

DATA

R-390A/URR

May, 1970

RADIO RECEIVER

Technical Data



For Commercial / Military applications

Featuring accuracy to within 300 Hertz, the R-390A/URR is a 25 tube, multiple frequency conversion superheterodyne receiver tuning 500 Hz to 32 MHz in 32 one MHz steps without hiptus.

Manufactured in accordance with U. S. Government specifications, the R-390A is a stable, sensitive and selective general purpose receiver. Overall frequency stability is in the order of 300 Hz or better over a 24 hour period; a line voltage change from 105 to 125 VAC introduces a frequency shift of less than 30 Hz. Image rejection at the 455 KC IF is not less than100 db; sensitivity is in the order of 0.5 microvolts from 0.5 KHz to 32.0 M Hz for a 10 db signal + noise to noise ratio for CW and 2.0 microvolts for AM throughout the frequency range of the receiver. Frequency accuracy is 300 Hz or better after indexing. Mechanical Filter selectivity is switch selectible in discrete steps from 100 Hz to 16 KHz; audio response is shaped by an 800 Hz filter in the "sharp" switch position for CW and is broadened to pleasant AM audio quality in the "wide" switch position.

DIVERSITY RECEPTION — The R390A is designed also for use in a diversity reception system designed to enhance the quality of the communication link whenever the receiving conditions cause signal fade. In this case two or more of the receivers are used in close proximity to each other. The spatial separation of the receiving antennas provides a higher probability of a usable signal from at least one receiver at a given time. Space diversity receiving systems provide distinct improvements of high-frequency radio transmissions. Each receiver has a cable connector to provide the received signal as IF output for space diversity system use. Radio transmissions as CW and single-tone modulation are used for Morse code operation while two-tone and frequency-shift modulation are used especially for tele-typewriter operation.

SPECIFICATIONS

Frequency Range 0.5 kHz to 32.0 MHz in 32 one MHz bonds. Medes AM, C.W., M.C.W., F.S.K., SSB. 300 Hz in any 24 hour period after warm-up. Stobility Selectivity 6 steps switch selectible. 100 Hz and 1000 Hz by reads of a crystal filter, 2-4-8-16 kHz, handwitts enabley separate mechanical filters. Setter than 3.5 microval's throughout Feiguency range CW/SSB, better than 1.6 microvalts, 0.5 MHz - 16.0 VHz and 2.2 microvalts 15.0 MHz - 32.0 MHz for A.M. Sensitivity AGC No more than a 13 db change in curput when the RF input is increased from 5 to 100,000 microvoite. Discharge time - Slow = 4.0 sectands Med. = 0.2 secunds Fost = 0.015 seconds AGC Time Constants Frequency Accuracy 300 hz after indexing to morest 100 kHz collibration point, Conversions Triple conversion from C.5 to 8 MHz; double from 8.0 to 32.0 MHz. Image & Spurious Rejection Ratios Image rejection or 455 kHz not less than 100 db over range of receiver, sourcous rejection icross over type) not less than 50 db; IF rejection not less than 70 db. Beat Frequency Oscillator Vorieble 13,5 kHz. Bucktosh Not more than 100 Hz. Calibrator 100 kHz calibrator by It in I.F. Output et Rear Panel With a 3.2 microvolt signal input through a 125 ohm currery antenna, output volts across a 60 ohm laad is not less than XI millivolts. Audio Output Impedonces L. ne audia - 540 to 660 shine; speaker (lacc) audia - 450-840 shins. With a 10 microvolt input, at least 500 milliwatts at the line cadio terminals and 1 milliwatt at the phone output. Audio Cutput Power Audiq Response Shora - 800 Hz; Wide - 1 Tdb - 300-3500 Hz. Audio Distortion No greater than 12% of rareo output. Noise Limiter Atjustable clipping level. Not less than 37 dishelow 500 mt/ output, Hum Level Metering VU meter for line output, corner Level from 0-100 ss. (5th = 2 microvolts). Power Supply 115/230 Volts AC. 50/60 Herts Power Input Not over 275 watts with oversion, 175 watts with oversion. Continuous use with a duty cycle of 18 hours on and 6 hours off from $\sim 40^9 {\rm F}$ to $-+140 {\rm F}_{\star}$ 97% relative numbers. Duty Cycle Tube Complement Total - 25 (1) 6DC6 (2) 6AK5W (7) 58144 SAC (3) 5AK6 (2) 2525W METERS SWITCHES Front Ponel Equipment CONTROLS ADJUSTMENTS Line Moter Line Cale BFO Fitch Diet Leth VU(Line Level) Zem Adi. Sondwidts Antenna Teim Lacot Gair RF Gain Megohertz change

Audia Responsa Break-In

Miscellaneous Rear Panel Equipment:

Belanced Antenna Input Unbolanced Artenna Input

IF Output Fuse Holders (3) Power Socker Over Switch

Spare fuses (3)

Screwdriver Wretzh 19" wille

75 the

Front Joek

Terminal Strip Connections:

R= Car AGE Local Audio Jinde Land Phones Seeal In -ine Audio Ground

Dimensions Weight.

16" deep -105/4" wat

Specifications and price subject to change without notice



The HAMMARLUND Manufacturing Company Incorporated

A subsidiary of Einstronic Assistance Corporation 73-88 Hammiround Driver, Wary Hill, North Carmina 28754