



VHF - UHF COMINT RECEIVER SCR - 7210



FEATURES:

- Fully Synthesized
- Digitally Controlled
- Modular Construction
- High Dynamic Range
- Simultaneous AM, FM
- CW and SSB Reception

DESCRIPTION:

The SCR - 7210 VHF/UHF Receiver is a synthesizer-tuned surveillance receiver covering the frequency range of 20 to 1100 MHz. This receiver features accurate and stable tuning with high local oscillator spectral purity. Modular construction provides flexibility in selection of IF bandwidths, frequency coverage and demodulation to suit your requirements. Available as drop in modules are the SCC - 7100 Predetection Converter or SCD - 7300 Spectrum Display Unit.

The SCR - 7210 can be controlled by the front panel or remotely controlled by digital commands from an external source.

Designed into the SCR - 7210 logic circuitry is a rechargeable battery system to automatically maintain control settings in the event of power line interruptions. The battery will hold all registers at the last setting for at least two hours. When power is restored, the battery is automatically recharged.

All-solid-state- modular design ensures reliability and minimal maintenance. Troubleshooting is facilitated by ready access to all components.

Compact and rugged, the SCR - 7210 occupies only 5¼" of vertical rack space, and operates on 115/230 VAC 48-62 Hz.

The SCC - 7100 Predetection Converter is designed to convert a 21.4 MHz predetection IF signal to a center frequency of 1.05 MHz suitable for recording on a 2 MHz bandwidth tape recorder.

The SCD - 7300 Spectrum Display Unit is designed to provide a presentation of spectrum activity in the IF bandpass of the receiver. The unit features a log display of signal amplitude vs frequency.

SCIENTIFIC COMMUNICATIONS, INC.

3425 Kingsley Road, Garland, Texas 75041 TEL (214) 271-3685 TWX 910-860-5172

2929 Eskridge Road, Fairfax, Virginia 22031 TEL (703) 698-1450

SPECIFICATIONS:

SCR-7210

Frequency Range 20-1100 MHz.
Frequency Resolution 100 Hz.
RF Input Impedance 50 Ω , nom.
RF Input VSWR 2.5:1, Max.
RF Input Noise Figure 8dB, max. from
20 to 500 MHz;
9dB, max. from
500 to 1100 MHz.

Intermodulation Intercept Points
in-band referenced to RF Input:

2nd Order + 10 dBm, nom.
3rd Order -5 dBm, nom.

RF Input Dynamic Range From max. sen-
sitivity to -5 dBm.

Frequency Accuracy $\pm 1 \times 10^{-6}$
Internal Reference

External Reference Frequency 5 MHz or
1 MHz, nominal level is 0
dBm in to 50 Ω .

Image Rejection 80 dB, min.

Phase Noise -90 dBc/Hz at 20 KHz
from Fc.

Predetection IF Output 21.400 MHz center
frequency; level is \approx 30dB
above RF input.

IF Gain Control Manual, automatic.
Modes

A G C Range Provides control over
the entire Rf input
dynamic range of the
receiver with output
change less than 10 dB.

Internally Generated Below -115 dBm
Spurs equivalent input.

Spurious Rejection 60 dB, min.

LO Level at RF Input -85 dBm max.

Demodulation Modes AM, FM, Log.
CW and SSB available as option.

IF Bandwidth Choice of four of the
following: 20 kHz, 50 kHz,
75 kHz, 100 kHz, 200 kHz,
500 kHz, 1 MHz, 2 MHz,
4 MHz standard. Others
available on request

Video Output 2 volts peak to
peak into 50 Ω , nom.

Audio Frequency Response ± 1 dB, max. from
200 to 3600 Hz.

Audio Output Level 2 volts peak to peak
(rear panel) into 50 Ω rated power.

Headphone Audio Level Continuously adjust-
able from zero to 10 mW
into 600 Ω load

Speaker Output Level 200 mW into 8 Ω , max.
adjustable via front panel.

Audio-Harmonic Distortion Less than 1% at
rated power.
Carrier-Operated-Relay (COR) SPDT contacts brought
out to terminal
strip on back panel. 2 A @
28 Vdc or 115 Vac resistive.

Temperature Receiver will operate
from 0^o to 50^o C.

Size 5.25 inches high, 19 inches
wide 20 inches deep.

Weight Approximately 60 pounds.

AC Power Input 115/230 Vac, 48-62 Hz

Power Consumption 100 watts, nominal

EMI Receiver will meet the
requirements of Mil-STD-461.

SCC-7100

Input:

Frequency 21.4 MHz
Level -80 dBm to -10 dBm
Impedance 50 ohms

Output:

Center Frequency 1.075 MHz
Bandwidth 2 MHz
Level 1 Volt p-p into 50 ohms

Image Rejection 35 dB min. 40 dB over
80% of bandwidth

Envelope Delay
(.150 2.0 MHz) 350 nanoseconds

Noise Power Ratio 35 dB minimum

Manual Gain Control 70 dB minimum

AGC Range 70dB

Attack Time 100 u sec (full range)

Automatic Dual Decay Rates 10 seconds
and 100 milliseconds

Frequency Accuracy (Internal)005%

Power 115 VAC \pm 10%
50 to 400 Hz 15 watts

Size 1 $\frac{3}{4}$ " H x 7" W x 18" D

SCD-7300

Input:

Frequency 21.4 MHz
Dispersion 8 MHz Max.
Connector BNC
Impedance 50 ohms
Level -80 to -10 dBm

Display Area 1 1/8" x 2 $\frac{3}{4}$ " min.

Sweep Linearity 5%

Sweep Rate 5-30 Hz Adjustable

Resolution Bandwidth 10 kHz

Image Rejection 90 dB

IF Rejection 85 dB

Marker Accuracy \pm 5 kHz

Power 115 VAC \pm 10% 15
Watts 50-400 Hz

Size 1 $\frac{3}{4}$ " H x 7" W x 18" D