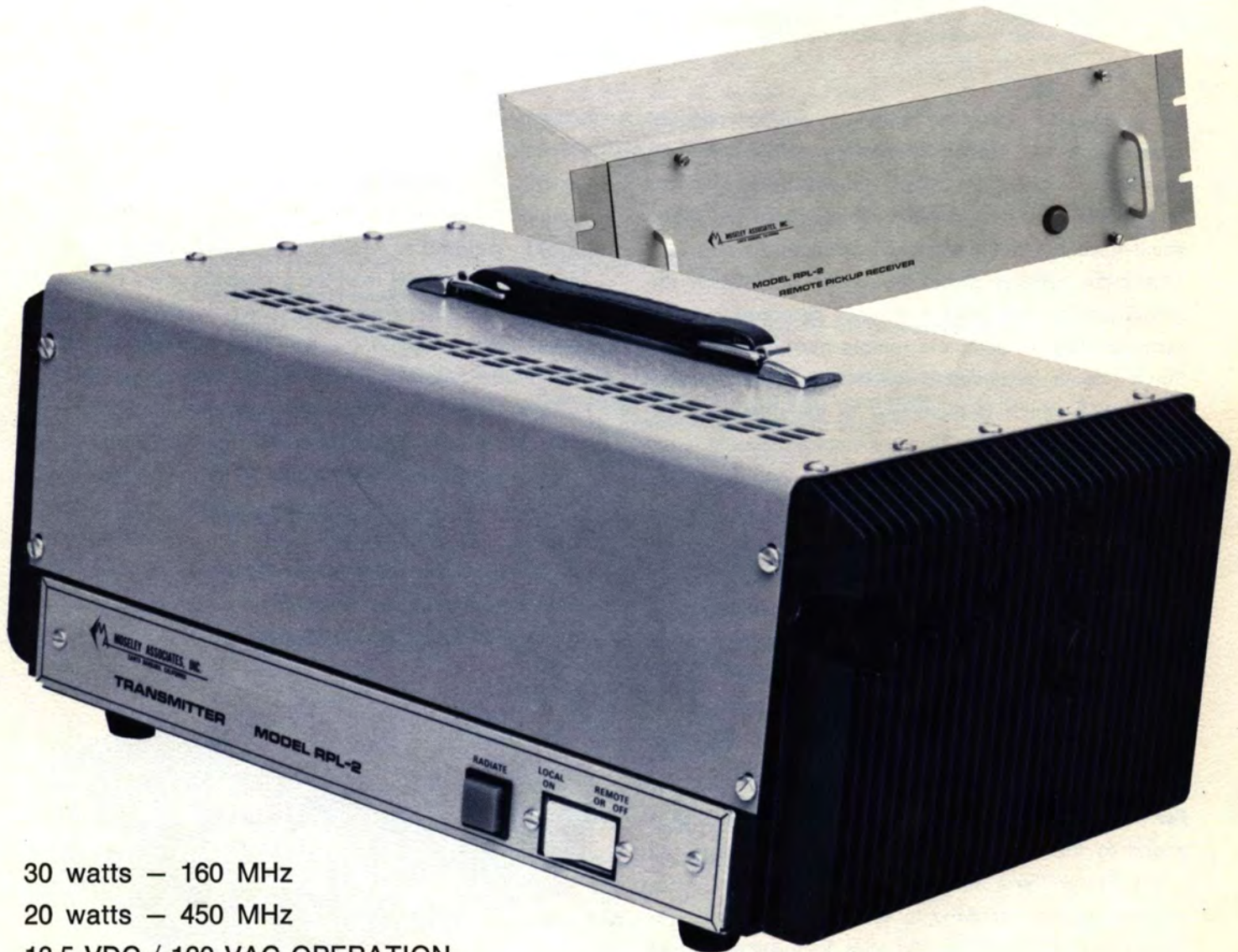


REMOTE PICKUP LINK MODEL RPL-2



BULLETIN 229

ALL SOLID-STATE



30 watts — 160 MHz
20 watts — 450 MHz
13.5 VDC / 120 VAC OPERATION

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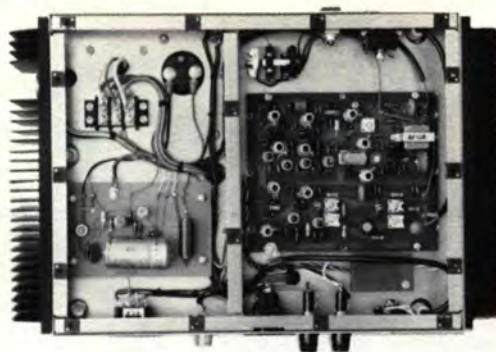
MOSELEY ASSOCIATES, INC.

PROFESSIONAL PRODUCTS FOR PROFITABLE BROADCASTING

450 MHz Varactor Tripler



Rear of RPL-2T Transmitter with top cover removed showing varactor tripler assembly. 160 MHz RF final amplifier is mounted on heat sink to left.



Under side of RPL-2T Transmitter chassis. Power supply regulating circuitry is contained on printed circuit card in left compartment. Larger printed circuit card in right compartment contains audio, voltage-controlled crystal oscillator (VCXO), and multiplier circuits.

All solid-state circuitry and a unique concept characterize the Model RPL-2 Remote Pickup Link. Modularized circuitry using state-of-the-art devices and special attention to serviceability make the RPL-2 small-sized but not densely constructed. The RPL-2T Transmitter utilizes direct frequency modulation enabling outstanding audio frequency response and low distortion for the complete remote pickup link. Modulation occurs in a voltage-controlled crystal oscillator (VCXO) which is multiplied to the operating frequency. This multiplier circuitry employs double-tuned circuits to reject unwanted RF components. Three final RF amplifier transistors operate in a parallel configuration to provide further reliability. Should one of these final RF amplifier transistors fail, the RPL-2T Transmitter will continue to function properly but at a reduced power level. A unique peak collector voltage sampling circuit automatically reduces power output to prevent damage to the output transistors under adverse VSWR conditions . . . even open or short circuits!

For 450 MHz operation, a varactor tripler assembly is added to the 160 MHz Transmitter output stage. All RPL-2 Transmitters and Receivers have provision for conversion from 160 MHz to 450 MHz operation. Pre-drilled heat sinks on the 160 MHz Transmitter accept the varactor tripler assembly. Space is provided on the RPL-2R Receiver for mounting of the 450 MHz RF converter. With proper test equipment, field conversion from 160 MHz to 450 MHz operation is possible.

Slide-out drawer construction giving full front-panel accessibility is used in the RPL-2R Receiver. As with the RPL-2T Transmitter, circuitry is modularized and completely solid-state. Both the RPL-2R Receiver and RPL-2T Transmitter feature all socketed solid-state devices. The RPL-2R is of the superheterodyne design. The 160 MHz Receiver is double-conversion. Triple-conversion is used in the 450 MHz Receiver. All RF and intermediate frequency amplifier stages use MOS FET transistors for decreased cross-modulation products. A unique I.F. limiter gives improved Signal-to-Noise Ratio under adverse signal conditions. Maximum rejection to impulse noise is achieved through the use of a ratio detector. An all solid-state squelch circuit (no relay) has an adjustable threshold. Integrated-circuit and discrete devices with an output transformer are used in the audio amplifier stages.



Note slide-out drawer construction of RPL-2R Receiver giving complete access from the front panel.

MODEL RPL-2 REMOTE PICKUP

SPECIFICATIONS

SYSTEM

Audio Response	±1.5 db, 30 Hz — 12,000 Hz
Distortion	Less than 1.3%, 30 — 12,000 Hz
Signal-to-Noise Ratio	55 db below 100% (58 db typical)
Frequency Range	148 MHz — 174 MHz or 450 MHz — 470 MHz, as ordered (two-frequency operation standard. See ordering information.)

TRANSMITTER

RF Output	
148 — 174 MHz	Minimum 30 watts continuous into 50 ohm load, 36 watts maximum
450 — 470 MHz	Minimum 18 watts continuous into 50 ohm load, 22 watts maximum Type UHF female connector
VSWR Protection	Output automatically reduced with excessive VSWR
Emission	
148 — 174 MHz	30F3 (±5 kHz for 100% modulation)
450 — 470 MHz	50F3 (±15 kHz for 100% modulation)
Frequency Stability	0.0005% (−30°C to 60°C)
Audio Input	+10 dbm, 600 ohms, balanced
Temperature Range	−30°C to 60°C
Power Requirements	
AC	120/240 VAC, 50 — 60 Hz, 35 watts-standby, 150 watts-operate
DC	13.5 VDC, negative ground, 0.5 ampere—standby, 6 amperes—operate; 16 VDC maximum — 11 VDC minimum (at reduced output)
Size	6 ³ / ₄ inches high, 16 inches wide, 10 ¹ / ₄ inches deep
Shipping Information (Approximate)	33 pounds, 1.0 cubic foot 26 pounds net.

RECEIVER

Sensitivity (160 MHz & 450 MHz)	0.7 microvolt for 20 db SNR, 75 microseconds de-emphasis. 3 microvolts for 20 db SNR, unweighted (flat)
Selectivity	−6 db at ±15 kHz, −80 db at ±60 kHz
Image Rejection	85 db
Frequency Stability	0.0005% (−20°C to 55°C)
RF Input	50 ohms, Type UHF female connector
Audio Output	+10 dbm @ 100% modulation, 600 ohms, balanced
Squelch	Automatic and adjustable, electronic
Temperature Range	−20°C to 55°C
Power Requirements	120/240 VAC, 50 — 60 Hz, 10 watts
Size	5 ¹ / ₄ inches high, 19 inches wide, 11 inches deep
Shipping Information (Approximate)	10 pounds, 1.0 cubic foot

REMOTE PICKUP AMPLIFIER MODEL RPA-1



The Model RPA-1 Remote Pickup Amplifier is designed to operate in conjunction with the RPL-2 series Transmitter. Functioning as an audio mixer and control head, the RPA-1 Remote Pickup Amplifier simplifies remote broadcasts using the RPL-2 Remote Pickup Link. As audio mixing is not accomplished in the Transmitter, the RPL-2T can be situated at any convenient location. One single multiconductor cable is required to interconnect the RPA-1 and RPL-2T. The low profile of the RPA-1 does not obstruct the field of vision of operating personnel. An internal audio limiter assists in level control and prevention of overmodulation of the RPL-2T Transmitter. Control and metering functions of the RPL-2T Transmitter are also accomplished with the RPA-1. A meter switch enables the monitoring of the RPL-2T internal power supplies, collector voltage of the final RF stage transistors, and relative RF power output. Request Bulletin 230 for full details on the RPA-1 Remote Pickup Amplifier.

specifications

Mixing Channels	3 (2 microphones and 1 line input)
Frequency Response	+0.4 db to -0.8 db, 50 Hz to 15,000 Hz
Distortion	Less than 0.5% at normal output, 50 Hz to 15,000 Hz
Signal-to-Noise Ratio	Better than 60 db
Peak Limiter	Control range approximately 20 db, attack time 1 millisecond
Power Requirements	120 VAC, 50 — 60 Hz; 11.5 VDC to 16 VDC; or internal battery holder
Size	3 3/4 inches high, 12 inches wide, 11 inches deep

Specifications subject to change without notice

ORDERING INFORMATION When ordering, please specify operating frequency.

RPL-2T/150 All Solid-State Remote Pickup Transmitter, with internal AC and DC power supplies, for operation in the 160 MHz band. Tuned and tested on one operating frequency.

RPL-2T/450 All Solid-State Remote Pickup Transmitter, with internal AC and DC power supplies, for operation in the 450 MHz band. Tuned and tested on one operating frequency.

RPL-2R/150 All Solid-State Remote Pickup Receiver, with internal AC power supply, for operation in the 160 MHz band. Tuned and tested on one operating frequency.

RPL-2R/450 All Solid-State Remote Pickup Receiver, with internal AC power supply, for operation in the 450 MHz band. Tuned and tested on one operating frequency.

For two-frequency operation, order additional crystal set. Frequencies must be spaced less than 120 kHz apart for the RPL-2/150, and less than 360 kHz apart for the RPL-2/450.

Antenna and transmission line available to fulfill individual requirements. Horizontally and vertically polarized, fixed and mobile, directional and non-directional antennas available. All standard transmission lines available. Please advise your requirements, and we will assist in antenna and transmission line selection.

RPA-1 Remote Pickup Amplifier, provides audio mixing, metering, and control facilities for RPL-2T series Transmitters.



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