



## SIR-1024 Chirpsounder

LF/ HF DSP MONITORING RECEIVER



**WIDE FREQUENCY RANGE: 2 MHz to 30 MHz**

### APPLICATIONS

- HF Communication
- HF Over the Horizon Radar
- Quasi Vertical Incidence HF Sounder

### FEATURES

- 180 seconds Linear Frequency (LFM) Demodulator for Vertical Incidence (QVI) Sounder
- Ultra High Dynamic Range: 80 dB IP2
- -135 dBm minimum Detectable Signal



Parameter	Specifications
<b>Frequency Range:</b>	2 MHz to 30 MHz
<b>Modulations:</b>	AM, FM, LSB, USB, CW, ISB
<b>Tuning Resolution:</b>	1 Hz
<b>Internal Frequency Accuracy:</b>	0.7 PPM max
<b>RF Input VSWR:</b>	50 ohms, 2.5:1 VSWR max.
<b>HF Preselector:</b>	4 Band Sub octave [MHz]:2.0 – 4.0, 4.0 – 8.0, 8.0 – 16.0, 16.0 – 30.0
<b>Noise Figure (@ IF out):</b>	12 dB max Typical 15 dB Max
<b>Out of Band Input IP2:</b>	+ 80 dBm
<b>Out of Band Input IP3:</b>	+ 35 dBm typical
<b>In Band IP3</b>	0 dBm minimum
<b>Maximum RF Input without Damage:</b>	+20 dBm
<b>Image Rejection:</b>	≥ 90 dB
<b>IF Rejection:</b>	≥ 90 dB
<b>Reconstructed IF Center Frequency:</b>	455 KHz with 500 Hz BW
<b>IF Output Level:</b>	≥ - 20 dBm / 50 ohms
<b>Phase Noise:</b>	
1 KHz offset	-110 dBc/Hz Typical
10 KHz offset	-110 dBc/Hz Typical
100 KHz offset	-110 dBc/Hz Typical
1 MHz offset	-125 dBc/Hz Typical



<b>Tuning Time:</b>	<10 msec
<b>LO Level at RF Input:</b>	-80 dBm, maximum
<b>Scan Function:</b>	Channel and frequency bandwidth scanning: set start frequency, cut-off frequency, frequency step size, step size speed, scan signal hold time and scan signal level , and store memory ≥100 channels
<b>Gain Control Modes:</b>	AGC,MGC
<b>AGC Mode:</b>	Attack Time: <120 msec for 100 dB Change Decay Time: Up to 8000 msec for 100 dB Change
<b>Headphone / Speaker Audio Output:</b>	0-1 V p-p Front Panel Control (1/8" Stereo Jack)
<b>BFO:</b>	Adjustable +/- 5 KHz, 1 Hz fine Frequency Step
<b>Line Audio Output:</b>	0 dBm (100 Hz to 5KHz @ -3 dB)
<b>Squelch:</b>	User Control, 55 dB Range
<b>Mute:</b>	User Control
<b>Sensitivity: (For 10 dB SINAD)</b>	AM ( 6.4 KHz BW): -103 dBm input CW (300 Hz BW): -122 dBm input SSB (3.2 KHz BW): -112 dBm input FM (16 KHz BW): -98 dBm input, 5 KHz deviation, 400 Hz modulation: 20 dB SINAD
<b>Minimum Detectable Signal</b>	-135dBm Typical (Sweeping CW) @ 500Hz IFBW & 0 dB SNR
<b>BUILT IN TEST (BIT)</b>	Three Phase Lock Alarm, Over Temp
<b>CONTROL</b>	
<b>Local Manual Control:</b>	N/A
<b>Remote Programming:</b>	Ethernet 10/100 base T
<b>ENVIROMENTALS</b>	
<b>Operating Temp Range:</b>	0° to +50 ° C, MIL-STD-810E Method 501.3, 502.3
<b>Non Operating:</b>	-30° to +85° C, MIL-STD-810E Method 501.3, 502.3
<b>Internal Cooling:</b>	Internal Fan
<b>Relative Humidity:</b>	Up to 95%, Non Condensing, MIL-STD-810E Method 507.3
<b>Altitude:</b>	13,000 Feet
<b>EMI:</b>	Designed to Meet MIL-STD-461C, CE03 and RE02
<b>Shock:</b>	MIL-STD-810E, Method 516.4, Procedure VI
<b>Vibration:</b>	MIL-STD-810E, Method 514.4, Procedure I, Category 9, Figure 514.4-15
<b>AC Power:</b>	95 to 265 VAC, 47-63 Hz, <100 Watts



## MECHANICAL

Size:	19" 1U (1.75" H X 22" D X 17" W)
Dimensions	8.5", 2U (3.5" H X 22"D X 8.5" W)
Weight:	20 Pounds

## REAR PANELCONNECTORS

Antenna	BNC-F
Ethernet 10/100 TCP/IP	RJ-45
10MHz Ext Ref Input	BNC-F
Reconstructed IF Output	BNC-F
1PPS Sweep Start Input	BNC-F
Line Audio Output	BNC-F
Video Out	BNC-F
Serial Interface	RS-232

## FRONT PANEL CONNECTORS

Phone (Audio) Output:	1/8" Miniature Stereo Jack
Headphone Volume	Manual
AC Power On/ Off	

## ABOUT FEI-ELCOM TECH, Inc

Elcom designs and manufactures instruments and modules in the RF and Microwave frequency spectrum for broadband and narrow band applications in ATE, Aerospace/ Defense, SIGINT and commercial communications. Proprietary technologies include low phase noise fast switching direct analog synthesis, low noise indirect PLL designs, and RF DSP up to 67 GHz.

## FOR ADDITIONAL INFORMATION PLEASE CONTACT

Tel: (201) 767-8030, [sales@fei-elcomtech.com](mailto:sales@fei-elcomtech.com)

**Note:** These documents may contain FEI-Elcom Tech Proprietary Information and are to be used only for the purposes for which they have been supplied and are not to be duplicated or disclosed in whole or in part without written permission from a duly authorized representative of FEI-Elcom Tech .

*\*\*Export of FEI-Elcom Tech products is subject to U.S. export controls. Licenses may be required.*