level: | Better than 40 db. |
| Output Impedances: | 1. Audio output 8 or 600 ohms unbalanced.<br>2. Teletypewriter output adjustable up to a 2000 ohm load. |

FREQUENCY SHIFT CHARACTERISTICS:

| | |
|---|---|
| Input Frequency Shift Limits: | 100 to 1000 cps centered at 2550 cps. * |
| Received Signal Frequency Drift Limits: | 1 1/2 times maximum shift (1500 cps.) |
| Keying Speeds: | 100 to 600 words per minute in high speed position and up to 100 words per minute in low speed position. |
| Tuning Indicator: | Two inch cathode ray tube. |
| Bias Correction: | A bias correction control permits correction of fixed "marking" or "spacing" bias of the received signal. |
| Mark Hold: | Automatic Mark Hold feature places output circuit in "marking" condition during signal dropouts. |
| Output Load: | 75 ma maximum into 2000 ohms with lower values of current into higher impedances, available grounded or ungrounded on either side. |

FILTER CHARACTERISTICS:

| | |
|---|---|
| Center Frequencies: | Two each filters centered at 2125 cps and two each at 2975 cps. |
| Filter Bandwidths: | 1. Space Filters:<br>Centered at 2125 cps. Flat within 3 db to plus or minus 100 cps. down not less than 40 db at 340 cps.<br><br>2. Mark Filters:<br>Centered at 2975 cps. Flat within 3 db to plus or minus 125 cps. down not less than 45 db at 475. cps. |

CONTROLS:

| Receiver | Converter |
|---|---|
| Noise Limiter | Power On |
| Audio Gain | Channel Selector |
| BFO MASTER/SLAVE | MARK, SPACE, LINE test |
| AVC ON/OFF | Threshold |
| RF Gain, Power On | Mark Bias |
| BFO Pitch | Monitor Intensity |
| | Monitor Focus |
| Filter | Sense |
| Selector | Monitor Centering |
| PANEL OUT | Line Current |
| FILTER IN | Speed |
| FILTER OUT | Pulse Restorer |

* Low Frequency, Narrow Shift Converter available on request.

POWER REQUIREMENTS: 110/220 volts, 50/60 cps, 310 watts.

DIMENSIONS: 68'' high x 22'' wide x 18'' deep. (with full complement as illustrated)

WEIGHT: 215 lbs net, 350 lbs gross packed for export.

COMPONENTS AND CONSTRUCTION: Equipment is manufactured in accordance with JAN/MIL specifications wherever practicable.

TUBE COMPLEMENTS:

| Receiver | Tuning Drawers | Converter |
|---|---|---|
| 3 6BA6 | FFRD-1,2,3,3M, | 4 6AU6 |
| 1 6AL5 | 5,6, and 7: | 3 6J6 |
| 1 6T8 | 4 6AG5 | 3 12AU7 |
| 1 6AQ5 | 1 6AU6 | 3 6AL5 |
| 1 6J6 | FFRD-8: | 1 6Y6G |
| 1 6AG5 | 3 6AK5 | 1 5Y3GT |
| 1 5Y3GT | 1 6AU6 | 1 6X4 |
| 1 OA2 | 1 6AG5 | 3 OB2 |
| | | 1 OA2 |
| Power Sply. | | 1 2BP1A |
| 1 6Y6G | | |
| 1 5Y3GT | | |

THE TECHNICAL MATERIEL CORPORATION

700 FENIMORE ROAD MAMARONECK, NEW YORK

CABLE
TEPEI
MAMARONECK, N.Y.

COMMUNICATION ENGINEERS

IN CANADA:
TMC (CANADA) LTD.
OTTAWA, ONTARIO