

MICRO CONTROL SPECIALTIES

SERIES MR4 RECEIVER



COMPARE THESE MR4 FEATURES

- 7 large helical resonators for outstanding overload performance
- Double conversion with 21.4 MHz first IF for 120 dB image rejection
- 12-pole crystal and ceramic IF filter
- Automatic fast/slow squelch virtually eliminates squelch tail
- Squelch hysteresis follows fading signals
- Shielded oscillator/multiplier chain
- Metering circuits for signal strength, peak deviation, and discriminator
- Silver mica and mylar capacitors hold peak performance over temperature
- Provision for internal CTCSS decoder
- Feedback and Q-damping insures optimum performance over time and temperature

DESCRIPTION

Radio channels are crowded enough today -- tomorrow the congestion will be even worse. That's why every detail of the MR4 is designed for outstanding performance in the harshest RF environments. With 7 large helical filters in the front-end and 12 poles of IF filtering the MR4 is immune to desense at interference levels greater than 100,000 uV. Two of the resonators are placed ahead of the RF pre-amplifier for exceptional overload resistance. The 21.4 MHz first IF and shielded oscillator/multiplier chain make it difficult to even measure an image, and its double-balanced first and second mixers reject intermodulation products by 80 dB. Feedback, damped-Q tuned circuits and decoupling are used so that gain stages operate

conservatively -- not wide open. NPO and mylar capacitors keep the performance consistently high over temperature extremes.

The MR4 is also packed with operational features like our famous MCS squelch circuit which is often called "the best there is." Now we've added automatic fast/slow squelch to lock in on weak signals and virtually eliminate squelch tails on strong signals. Full metering provisions for signal strength, deviation, and discriminator are included as are line and local speaker audio outputs.

Compare all the MR4 specs with those of any other receiver. Nothing else matches the MR4!

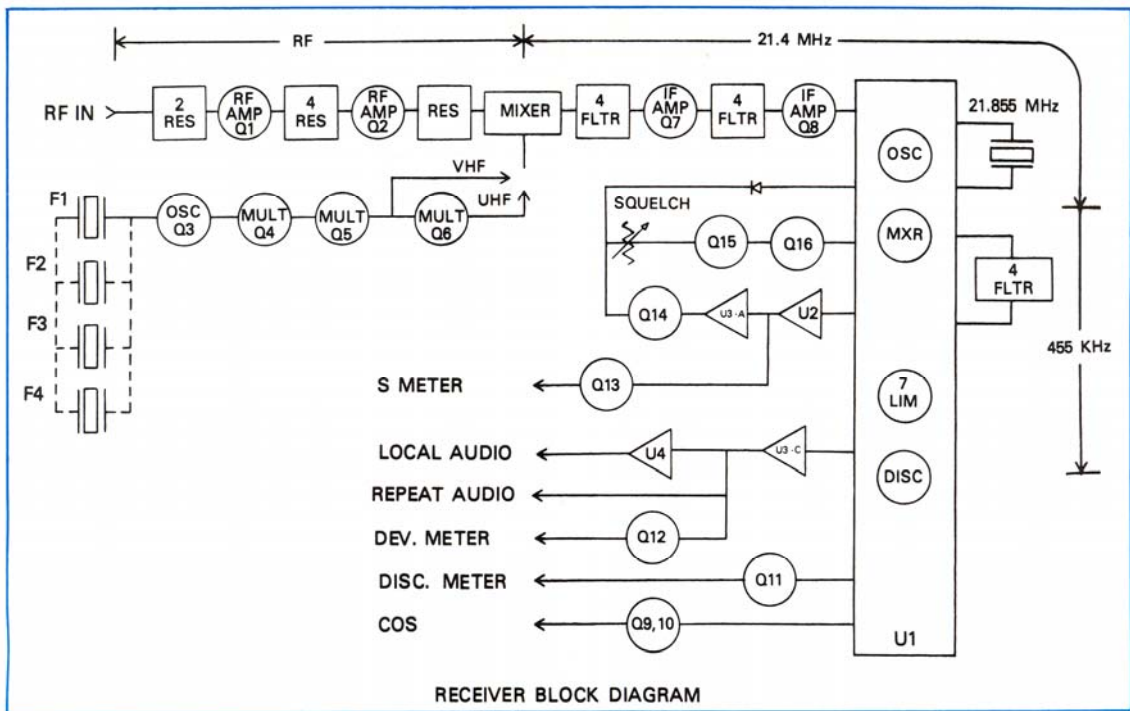
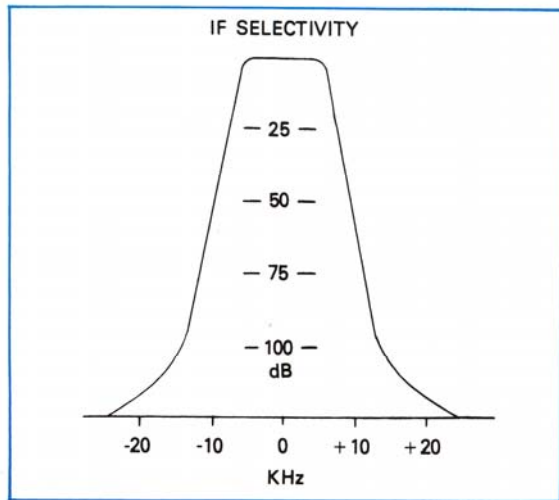
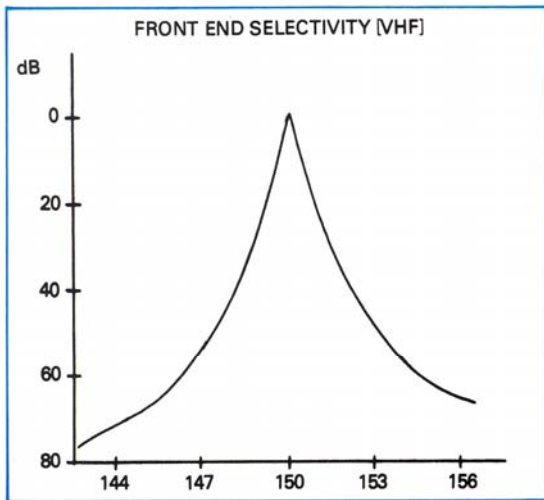
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SPECIFICATIONS

Frequency Range	136-174MHz, 216-250MHz (VHF) 420-512MHz (UHF)
Sensitivity	.25-.35uV (typ.) for 12dB SINAD
Selectivity	-6dB at \pm 6.5KHz -105dB at \pm 15KHz -125dB at \pm 25KHz
Spurious and Image response	-85dB Spurious -125dB Image
Overload/Desense	75,000uV \pm 600KHz (VHF) 100,000uV \pm 2MHz (VHF) 75,000uV \pm 2MHz (UHF) 100,000uV \pm 5MHz (UHF)
Intermodulation	-80dB (EIA method)
I.F.	21.4MHz first, 455KHz second
I.F. Filtering	8-pole crystal at 21.4MHz 4-pole ceramic at 455KHz (optional 9-pole ceramic)
First oscillator stability	\pm .0005% (-10 to +60C) \pm .0002% with optional oven
Squelch Circuit	Schmitt trigger with 6dB hysteresis
Squelch Threshold	.1-.15uV, automatic switch to fast mode with signals greater than 10uV
Modulation acceptance	\pm 7KHz
Audio de-emphasis	-6dB/octave (EIA)
Audio output	1.5W into 4 Ω (local) 0.4Vrms, 1000 Ω (line/repeat)
External Controls	50K Ω squelch 100 Ω local audio
External metering	0-1mA, 2300 Ω for each function
COS output	open collector, selectable active high or low
Voltage required	13VDC nominal (11-14VDC limit)
Current Drain	180mA squelched 200mA nominal unsquelched 250mA with full audio output
Crystal specification	136-151MHz Fx = (Fo-21.4MHz) / 2 151-174MHz Fx = (Fo-21.4MHz) / 3 216-250MHz Fx = (Fo-21.4MHz) / 4 420-512MHz Fx = (Fo-21.4MHz) / 8 Parallel resonant, third overtone, resistance 30 Ω max., 12pF load capacity, HC-25/U case
Physical [modular version]	5"x7.25"x2.5" enclosure w/ feedthru capacitors & UHF connector
Physical [rack version]	19"x5.25" rack panel, 5" deep includes meters, controls, and speaker

Specifications subject to change without notice

MR4 receivers are factory tested, aligned, and tuned to frequency before shipment. They are engineered to give years of reliable service with no periodic adjustment or maintenance. Their one year limited warranty is our statement of commitment to quality.



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