

**Equipment
for Radio
Communications**

R.L. DRAKE COMPANY



MODEL DSR-1 RECEIVER

Continuous coverage 10 kHz to 30 MHz

Digital synthesizer frequency control

Frequency displayed to 100 Hz

All solid state

AM, SSB, CW, RTTY, ISB

Rack or desk mount

**Accessories available to accommodate
specific requirements**

General

The R. L. Drake model DSR-1 receiver is a commercial grade communications receiver employing the most up to date solid state devices and circuitry offering continuous coverage from 10 kHz to 30 MHz. The received frequency is indicated by six NIXIE tubes to 100 Hz. All frequency injections of the DSR-1 are controlled by a phase locked digital synthesizer which allows incremental frequency selection in 10, 1, and 0.1 MHz steps. The remaining 0 to 0.1 MHz is continuously adjustable by a highly stable variable oscillator from the fine tuning knob on the front panel. Modular construction on easily accessible printed circuit boards is used throughout the DSR-1. The large use of dual gate MOS-FET transistors in the DSR-1 circuitry contributes to its superior intermodulation, AVC, wide dynamic range and overload performance. The front panel controls allow the operator to select frequency, AM or SSB product detector, I. F. bandwidth, AF gain, BFO pitch, fast or slow AVC, manual RF gain and the highly effective Drake series gate noise blanker. ISB (Independent Sideband) is a built-in feature of the DSR-1. Separate I.F. crystal filter, I.F. amplifier, and audio output circuits allow two simultaneous communication channels to be employed on one frequency assignment, doubling the information receiving capacity.

Consideration in the design of the DSR-1 has been given to special customer requirements. Accessories and space have been reserved in the DSR-1 so that performance and operating modes to fill special customer needs can be accommodated. The R. L. Drake DSR-1 receiver is among the lowest cost commercial grade digital synthesized receivers available today upholding the R. L. Drake Company's philosophy, "More Performance and Lower Cost Through Engineering."

Specifications

Frequency Range	10 kHz to 30.0 MHz.		
Modes of Operation	USB, LSB, CW, RTTY, AM, ISB.		
Frequency Readout	Complete to 100 Hz on six NIXIE tubes.		
Frequency Selection	10 MHz, 1 MHz, 0.1 MHz switch selected. 0 to 0.1 MHz continuously variable.		
Frequency Stability	Drift does not exceed 150 Hz in any 15 minute period with a temperature change of 7° C per hour.		
Sensitivity	0.5 microvolt for 10 dB SINAD at 2.4 kHz SSB mode. 1.0 microvolt for 10 dB SINAD at 6 kHz AM mode.		
Image Rejection	Greater than 70 dB relative to 1 microvolt.		
Blocking	Greater than 100 dB relative to 1 microvolt.		
Cross Modulation	Greater than 90 dB relative to 1 microvolt.		
Intermodulation	Greater than 80 dB relative to 1 microvolt.		
Opposite Sideband Suppression	Greater than 60 dB at 500 Hz into the opposite sideband.		
I.F. Bandwidth	Selectivity	—6 dB	—60 dB
	8 kHz	8 kHz	16 kHz
	2.4 kHz	2.4 kHz	4.3 kHz
	1.2 kHz	1.2 kHz	2.4 kHz
	0.4 kHz	0.4 kHz	0.8 kHz
I.F. Outputs	50 millivolts into 50 ohms at 1st I.F. 5.05 MHz and 2nd I.F. 50 kHz		
Automatic Gain Control	Audio Output rises less than 3 dB for RF input change of 1 microvolt to 100 millivolts. Attack time: 100 microseconds. Release time: 750 milliseconds (Slow AGC) 25 milliseconds (Fast AGC)		

Specifications (Continued)

Antenna Input Impedance

10 kHz to 500 kHz 1000 ohms.
500 kHz to 30 MHz 50 ohms.

Audio Output

3 watts at 5% maximum distortion into 3.2 ohm load.
1 volt maximum into 600 ohm output line.
3.2 ohm unbalanced and two 600 ohm balanced outputs.
ISB output is one of the two 600 ohm balanced outputs.

Audio Hum and Noise

Greater than 60 dB below rated output.

BFO

Derived from standard clock or variable over a ± 3 kHz range from front panel.

Power Requirements

115/230 volts $\pm 10\%$ single phase 50-420 Hz 15 watts.
12 or 24 VDC supply optional.

Dimensions

5.25 in. H x 19 in. W x 15 in. D.
(13.3 cm H x 48 cm W x 38 cm D)

Weight

17 lbs (7.7 kg)

Any remaining questions concerning the DSR-1 or any other Drake product will be gratefully answered by writing the R. L. Drake Company, 540 Richard Street, Miamisburg, Ohio 45342 USA.



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