

PATRIOT RRX REPEATER HIGH PERFORMANCE SPECIFICATIONS. FEATURE RICH. AFFORDABLE PRICE.



Ritron, the pioneer of affordable self-contained repeaters, continues the tradition with the Patriot RRX 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.

- Synthesized and Programmable
- N Type Connectors Now Standard
- 1 - 8 Watt/30 Watt Model
- High Performance Specifications
- Built-in CTCSS or DCS Signalling
- Wide Band and Narrow Band Models
- Selectable Input Voltage 110/240 VAC, 50 - 60 Hz
- 12VDC Operation with Battery Charge and Automatic Battery Cut-Over
- Local Radio Test Capability
- Duplexer Delete Option
- Telephone Interconnect Option
- Telenexus Phone Line Extender Option
- Made In U.S.A.

NEW

- 12.5 KHz Narrow Band High Performance.
- EZ Connect Trunking Controller Interface Option.

- Transmitter features Fast Attack Time and Low Distortion Digital Waveform. Provides optimum trunking handshake performance and maximum range.



PATRIOT® RRX
BY RITRON

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 capability from one to four CTCSS tones. The RRX accessory connector provides a convenient interface to an external tone panel.

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.

CONTINUOUS DUTY OPERATION

The RRX is designed for continuous duty operation at 8 Watts and 50% duty cycle with the 30 Watt amplifier installed. A 12VDC fan is standard.

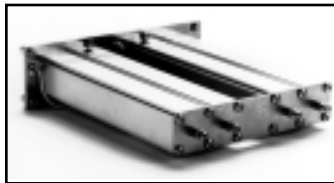


12VDC COOLING FAN

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.

BATTERY CHARGE AND AUTOMATIC CUTOVER

Powered by a 110 VAC or 240 VAC 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.



INTERNAL DUPLEXER

The standard RRX 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 for special applications.)

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 N Type 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.

30 WATT AMPLIFIER

When extra power output is required, an optional internal amplifier boosts the output power 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 RTLT-1 (2 wire) interface modules for wireless links to remote control stations. The RRX may be configured as a Telenexus Phone Line Extender using the RTSU-1 and RTLT-1 modules.

YOUR DEALER IS:

SPECIFICATIONS

GENERAL

Ritron Model No:
FCC ID:
FCC Rule Part:
Dimensions:
Weight:

RRX-450
AIERIT02-450
22, 74, 90, 95
3.5"H x 19.0"W x 12.0"D standard rack
Standard model: 12lbs.
30 Watt model: 16lbs.

Emission Designators:
Frequency Range:

16KOF3, 16KOF2
450-470 MHz
(406-420, 470-512 MHz pending)

Frequency Separation:
RF Channels:
Channel Spacing:
Tone/Code Signalling:

TX/RX: 4.5-5.5 MHz Duplexer
1 TX/RX channel, programmable
12.5 KHz
1 CTCSS or 2 DQC codes (Std). Up to 3 add'l CTCSS available (4 total) with optional RTS-6P modules

Power Requirements:

Power Consumption:

Local Audio Output:

Hang-Time Timer:

Squelch Tail Elim. Timer:

Time-Out Timer:

Aux. Equipment Connectors:

110/240 VAC, 50-60 Hz, 0.5A or External 11 to 15 VDC/2A
60 Watts AC, 30 Watts DC
1 Watt into 8 Ohms
0 to 8 seconds, programmable
0 to 8 seconds, programmable
0 to 30 minutes, programmable
10-pin female internal connector. (Std.)
DB-25 female connector for an external controller. (Opt.)

RF Connector:

AC Power Connector:

DC Power Connector:

Battery Charge Current:

N Type (two N connectors when standard duplexer is deleted)
3-pin, fused, power entry module on rear panel: 110/240 VAC externally selected
3-pin polarized socket-rear panel
Up to 0.7A maximum

AC Battery to Backup Transfer:

Test Speaker Microphone:

Antenna Impedance:

Automatic relay cutover (failsafe to DC)
2.5mm and 3.5mm jacks for RSM-3X
50 Ohms

TRANSMITTER

RF Output:

Frequency Stability:

Modulation:

Deviation:

Spurious and Harmonics:

Audio Response:

Power Requirements:

FM Hum and Noise:

Audio or FSK Data Input:

1-8 Watts @ 12.6VDC, adjustable to 5 Watts @ duplex antenna port
+/- 2.5 PPM (-30° C to +60° C)
Direct FM
0 to +/- 5 KHz, adjustable
Better than -51 dB
10 to 3000 Hz, (+/- 3 dB)
+11 to +15VDC, 1.5A nominal
-60 dB
Pre-emphasized; Impedance:
10K nominal; Frequency Range:
5 to 3000 Hz; Signal Level: 500 mV p-p for +/- 3 KHz of deviation.

1-8 Watts @ 12.6VDC, adjustable to 5 Watts @ duplex antenna port
+/- 1.5 PPM (-30° C to +60° C)
Direct FM
0 to +/- 2.5 KHz, adjustable
Better than -60 dB
10 to 3000 Hz, (+/- 3 dB)
+11 to +15VDC, 1.5A nominal
-60 dB
Pre-emphasized; Impedance:
10K nominal; Frequency Range:
5 to 3000 Hz; Signal Level: 500 mV p-p for +/- 1.5 KHz of deviation.

RECEIVER

Receiving System:

IF System:

Local Oscillator:

Sensitivity (12dB SINAD):

Selectivity (EIA):

Spurious Rejection (EIA):

Image Rejection (EIA):

Intermodulation Rejection (EIA):

Frequency Stability:

Noise Squelch Sensitivity:

Modulation Acceptance:

Audio Frequency:

Audio or FSK Data Output:

Fixed Tuned, Dual Conversion Superheterodyne
21.4 MHz/455 KHz
Low side injection
.25µV; .35µV through duplexer
-80 dB @ +/-30 KHz
-80 dB
-80 dB
-70 dB
+/-2.5 ppm (-30° to +60° C)
.2 to 8µV, adj., Factory set to open @ 12dB SINAD
+/- 7.5 KHz maximum
10 to 3 KHz
10 Hz to 3 KHz/P502 in position A. 300 to 3 KHz/P502 in position B. 2K Ohm Minimum Load Impedance. A received 1 KHz tone at 3 KHz deviation, set to produce 2.1 V p-p at J302, pin 1
200 mA standby plus battery charge current

Fixed Tuned, Dual Conversion Superheterodyne
21.4 MHz/455 KHz
Low side injection
.25µV; .35µV through duplexer
-70 dB @ +/-12 KHz
-70 dB
-70 dB
-70 dB
+/-1.5 ppm (-30° to +60° C)
.2 to 8µV, adj., Factory set to open @ 12 dB SINAD
+/- 3.0 KHz maximum
10 to 3 KHz
10 Hz to 3 KHz/P502 in position A. 300 to 3 KHz/P502 in position B. 2K Ohm Minimum Load Impedance. A received 1 KHz tone at 1.5 KHz deviation, set to produce 2.1 V p-p at J302, pin 1
200 mA standby plus battery charge current

DUPLEXER

High Pass Insertion Loss:

Low Pass Insertion Loss:

TX Noise Suppression@

RX Frequency:

RX Noise Isolation@

TX Frequency:

TX/RX separation (450-470MHz):

1.5 dB typical

1.8 dB typical

63 dB

73 dB

Typical 5 MHz (Std.);
4.5 MHz-10 MHz (Opt.)

N Type (Antenna Port)

50 Ohms

1.5 dB typical

1.8 dB typical

63 dB

73 dB

Typical 5 MHz (Std.);
4.5 MHz-10 MHz (Opt.)

N Type (Antenna Port)

50 Ohms

PATRIOT®RRX
BY RITRON

Ritron, Inc. 505 West Carmel Dr., PO Box 1998, Carmel, IN 46032

Ph: 1-800-USA-1-USA (1-800-872-1872) or 317-846-1201

Fax: 317-846-4978 www.ritron.com PN#01450220B

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