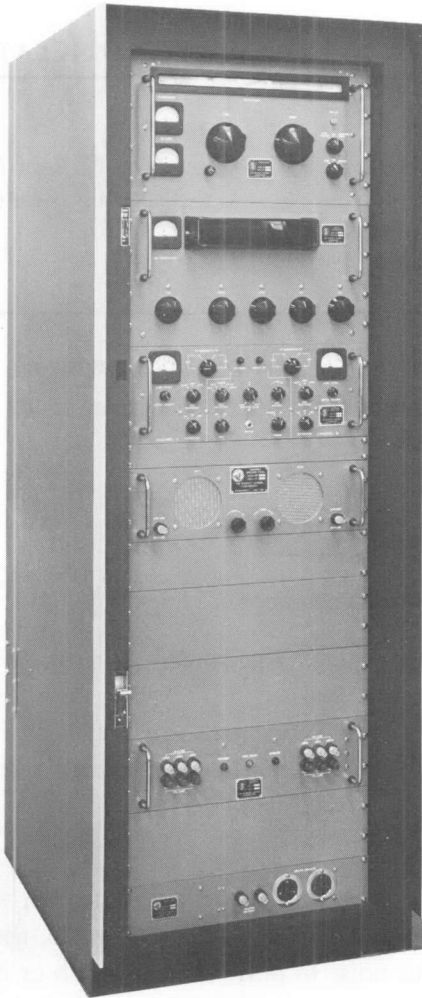


TECHNICAL BULLETIN NUMBER 3016

General Purpose Communications Receiver TMC Model DRR-551



- SSB, ISB, AM, AME, FSK, FAX, CW, MCW, Pulse & Phase modes for:
 - Point-to-point
 - Ground-to-air
 - Shore-to-ship
- 2-32 mcs Continuously Tuned
- 100 cycle tuning
- 1 part 10^8 stability
- Direct reading frequency

This is a dual conversion superheterodyne receiver covering the frequency range of 2 to 32 megacycles in 100 cycle tuning increments under synthesizer controlled conditions or continuously variable tuning under non-synthesized conditions. It has been designed and optimized specifically for the reception of SSB, ISB, AM, AME, FSK, FAX, CW, MCW, Pulse and Phase signals, thus providing exceptional performance in fixed plant point-to-point, ground-to-air, and shore-to-ship circuits as well as in mobile and transportable applications.

The input dynamic range of this receiver has been carefully correlated with optimum sensitivity, selectivity, image rejection, unwanted radiation, cross talk, spurious response and stability and it is capable of accepting input signal variations of 70 db without AGC and at least 100 db

General Purpose Communications Receiver

with AGC without affecting technical characteristics. Further, this receiver will continue to provide usable output over a 150 db dynamic range. This receiver extends useful circuit time by its ability to utilize signals under an exceptionally wide range of signal strength conditions.

The basic modules used in this receiver have been service approved and assigned military nomenclature as follows:

QUAN.	TMC MODEL NUMBER	DESCRIPTION	MIL NOMENCLATURE
1	HFR-1	RF Tuner	TN-376/UR
1	HFS-1	Synthesizer	0-941/UR
1	SBS-1	Sideband Converter	CV-1293/FRR-60(v)
1	RAK-21	Cabinet	CY-3566/FRR-60(v)
1	HPP-1	Aux. Power Panel	SB-1866/FR
1	BSP-2	Bridging Speaker Amplifier	LS-509/G

In addition, this receiver has been tested and certified as to the radiated and conducted interference requirements of MIL-I-16910 and the temperature and humidity requirements of MIL-E-16400.

TECHNICAL SPECIFICATIONS, TMC MODEL DDR-551

FREQUENCY RANGE:	2-32 mc in 100 cycle steps.
MODES OF RECEPTION:	SSB, ISB, AM, AME (AM equivalent) FSK, FAX, CW, MCW.
FREQUENCY STABILITY:	1 part in 10^8 per day with self-contained standard.
INPUT IMPEDANCE:	50 ohms unbalanced.
NOISE FIGURE AND SENSITIVITY:	6 db or better over the frequency range, i.e., with a 1 microvolt signal and a 7.5 kc bandwidth, the output signal plus noise to noise ratio is 15 db or better.
TUNING:	Direct reading in frequency by illuminated front panel "nixie" indicators.
CALIBRATION:	The received frequency is displayed on a large 14" dial to give minimum resettability error and maximum tuning ease. An internally generated alignment signal is provided for routine receiver sensitivity checks and system alignment.
INTERMODULATION:	Intermodulation products are down 60 db from the maximum tones in the desired sideband as a result of two signals in the unwanted sideband.
IMAGE RATIO:	80 db average.

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SPURIOUS RESPONSE: (as defined by CCIR)	Better than 120 db referenced to 1.0 microvolt. Spurious will be no greater than .01 microvolt, when referred to the antenna.
IF REJECTION:	Better than 80 db average.
NOISE LIMITER:	The front panel controlled RF noise limiter is an improved "LAMB" type which mutes the receiver during impulse type noise.
IF SELECTIVITY: (selectable by front panel switches)	± 1.5 db 250-3300 cps USB ± 1.5 db 250-3300 cps LSB ± 1.5 db 250-7500 cps USB ± 1.5 db 250-7500 cps LSB ± 1.5 db 250-6000 cps USB ± 1.5 db 250-6000 cps LSB ± 1.5 db 1.0 kc symmetrical ± 1.5 db 6.0 kc symmetrical ± 1.5 db 15.0 kc symmetrical Any four (4) of the foregoing IF bandwidths may be supplied in each receiver.
AGC CHARACTERISTICS:	<ol style="list-style-type: none">100 db rise in input signal from 1 microvolt will produce less than ± 1.5 db change in audio output.AGC voltage may be derived from the upper sideband, lower sideband or the carrier independently selectable by front panel switches.The AGC system has a fast attack time and an adjustable decay time from 1 to 10 seconds.
AUDIO RESPONSE:	± 1.5 db 100 cps to 22,000 cps.
AUDIO DISTORTION:	-40 db.
AUDIO OUTPUTS LEVEL:	<ol style="list-style-type: none">Two 600 ohm balanced 0 to 1.0 watt.Two 600 ohm balanced 0 to 100 milliwatts.Front panel headphone monitor.
METERING:	<ol style="list-style-type: none">Independent VU indicators to monitor each low level (0-100 mw) 600 ohm channel.RF input signal level.Synchronization meter.
PRIMARY POWER:	115/230 volts, 48-62 cycles, 1 phase, approximately 700 watts.

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ENVIRONMENTAL CONDITIONS: Designed to operate in any ambient temperature from 0 to 50° C, and any value of humidity up to 90%.

INSTALLATION DATA: 69" high × 24½" wide × 30" deep, approximately 600 lbs.

SHIPPING WEIGHT AND CUBE: 1100 lbs., 52 cu. ft.

MILITARY NOMENCLATURE: AN/FRR-60(v).

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