

R-1421/URR

RECEIVER



1-4. Purpose and Use

Receiver, Radio R-1421A URR and Receiver, Radio R-1421 B URR are used in general communications applications for surveillance and signal analysis applications. It is used for reception of amplitude modulated (am.), continuous wave (cw), and single side band signals (ssb) in the high frequency (HF) band. The receiver covers the 1 MHz to 31 MHz frequency range in 30 bands. Each band is 1 MHz wide with continuous tuning throughout the band. A front panel switch selects the desired band; coarse and fine tuning controls allow continuous tuning through this band. The intermediate frequency (IF) bandwidth is variable, and bandwidths of 0.5 through 12 kHz are selected by a front panel switch. A tunable beat frequency oscillator (bfo) operates with the detectors for reception of cw or ssb signals. A front panel switch provides for selection of either manual gain control (mgc) or one of three automatic gain control (agc) time constant positions. The three agc positions provide three different agc decay times. The HF receiver has a carrier-operated relay (c.o.r.) circuit which is carrier level sensitive and allows the HF receiver to operate other electrical equipment. The HF receiver may be used with any unbalanced antenna which tunes to the range of 1 to 31 MHz and has a nominal input impedance of 50 ohms. A front panel headphone jack is provided to monitor the audio output.

1-5. Technical Characteristics

Frequency range 1 to 31 MHz.
Input impedance 50 ohms, nominal.
Input vswr Less than 2 to 1.
Modes of reception amf, mcw, cw, ssb.
Sensitivity minimum at
3-kHz bandwidth Am., 1.2 uv (-105 dbm) with
10 db $\frac{S + N}{N}$
30% modulation at 1 kHz;
cw, ssb, 0.4 uv (-112 dbm)
with 10 db $\frac{S + N}{N}$
30% modulation at 1 kHz.
Tuning Digital presentation by mechanical counter. Readable to 0.1 kHz.
Calibration accuracy ± 1 kHz when referred to the nearest 100-kHz checkpoint.

Calibration Markers at 100-kHz intervals.
Bandwidth selectivity 12, 6, 3, 1.5, and 0.5 kHz.
Shape factor 1:2.1 or better, 6 to 60 db.
IF output 455 kHz.
Age dynamic range 3-db maximum output change with input range of 1 to 50,000 uv.
Age time constants 3 ms (approx); decay: adjustable.
Bfo ± 3 kHz.
Audiofrequency output 250 mw, 600 ohms balanced, rear panel; 20 mw, high impedance, front panel.
Audiofrequency distortion $< 8\%$.
IF rejection 75 db or better.
Noise limiter Carrier controlled after preset for limiting level relative to modulated carrier envelope.
Squelch Adjustable threshold (manual).
Carrier-operated relay Threshold settable throughout dynamic range (50-ms delay or dropout).
Power input 105-130 volts, 50 to 400 Hz.
Power consumption 25 watts average (including crystal oven).
Weight 15 1/2 pounds.
Size 8 5/8 in. wide by 3 1/2 in. high by 15 in. deep.

www.radiopharos.it