The R-2368B(V)1/URR is a high-performance, cost-effective, VLF/LF/MF/HF receiver covering the frequency range from 10 kHz to 30 MHz in 1 Hz increments. Using modern microprocessor control technology, this receiver provides the operational features required for the professional communicator, while still maintaining the "touch" of the familiar tuning controls of older designs. The excellent RF performance of the R-2368B(V)1/URR receiver, as exhibited by the superb intermodulation, reciprocal mixing characteristics, and frequency agility, complement the unit’s control features in providing state-of-the-art communications capability.

The ability to enter and store up to 100 channels from the front panel or over remote control, makes the R-2368B(V)1/URR a versatile communications tool for surveillance, networking, or general purpose receiving. Each of the 100 channels may be programmed for frequency, mode, IF; BW, BFO, FSK and AGC settings. The channels may be scanned at variable rates, either sequentially or in programmed groups, with the capability of being selected by the automatic scan control feature. An internal FSK Demodulator is also provided.

The receiver contains a comprehensive built-in test equipment (BITE) network, which allows extensive microprocessor-controlled self-testing to isolate faults at the modular level. Surveillance BITE monitors the RF input, the power supply, and the frequency stability.

Manual tuning and channel selection is activated via a front panel keypad or tuning knob. Operating parameters such as detection mode, filter bandwidth (typically: CW – 0.3 kHz, AM – 6 and 16 kHz, USB/LSB – 2.7 kHz, and FM – 16 kHz), and AGC mode (Slow, Medium, Fast, Data, and Manual) are pushbutton selectable.

Receiver operating parameters and self-testing results are displayed on two front-panel numeric and alphanumeric displays. Full remote control capability is accomplished with an internal remote control system compatible with MIL-STD-188C, EIA Standard RS-232C, or RS-422 formats.

The rear panel contains 50 ohm connectors for RF antenna input; filtered 455 kHz IF output, unfiltered 455 kHz; ISB output; 5 MHz frequency standard inputs; and frequency standard output, local control lines, and other functions. The receiver is supplied with rack mount kit including rack shock pins and shock blocks.

The self-check sequence is automatically performed by momentarily pressing the TEST button located on the front panel. Normal length of the self-test for all assemblies is five seconds with all tests performed sequentially following the RF signal path. If it is determined that a fault exists in a particular assembly, that assembly number and the corresponding fault code number defining the type of failure are indicated on the receiver’s front-panel alphanumeric display. Because of the BITE system and modular equipment design, demonstrated MTTR is less than ten minutes.
### Specifications for the R-2368B(V)1/URR

#### Electrical

- **Frequency Range**: 10 kHz to 29.999999 MHz
- **Frequency Resolution**: 1 Hz increments
- **Tuning**: Continuous, with lockout, with seven selectable ranges and keypad entry.
- **Tuning Time**: Tuning time between any two frequencies is less than 20 msec
- **MTBF**: Greater than 6215 hours demonstrated per MIL-STD-781C
- **Frequency Stability**: 1 part in 10^8 - OVEN
- **Frequency Standard**: Input: 5 MHz, 0.5 VRMS; Output: 5 MHz, 0.5 VRMS/50 ohms (daisy chain feature with automatic frequency standard switchover)
- **Channel Memory**: 100-channel capacity capable of being loaded locally or remotely with complete receiver parameters. Retention of operational parameters without power is provided for one month minimum
- **Scanning**: Scan any set of consecutive channel numbers (channel scan) or any of ten preprogrammed sets of random channel numbers (group scan)
- **Automatic Scan Control**: Allows receiver to automatically stop scanning when a received signal exceeds a predetermined threshold. Scanning will resume automatically when the signal falls below the threshold or may be selected to maintain the frequency.
- **Readout/Display**: Receiver frequency, BFO frequency, channel assignment mode, IF/BW/filters, AGC, BITE, dwell, scan, group, FSK parameters
- **BFO**: 10 Hz synthesized tuning ± 9.99 kHz
- **Internal Preselector**: Digital operation, 20 dB attenuation ± 10% off frequency
- **Maximum Signal Input**: Receiver protected for up to 100 watts at the antenna input
- **Modes of Operation**: LSB, USB, 2-channel ISB, AM, CW, FM; Optional: 4-channel ISB, FSK with internal modem or external modem
- **Link-11/TADIL-A**: With Delay-Compensated Filters
- **Link-11/TADIL-A Operability**: For 10 dB (S + N) : N radio CW: 0.2 µV, 50 kHz – 30 MHz 1.0 µV, 14 kHz – 50 kHz 1.6 µV, 10 kHz – 14 kHz AM: 2.5 µV, 50 kHz – 30 MHz SSB: 0.6 µV, 50 kHz – 30 MHz 3.0 µV, 14 kHz – 50 kHz IF Bandwidths**: Standard supplied Mode: 3 dB BW (kHz) CW: 0.15, 0.3, 1.0 AM: 6.0/16.0 FM: 16.0 USB: 300 – 3050 Hz LSB: 300 – 3050 Hz ISB (each channel): 300 – 3050 Hz

#### Phase Stability

- Typically no greater than 2 degrees. Fully meets Link-11 data requirements.

#### Intermodulation

- In-Band: -50 dB or better for two 100 mV (7 dBm) signals within the IF passband.
- Out-of-Band: <10 dB (S + N) + N for two –5 dBm signals removed >10% from tuned frequency

#### Cross Modulation

- -20 dB or better for 500 mV 30% modulated interfering signals removed 20 kHz or greater from the desired signal of 10 µV.

#### 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 1.0 µV (-107 dBm).

#### Quieting

- Ultimate (S + N) : N: 50 dB

#### Spurious Responses

- Image and IF: -100 dB; Spurious: Internal less than –121 dBm equivalent except for seven less than –101 dBm equivalent; External: -80 dB.

#### AGC

- Range: -3 dB audio output variation for 1 µV to 1 V signal range. (Threshold internally adjustable from 0.5 µV."

#### Time Constants

- **Attack Time**: <20 msecs; **Hang and Decay Time**: Short <35 msecs, Medium 200 ±50 msec, Long 2.5 ±0.5 secs; **Data**: Link-11 compatible

#### Audio Outputs

- Phone: +15 dBm/600 ohms/5% distortion Line Output: -20 to +15 dBm, -26 dB distortion, (optional +10 dBm 600 ohm balanced)/Hum and Noise: less than 50 dB.

#### IF Outputs

- Built-in Test Diagnostics

#### Remote Control

- An internal microprocessor-based system capable of accepting asynchronous serial data using the following formats: MIL-STD188C, EIA Standard RS-232C and RS-422. Remote Control protocol may be Harris proprietary or ASCII.

#### Remote control functions

- Frequency, Channel Select, IF BW, Mode, AGC-TC, BFO, Fault-BITE Status, Scan Select, RF Gain, AF Gain, RF and Audio Level Status, and Channel Load, FSK Demod.

#### Installation

- **Power Requirements**
- **Size**: 115/230 VAC ±20%, 47 – 420 Hz, 90 watts max. Rack mount and desk mount capability 5.25H x 19W x 19.5D (less front panel projections) inches max. (13.8H x 48.3W x 49.5D cm)

#### Environmental

- **Vibration**: MIL-STD-167-1, Type 1
- **Shock**: MIL-S-901; Grade A, Class 1, Lightweight, Type A (hard mount)
- **Temperature**: Operating: -10°C to +55°C Non-Operating: -62°C to +71°C
- **Humidity**: 0 to 95%