

R-3035

LF-HF Dual Receiver

(U.S. Military Nomenclature R-2411/U)



An advanced surveillance receiver which offers extra features as standard equipment.

KEY FEATURES

- Two independent receivers
- Internal preselector filters
- Various remote terminal interface options
- Modular construction
- Built in fault detection
- Up to six second IF filters in each receiver
- Simple to operate
- Selectable external reference oscillator frequencies
- Multi mode detection LSB, USB, CW, AM and FM
- Infinite memory storage
- Narrow and wideband IF monitor outputs

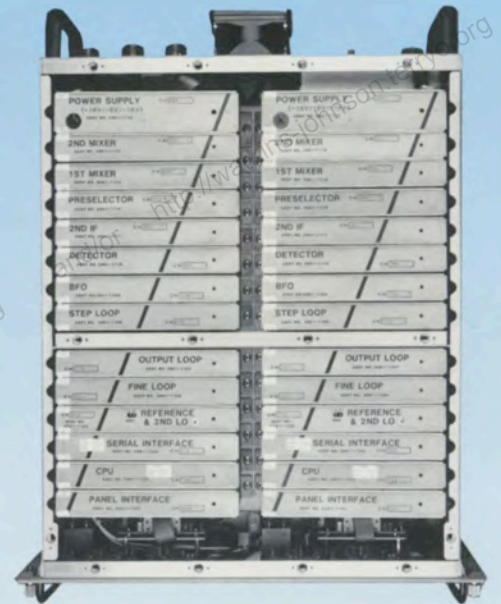
The R-3035 is the latest in the series of LF-HF receivers from Cubic suitable for a variety of signal detection applications. Based on the design of the earlier R-3030 and R-2307/U models, the R-3035 offers

maximum operator flexibility via front panel keypad or remote terminal interface control.

All key features are included in the basic price of the receiver. Normally a customer needs only to specify 2nd IF filter selection and desired remote terminal interface when placing an order.

Maintenance on an R-3035 can be performed by non-technical personnel due to the modular construction techniques used. A front panel fault annunciator alerts an operator to a fault condition. Light emitting diodes on each module identify the faulty module. Corrective action can be quickly taken by removing the module via two quarter turn fasteners and replacing with a spare module. The entire replacement operation can take place within a matter of minutes.

The R-3035 is intended for applications where space, cost, reliability and flexibility are major concerns. Contact Cubic Communications to see how the R-3035 can satisfy your next LF-HF surveillance receiver requirement.



R-3035 LF/HF RECEIVER SPECIFICATION

FREQUENCY

Range:
50 kHz - 30.00 MHz

Resolution:
10 Hz

Tuning Modes:
Via front keypad, tuning knob or remote terminal interface

Display:
7 Segment LED

Memory:
Infinite storage via nonvolatile RAM.
Stores data for 100 channels

SYNTHESIZER

Stability (Internal Standard):
±1 PPM over the specified temperature range. 10 MHz internal reference oscillator frequency

Synthesizer Lock Up Time:
5 ms typical

MODES:
LSB, USB, CW, AM, FM

RF SECTION

Input:
50 ohms TNC connector

VSWR:
Less than 3:1

Sensitivity:
For 10 dB SINAD (above 1.6 MHz)
SSB (3 kHz Bandwidth) min. - 113 dBm
CW (500 Hz Bandwidth) min. - 124 dBm
AM (8 kHz Bandwidth 90% modulation) min. - 107 dBm

Protection:
Provided for input signals up to 10 watts. Automatic reset.

Preselection:
Automatic band selection. Eight one-half octave filters between the range of 1.6-30 MHz. Two filters in the range of 50 kHz - 1.6 MHz.

| Band | Frequency Range |
|------|-----------------|
| 1 | 0.0 to .499 |
| 2 | 0.5 to 1.599 |
| 3 | 1.6 to 2.299 |
| 4 | 2.3 to 3.299 |
| 5 | 3.3 to 4.799 |
| 6 | 4.8 to 6.899 |
| 7 | 6.9 to 9.899 |
| 8 | 9.9 to 14.299 |
| 9 | 14.3 to 20.499 |
| 10 | 20.5 to 30.000 |

AGC

AGC Range:
110 dB minimum

AGC Threshold:
-112 dBm (audio -6 dB ref. level at 50 uV)

AGC Disable:
AGC or Manual Gain Control

Gain Control:
0-120 dB gain reduction (min.) local or remote in 1 dB steps

Attack Time:
Less than 10 ms nominal

Decay Time:
Zero: 30 ms typical
Short: 250 ms nominal
Medium: 1 second nominal
Long: 3 seconds nominal
Off: Manual gain control only

Attack/Release Time:
50 ms nominal (AM Mode only)

IF SECTION

First IF:
40.455 MHz

First IF Bandwidth:
10 kHz @ -6 dB

Second IF:
455 kHz

Second IF Bandwidth (Selectable):
.5 kHz @ -6 dB
1 kHz
3 kHz
8 kHz
6 positions. Other Bandwidths available upon request.

INTERFERENCE IMMUNITY

IF Rejection:
100 dB minimum

Image Reflection:
90 dB minimum

Cross Modulation:
Unmodulated wanted signal of -67 dBm together with a modulated (30% at 1 kHz) unwanted signal of -20 dBm spaced 50 kHz apart will produce less than 10% cross modulation of wanted signal.

Blocking:
Attenuation of a wanted RF signal of -67 dBm and caused by an unmodulated signal of +10 dBm spaced 100 kHz away is less than 3 dB

Inherent Local Oscillator Re-Radiation:
-107 dBm, up to 1 GHz from receiver antenna connector into 50 ohms.

Spurious Responses:
-120 dBm equivalent or less for -50 dBm input signals

Generated Spurious:
-120 dBm input equivalent or less, 2 to 30 MHz
-110 dBm input equivalent, or less, 50 kHz to 2 MHz

Intermodulation Distortion:
Second-order Intermodulation Distortion: Input intercept point +50 dBm. Test tones of up to -5 dBm.

Third-order Intermodulation Distortion: Input intercept point of +27 dBm minimum. Test tones of up to -5 dBm with 50 kHz signal spacing.

INPUT/OUTPUT

Outputs:

First IF:
40.455 MHz with 1 MHz minimum bandwidth, 50 ohms at approximately 10 dB gain from input

Second IF:
455 kHz at selected bandwidth and nominal -10 dBm level, +/- 3 dB, over AGC dynamic range

Audio:
AM, CW, LSB, USB: 0 +/- 3 dB over AGC dynamic range. FM 0.5v/kHz AC coupled (4v p-p max.), 600 ohms balanced pair on audio connector (2 pair per assembly), short circuit protected, less than 5% distortion at rated output.

Headphones or Speaker:
Dual 0 to 12 V p-p, 8 ohm source impedance to front and rear panel phone jacks. Front jack with ring contact to adjacent receiver, both jacks with tip contact to own receiver. Short circuit protected.

FM Video:
1 V per kHz (positive sense, DC coupled) 93 ohm single ended. Uses two pins on audio connector.

Signal Strength:
Analog format using two (2) pins on audio connector (0 to 5 VDC)

Inputs:
Synthesizer Reference:
1, 5 or 10 MHz internally selectable. 0 dBm, 50 ohms: one TNC connector per chassis.

Antenna:
50 ohms nominal

GENERAL DATA

Power Requirements:
60 watts per receiver
90-150 or 180-260 VAC 47-400 Hz
Individual switching mode power supplies for each receiver

Dimensions:
Standard 19" rack mount
19" (48.28 cm) wide, 5.25" (13.34 cm) height, 23" (58.42 cm) deep

Weight:
50 lbs. 22.8 kg

ENVIRONMENTAL DATA

Temperature Range:
-20 to +60 degrees C Operating
-40 to +70 degrees C Storage

Relative Humidity:
Per MIL-STD-810D (Method 507.2)

Vibration:
Sinusoidal: Per MIL-STD-167-1
Random: Per MIL-STD-810D (Method 514.3)

Shock:
Per MIL-STD-810C

EMI/EMC:
Per MIL-STD-461B Class A1A

