TABLE 1-1. RA6790/GM HF RECEIVER SPECIFICATIONS

Frequency Range	0.5 kHz to 29.999999 MHz
Frequency Resolution	1 Hz increment
Frequency Tuning	By keyboard entry or continuous tuning with selectable rates, FAST (1000 Hz), SLOW (30 Hz), and FINE (1 Hz) increments; BFO continuous in 10 Hz increments.
Frequency Indication	8 digit electronic readout of tuned frequency to 1 Hz; 3 digit and sign readout of BFO relative to IF center ±8.0 kHz.
Frequency Stability	±5 parts in the 10^8 per 10°C temperature increment over the range of 0°C to 50°C using internal 5 MHz reference oscillator. Provision for an external 1, 5 or 10 MHz reference input/output. 0 dBm nominal into 50 Ohms.
Detection Modes	CW/A1 Continuous Wave; CW/A2 Modulated Continuous Wave; USB/LSB (upper/lower sideband) A3A, A3H, A3J, A2A, A2H, A2J; AM/A3 Amplitude Modulation; A4 (Facsimile) ISB/A3B Independent Side Band (optional); FM/F3 Telephony.
Gain Control Modes:	
AGC	Control Range: An increase of 110 dB above AGC threshold will result in a change of output of less than 3 dB. Threshold Range (preset): −113 dBm to −100 dBm Time Constants: Attack: 20 msecs Decay: Short < 30 msecs Medium 200 + 100 msecs Long 3.75 seconds ±1.25 msecs
Manual/Automatic Gain Control	Provision is made on the front panel to select, and by use of the RF Gain Control, to manually control the AGC threshold anywhere within the range of 110 dB above the preset AGC threshold level.
Input Impedance	50 ohm nominal, 2:1 VSWR Type N Connector
Synthesized BFO	455 ±8 kHz in 10 Hz steps
Noise Figure	< 15 dB
Dynamic Range	RF: > 180 dB/Hz

TABLE 1-1. RA6790/GM HF RECEIVER SPECIFICATIONS (Cont.)

Sensitivity (500 kHz to 30 MHz): 1. SSB 2. AM	 −113 dBm (0.5 μV) for 10 dB (S+N)/N Ratio. −99 dBm (2.5 μV) for 10 dB (S+N)/N Ratio in a 6 kHz bandwidth.
Overall Selectivity (Standard Mechanical Filter Complement)	A wide variety of mechanical and crystal filters is available for optional requirements such as general purpose, low ripple, low shape factor, controlled delay, or linear phase. The standard filter complement is provided by six mechanical filters that are supplied with the receiver. This includes two sideband filters and four symmetrical filters. The seventh filter slot is linked in order to provide a fifth symmetrical bandwidth defined by the selectivity of the 20 kHz roofing filters. The -3 dB and -60 dB bandwidths are defined as follows: LSB/USB -3 dB >450 Hz to >3000 Hz -60 dB >-600 Hz to <4300 Hz The remaining five bandwidths are symmetrical BW1 -3 dB >300 Hz -60 dB <2 kHz BW2 -3 dB >1 kHz -60 dB <4.5 kHz BW3 -3 dB >3.2 kHz -60 dB <8 kHz BW4 -3 dB >6 kHz -60 dB <14 kHz BW5 -3 dB >20 kHz -60 dB <80 kHz
Intermodulation (Out of Band)*	For signals 100 kHz or more from receiver tuned frequency the third order intercept point is greater than +30 dBm. Second order intercept point is greater than +60 dBm. *Below 1.5 MHz these limits may be exceeded.
Intermodulation (In Band)	Better than −50 dB for two −10 dBm input signals within the IF passband when measured at the IF or line AF output.
Cross Modulation	The level of a 30% modulated signal, 50 kHz off-tune necessary to cross modulate an on-tune carrier to a depth of 3% shall be greater than +21 dBm (2.5 volts).
Blocking	1. On Tune: Less than 10% distortion for +13 dBm (1 volt) 30% Modulated AM input signals. 2. Off Tune: 1 dB on a 30% modulated on-tune signal when in the presence of a +23 dBm (3 volt) unmodulated carrier 50 kHz off-tune.
Reciprocal Mixing	The apparent noise appearing at the receiver input when in a 3 kHz bandwidth, caused by a 0 dBm signal 100 kHz off tune is less than −100 dBm.

TABLE 1-1. RA6790/GM HF RECEIVER SPECIFICATIONS (Cont.)

Image and Spurious Rejection	Greater than 80 dB, for signals at least ±50 kHz from tuned frequency.
Internal Spurious Responses	< −124 dBm
Outputs	1. IF: Frequency 455 kHz, Impedance 50 Ohms. Level - 10 dBm nom. Connector BNC. 2. Following outputs available at rear panel audio connector (25 pin Type D). AF: 100 Hz to 16 kHz for −3 dB. a. 1W nominal into 8 Ohm load. Distortion < 3% at 500 mW. b. Monitor: Metered AF line output. 1 mW, 600 ohms balanced <2% distortion. All receiver modes selectable at front panel. c. Line 1. AF line output. 1 mW, 600 ohms balanced <2% distortion. Operable only with ISB option. All modes select at front panel except LSB. d. Line 2. AF line output. 1 mW, 600 ohms balanced <2% distortion. Operable only with ISB option, OSB mode. AGC: Diversity Connection with ground which provides dc voltage 10 volts to 4 volts to signal levels between threshold and +110 dB. Similar connection for ISB channel when fitted. Fault: Indication of fault condition is available at the rear panel. 3. Phone: 30 mW into 600 Ohm load. Distortion <3% at 10 mW. Connector: Front Panel Phone Jack 4. REFERENCE OUT: Selectable TCX0 Reference frequency of either 1, 5, or 10 MHz (selected by links on A8 assembly) Connector: Rear panel BNC
Environmental	1. Operating Temperature: 0°C to 50°C 2. Operating Humidity: 10% to 85% non-condensing. 3. Altitude: Operation to 15,000 ft. 4. Bench Handling: MIL-STD-810C, Method 516.2, Procedure V 5. Vibration: MIL-STD-810C. Method 514 2 Procedure X 6. Storage Conditions: a. Temperature Range: −40°C to +70°C b. Relative Humidity: 10% to 95% non-condensing. c. Altitude: Up to 40,000 feet d. Fungis: Fungi identified in MIL-STD-810, Method 508.1, Procedure I.
Power Consumption	Less than 40 Watts (nominal)
Power Requirements	115/230 Vac ±10%, 48 Hz to 420 Hz, single phase.
Dimensions	Suitable for 19 inch (48.3 cm) rack or desk top console mounting: Heights: 5.25 in. (13.33 cm) Width: 19 in. (48.3 cm) Depth: 18.5 in. (47 cm)
Weight (approximate)	32 lbs. (14.5 kg)