

RTF-SERIES REPEATER & BASE STATION VHF & UHF



FEATURES

- ▶ Modular construction with independent receivers and transmitters.
- ▶ Synthesized design with programming by IBM compatible PC through front panel port on each receiver and transmitter module.
- ▶ 100 Channel capacity. Individually programmable CTCSS with squelch tail elimination for each channel.
- ▶ Programmable repeater hang time and time out timer.
- ▶ Internal jumper configured for flat or emphasized audio response.
- ▶ Direct FSK data transmission options are available for paging and data link applications.
- ▶ Balanced 4 wire 600 Ohm and unbalanced audio I/O.
- ▶ Isolated DC loop for PTT and COR functions.



COMPACT REPEATER OPTIONS

- ▶ Built in community tone panel.
- ▶ Built in power supply.
- ▶ Built in tone remote or DC remote control.

GENERAL

FREQUENCY RANGE	RECEIVER	EXCITER	RECEIVER	EXCITER
VHF	29-50MHz	RR050	TT050	136-156MHz
	66-88MHz	RR070	TT070	148-174MHz
				216-222MHz
CHANNEL SPACING:	12.5, 15, 20, 25, 30kHz in 5, 6.25 & 7.5kHz steps			
CHANNEL CAPACITY:	100 channels, BCD coded 00-99			
TONE SQUELCH:	Fully programmable, EIA Tone per channel			
PROGRAMMING:	Through the front panel port with an IBM compatible PC			
FREQUENCY STABILITY:	+/-5ppm standard, +/-1ppm optional. 2PPM & .02PPM			
AUDIO RESPONSE:	Selectable flat or 750 μ Sec pre/de-emphasis			
AUDIO INTERFACE:	Selectable 600 Ohm 0dBm balanced and Hi-Z unbalanced			
TEST & DIAGNOSTICS:	Front panel test connectors			
POWER:	+13.8 Vdc or 120/240 volt, 50/60Hz ac with PS12 power supply			
MOUNTING:	Standard 4 U high 19" rack			

RECEIVER

SENSITIVITY:	0.2 μ V for 12dB SINAD - 0.28 μ V for 12 dB quieting @ 25kHz spacing	
SPURIOUS & IMAGE REJECTION:	90dB	
SELECTIVITY:	80dB at 25kHz spacing 70dB at 12.5Hz spacing	
FREQUENCY SPREAD:	15MHz	20MHz
INTERMODULATION:	80dB per RS-204-C	
MODULATION ACCEPTANCE:	7.5 and 3.75kHz	
SQUELCH:	Noise squelch, adjustable from 6 to 26dB SINAD carrier squelch, adjustable from 1 to 200 μ V	
AUDIO RESPONSE:	+1-3dB, 300 to 3000Hz	
AUDIO LEVEL:	600 Ohm line, adjustable -10 to +10dBm, monitor output, 3 watts @ 4 Ohms, discriminator and subtone output 1 V peak at 100% system deviation	
AUDIO DISTORTION:	3% at 1KHz, 60% system deviation with 750 μ Sec de-emphasis	
COS OUTPUT:	Opto-coupled +12V, gnd and free switch connections	
ALARMS:	Unlock, tuning voltage, signal strength and supply voltage	

EXCITER/TRANSMITTER

FREQUENCY SPREAD:	15MHz	20MHz
POWER OUTPUT:	Adjustable, 5 to 25 watts	
POWER REGULATION:	+/-10% from 12-16Vdc, 0-50C, all channels	
DUTY CYCLE:	100% to -30C to +60C	
CARRIER & MODULATION		
ATTACK TIME:	20mSec	
SPURIOUS & HARMONICS:	Less than 0.25 μ W (Better than -80dB)	
AUDIO RESPONSE:	+1/-3dB, 300 to 3000Hz	
AUDIO DISTORTION:	Less than 3% at 60% system deviation at 1kHz	
RESIDUAL HUM & NOISE:	Less than -50dB relative to 60% system deviation	
AUDIO INPUT LEVEL:	600 Ohm line, -30 to +10dBm - Hi-Z input, 25mV to 1V rms subtone input, compatible with receivers. Test microphone; 6mV rms @200 Ohms.	
REMOTE KEYING:	dc Opto-coupled input	

POWER AMPLIFIER

OUTPUT POWER:	20-40/50-100 watts	30-80watts, or 80-120 watts
INPUT POWER:	-10 watts	8-15 watts
DUTY CYCLE:	100%	100% - 100 watts
HARMONICS & SPURIOUS:	Less than 0.25 μ W (better than 80dB)	
FEATURE:	Built in forward and reflected indication	

GENERAL

FREQUENCY RANGE	<u>RECEIVER</u> <u>EXCITER</u>		<u>RECEIVER</u> <u>EXCITER</u>			
UHF	400-430MHz	RR453	TT453	800-830MHz	RR801	
	450-490MHz	RR455	TT455	850-870MHz	RR802	TT801
	485-520MHz	RR456	TT456	896-930MHz	RR03	
				928-943MHz	TT802	
CHANNEL SPACING:	12.5 or 25kHz in 5 or 12.5kHz steps					
CHANNEL CAPACITY:	100 channels, BCD coded 00-99					
TONE SQUELCH:	Fully programmable, EIA Tone per channel					
PROGRAMMING:	Through the front panel port with an IBM compatible PC					
FREQUENCY STABILITY:	+/-1ppm standard (.1 & .02ppm option)					
AUDIO RESPONSE:	Selectable flat or 750 μ Sec pre/de-emphasis					
AUDIO INTERFACE:	Selectable 600 Ohm 0dBm balanced and Hi-Z unbalanced					
TEST & DIAGNOSTICS:	Front panel test connectors					
POWER:	+13.8 Vdc or 120/240 volt, 50/60Hz ac with PS12 power supply					
MOUNTING:	Standard 4 U high 19" rack					

RECEIVER

SENSITIVITY:	0.2 μ V for 12dB SINAD - 0.28 μ V for 20 dB quieting @ 25kHz spacing	
SPURIOUS & IMAGE REJECTION:	90dB	
SELECTIVITY:	80dB at 25kHz spacing 70dB at 12.5Hz spacing	
FREQUENCY SPREAD:	10MHz for 1dB degradation	25MHz for 1dB degradation
INTERMODULATION:	80dB per RS-204-C	75dB per RS-204 C
MODULATION ACCEPTANCE:	7.5 and 3.75kHz	7.5 and 3.75kHz
SQUELCH:	Noise squelch, adjustable from 6 to 26dB SINAD carrier squelch, adjustable from 1 to 200 μ V	
AUDIO RESPONSE:	+1-3dB, 300 to 3000Hz	
AUDIO LEVEL:	600 Ohm line, adjustable -10 to +10dBm, monitor output, 3 watts @ 4 Ohms discriminator and subtone output 1 V peak at 100% system deviation	
AUDIO DISTORTION:	3% at 1KHz, 60% system deviation with 750 μ Sec de-emphasis	
COS OUTPUT:	Opto-coupled +12V, gnd and free switch connections	
ALARMS:	Unlock, tuning voltage, signal strength and supply voltage	

EXCITER/TRANSMITTER

FREQUENCY SPREAD:	12MHz	Full range
POWER OUTPUT:	Adjustable, 1 to 15 watts	Adjustable, 1 to 13 watts
POWER REGULATION:	+/-10% from 12-16Vdc, 0-50C, all channels	
DUTY CYCLE:	100% to -30C to +60C	
CARRIER & MODULATION		
ATTACK TIME:	20mSec	
SPURIOUS & HARMONICS:	Less than 0.25 μ W (Better than -80dB)	
AUDIO RESPONSE:	+1/-3dB, 300 to 3000Hz	
AUDIO DISTORTION:	Less than 3% at 60% system deviation at 1kHz	
RESIDUAL HUM & NOISE:	Less than -50dB relative to 60% system deviation	
AUDIO INPUT LEVEL:	600 Ohm line, -30 to +10dBm - Hi-Z input, 25mV to 1V rms subtone input, compatible with receivers. Test microphone; 6mV rms @200 Ohms	
REMOTE KEYING:	dc Opto-coupled input	
EXTERNAL REF. OPTION:	Allows the transmitter to be phase locked to an external 1MHz reference	

POWER AMPLIFIER

OUTPUT POWER:	25-50 watts or 70-100 watts	25-50 watts or 70-100 watts
INPUT POWER:	7-10 watts	7-10 watts
DUTY CYCLE:	100%	100%
HARMONICS & SPURIOUS:	Less than 0.25 μ W (Better than -80dB)	
FEATURE:	Built in forward and reflected indication	



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