

RRX Series

RRX-150 144-174 MHz
RRX-450 450-470 MHz

RITRON, INC.

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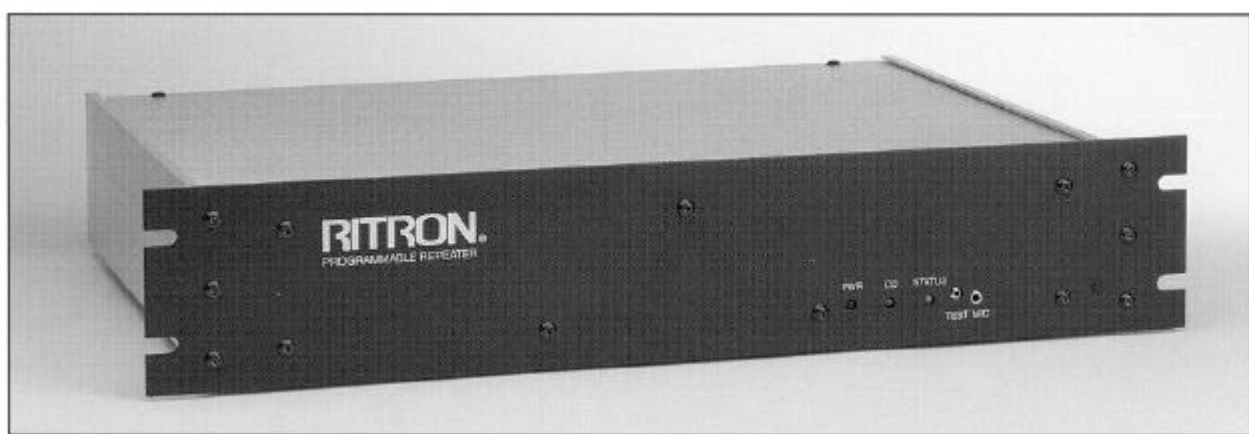
Synthesized Programmable Repeaters

FEATURES:

- Synthesized and Programmable
- 1-8 Watt or 30 Watt (UHF), or 25 Watt (VHF) Models
- High Performance Specifications
- CTCSS or DCS Signalling
- Selectable Input Voltage 110/240 VAC, 50-60 Hz
- 12VDC Operation with Battery Charge and Automatic Battery Cut-Over
- Local Radio Test Capability
- Duplexer Option (UHF only)
- Telephone Interconnect Option
- Telenex Phone Line Extender Option
- Made in U.S.A.

VHF Now Available

(for export only)



High Performance Specifications. Feature Rich. Affordable Price.

Ritron, the pioneer of affordable self-contained repeaters, continues the tradition with the RRX Series Synthesized Programmable Repeater. The RRX was designed with a no compromise approach. Its transmitter, receiver and control logic modules are all designed specifically to withstand the rigors of repeater operation. And its "real world" performance proves it. The RRX provides high performance specifications, versatile features and rugged dependability, all at an economical price

RRX Series *Synthesized Programmable Repeaters*

FEATURES/BENEFITS

HIGH PERFORMANCE SPECIFICATIONS -Built to rigid standards, the RRX delivers excellent intermodulation, sensitivity and selectivity specifications. A temperature compensation circuit (TCXO) ensures frequency stability and accuracy during ambient temperature changes.

SYNTHESIZED AND PROGRAMMABLE -Synthesized technology makes repeater set-up fast and convenient. Programmable features include TX & RX Frequencies, Coded Signalling, Hang-Time Timer, Time-out Timer, and Morse Code Station ID. (Tuning of the duplexer and TX and RX module may be required.)

MODULAR DESIGN -The modular design of the internal electronics allows for quick replacement and repair while on-site.

RUGGED RACK STYLE DESIGN -Rugged, lightweight aluminum housing is perfect for equipment room installations or 19" rack mounting at a repeater site.

SIGNALLING CAPABILITY -Standard signalling includes CTCSS(1) or DCS(2) encode/decode. Optional plug-in, dip switch programmable CTCSS tone modules increase the capacity from one to four CTCSS tones. The RRX accessory connector provides a convenient interface to an external tone panel or trunking controller.

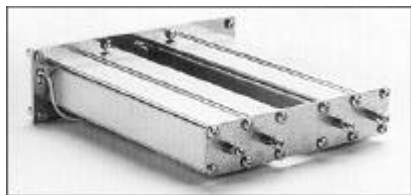
Encode/Decode Std Std Opt Opt Opt

CTCSS	1	0	2	3	4
DCS	0	2	0	0	0

The RRX is capable of separate CTCSS encode and decode tones by using the optional plug-in board and programming it to a separate tone frequency. DCS Signalling includes all standard and inverted digital codes.

BATTERY CHARGE AND AUTOMATIC CUTOVER -Powered by a 110VAC or 240VAC selectable power supply or a 12VDC source, the RRX is ideal for domestic or international applications. An emergency back-up battery can be trickle charged during normal operation and will immediately go on-line if an AC power failure occurs, thus preventing customer downtime during power outages.

CONTINUOUS DUTY OPERATION -The RRX is designed for continuous duty operation at 8 Watts and 50% duty cycle at 25 and 30 Watt power levels. A 12VDC fan is recommended for both applications.



INTERNAL DUPLEXER

The standard RRX-450 includes an internal, four cavity, extruded aluminum, "notch type" duplexer. Built by Ritron, this duplexer is specifically designed for 50 Watt power levels or less. (May be deleted.) (VHF does not include duplexer)

ACCESSORY CONNECTOR -Allows the RRX to be connected to and controlled by other devices such as tone panels, trunking controllers, and control stations.

OPTIONS

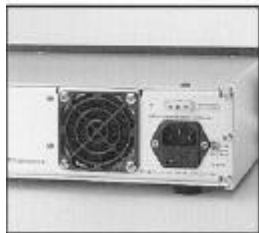
DUPLEXER DELETE -For applications that require an external duplexer, amplifier or combiner. Two UHF connectors are installed on the rear panel providing easy interface to external hardware.

RSM-3X REMOTE SPEAKER MICROPHONE

Provides local PTT transmit and receive control of the RRX allowing quick set-up and testing. The RSM-3X also enables PTT field programming of most RRX features.



BAND PASS FILTER -Plug in cavity improves the repeater's performance in areas concentrated with co-site users (UHF only).



12VDC COOLING FAN -Internal 12VDC fan keeps the electronics cool during operation. It may be programmed to run continuously or upon transmitter activation. This fan is required when operating the transmitter continuously, usually with interconnection or full duplex radio links.

UHF 30 WATT AMPLIFIER -When extra power output is required, an optional internal amplifier boosts the output to 30 Watts (into the duplexer). An internal 12VDC fan is included to keep the electronics cool during operation.

TELEPHONE INTERCONNECT MODULES -The RRX accepts all Ritron interconnect modules. These include the RP-200 Interconnect with Paging and the RW-4WA (4 wire) or RTL1-1 (2 wire) interface modules for wireless links to remote control stations. The RRX may be configured as a Telenex Phone Line Extender using the RTSU-1 and RTL1-1 modules.

**YOUR
LOCAL
DEALER:**

SPECIFICATIONS

GENERAL

Ritron Model No:	RRX-150	RRX-450
FCC ID:	Pending	AIEROT02-450
FCC Rule Parts:	22, 74, 90, 95	same
Emission Designators:	16KOF3, 16KOF2	same
Frequency Range:	144-174 MHz (Covers any 15 MHz band; factory preset to 150-165 MHz)	450-470 MHz (406-420; 470-512 MHz pending)
Frequency Separation:	Dependent upon duplexer	4.5-5.5 MHz w/Ritron Duplexer
RF Channels:	1 TX/RX channel	same
Channel Spacing:	12.5 KHz or 5.0 KHz	12.5 KHz
Tone/Code Signalling:	1 CTCSS or 2 DQC codes (std.) Up to 3 add'l CTCSS available (4 total) with optional RTS-6P modules	same
Power Requirements:	120/240 VAC, .5A or External 11 to 15 VDC/8A Tx; 250mA Rx	same AC 15 VDC/2A Tx; 200mA R
Power Consumption:	60 Watts AC, 30 Watts DC	same
Local Audio Output:	1 Watt into 8 Ohms	same
Carrier Dropout Timer:	0 to 8 seconds, programmable	same
Squelch Tail:		same
Elimination Timer:	0 to 8 seconds, programmable	same
Time-out Timer:	0 to 30 minutes, programmable	same
Auxiliary Equipment Connectors:	10-pin female internal connector 10-pin male connector for external controller	same
RF Connector:	Two SO-239 connectors	SO-239 (2 SO-239 if duplexer deleted)
AC Power Connector:	3-pin, fused, power entry module on rear panel: Voltage selectable	same
DC Power Connector:	Battery Maintenance Charge Current: 0.7A maximum	same
Battery Maintenance Charge Current:		same
AC to Battery Backup Transfer:	Fail-safe relay cutover	same
Test Speaker Microphone:	2.5mm and 3.5mm jacks for RSM-3X	same
Antenna Impedance:	50 Ohms	same
Dimensions:	3.5"H x 19.0"W x 12.0"D standard rack	same
Weight:	16 lbs.	12 lbs. (30 Watt model: 16 lbs.)
TRANSMITTER		
RF Output:	1-25 Watts @ 12.6 VDC, adjustable	1-8 Watts @ 12.6 VDC, adjustable. 5 Watts @ duplexer antenna port. 30 Watts optional (20 Watts @ duplexer antenna port)
Frequency Stability:	+/- 5 PPM (-30 to +60 C)	+/- 2.5 PPM (-30 to +60 C)
Modulation:	Direct FM	same
Deviation:	0 to +/- 7.5KHz, adjustable	0 to +/- 5KHz, adjustable
Spurious and Harmonics:	Better than -51dBc	same
Audio Response:	10 to 3000Hz (+/-3 dB)	same
Power Requirements:	+11 to +15VDC, 1.5A nominal (Rx), 8A Tx	same
FM Hum and Noise:	60dB	same
Audio or FSK Data Input:	Pre-emphasized; Impedance: 10K nominal; Frequency range: 5 to 3000Hz Signal Level: 500mV p-p for +/- 3 KHz of deviation	same
RECEIVER		
Receiving System:	Fixed tuned, Dual Conversion Superheterodyne	same
IF System:	10.7MHz/455KHz	21.4MHz/455KHz
Local Oscillator:	Low side injection	same
Sensitivity (12 dB SINAD):	.3µV	.25µV (.35µV thru duplexer)
Selectivity(EIA):	-70 dB @ +/-30KHz	-80 dB @ +/-30KHz
Spurious Rejection (EIA):	-70 dB	-80 dB
Image Rejection (EIA):	-70 dB	-80 dB
Intermodulation Rejection:	-70 dB (EIA)	same
Frequency Stability:	+/-5 ppm (-30 to +60 C)	+/-2.5 ppm (-30 to +60 C)
Noise Squelch Sensitivity:	.1 to .35µV, adjustable	.2 to 8µV, adj., (factory preset to open at 12 dB SINAD)
Modulation Acceptance:	+/-7.5KHz maximum	same
Audio Frequency Range:	10Hz to 3KHz	same
Audio or FSK Data Output:	10Hz to 3KHz /P502 in position A. 300 Hz to 3KHz/P502 in position B. 2K Ohm min. load impedance. A received 1KHz tone at 3KHz deviation, set to produce 2.1 V p-p at J302, pin 1	same
Power Requirements:	250 mA standby plus battery charge current	200 mA standby plus battery charge current
DUPLEXER (UHF only)		
High Pass Insertion Loss:		1.8dB typical
Low Pass Insertion Loss:		1.8dB typical
TX/RX Separation:	Sinclair model MR-256-SP10	Typical 5MHz (std); 4.5MHz-10MHz (option)
Connectors:	(specify freq.)	Male phono (TX/RX), SO-239 (Antenna Port)
Impedance:		50 Ohms

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