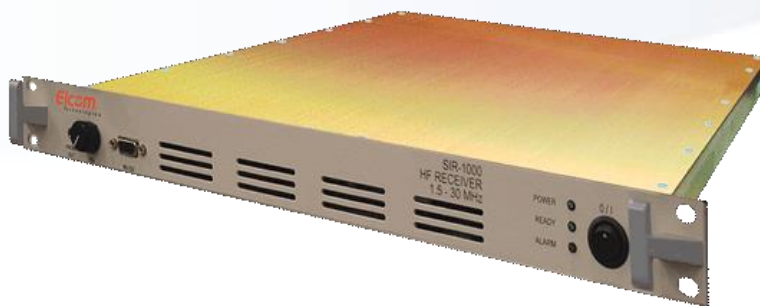




SIR-1022

LF/ HF DSP SOFTWARE DEFINED MONITORING RECEIVER



WIDE FREQUENCY RANGE:

10 KHz to 30 MHz

FEATURES

- High Dynamic Range: Input IP3 >30 dBm
- DSP Based AM, FM, LSB, USB, CW, ISB, FSK Demodulation
- Fast Switching Synthesizer with 1 Hz Tuning Resolution
- Excellent Phase Noise Performance
- 5 bands HF Switched Sub-Octave Band pass Filter Preselector
- Manual and Automatic Gain Control with Adjustable Threshold
- 455 KHz IF Frequency. BW 300 Hz to 16 KHz
- Ethernet 10/100 BaseT, RS 232
- IQ over Ethernet
- 1U 19" Rack Standard, VME Optional
- +/- 5 KHz BFO
- Remote Control Software

APPLICATIONS

- Dynamic Spectral Management and Surveying
- SIGINT
- Synthetic Instrumentation
- Radio Monitoring of Broadcast Station and IARU-monitoring
- Jammer Location finding by Public Authorities
- Emission Compliancy Testing
- Direction Finding (DF) Systems
- EW
- Flight Line Testing



SPECIFICATIONS

Parameter	Specifications
Frequency Range:	10 KHz to 30 MHz
Modulations:	AM, FM, LSB, USB, CW, ISB, FSK
Tuning Resolution:	1 Hz
Internal Frequency Accuracy:	0.7 PPM max
RF Input VSWR:	50 ohms, 2.5:1 VSWR max.
HF Preselector:	5 Band Suboctave [MHz]:0.01- 5, 2.0 – 4.0, 4.0 – 8.0, 8.0 – 16.0, 16.0 – 30.0
Noise Figure (@ IF out):	14 dB max
Input IP2:	+ 60 dBm
Input IP3:	+ 30 dBm for signals separated by 50 kHz minimum
Maximum RF Input without Damage:	+20 dBm
Image Rejection:	≥ 90 dB
IF Rejection:	≥ 90 dB
Analog IF Center Frequency:	455 KHz
Analog IF Output Level:	≥ - 20 dBm / 50 ohms
Analog IF Bandwidth:	300 Hz to 16 kHz, 24 available BW's
Low Frequency IF Center Frequency:	≤ 20 kHz
Output Level:	≥ 0 dBm
Output Impedance:	600 ohms
Phase Noise:	
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
Tuning Time:	<10 msec
LO Level at RF Input:	-80 dBm, maximum
Scan Function:	Channel and frequency bandwidth scanning: set start frequency, cut-off frequency, frequency stepsize, stepsize speed, scan signal hold time and scan signal level , and store memory ≥100 channels
Gain Control Modes:	AGC,MGC
AGC Mode:	Attack Time: <120 msec for 100 dB Change Decay Time: Up to 8000 msec for 100 dB Change
Headphone / Speaker Audio Output:	0-1 V p-p Front Panel Control (1/8" Stereo Jack)



BFO:	Adjustable +/- 5 KHz, 1 Hz fine Frequency Step
Line Audio Output:	0 dBm (100 Hz to 5KHz @ -3 dB)
Squelch:	User Control, 55 dB Range
Mute:	User Control
Sensitivity: 10 KHz – 30 MHz (For 10 dB SINAD)	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
BUILT IN TEST (BIT)	Three Phase Lock Alarm, Over Temp.
CONTROL	
Local Manual Control:	N/A
Remote Programming:	Ethernet 10/100 base T
ENVIROMENTALS	
Operating Temp Range:	0° to +50 °C, MIL-STD-810E Method 501.3, 502.3
Non Operating:	-30° to +85°C, MIL-STD-810E Method 501.3, 502.3
Internal Cooling:	Internal Fan
Relative Humidity:	Up to 95%, Non Condensing, MIL-STD-810E Method 507.3
Altitude:	13,000 Feet
EMI:	Designed to Meet MIL-STD-461C, CE03 and RE02
Shock:	MIL-STD-810E, Method 516.4, Procedure VI
Vibration:	MIL-STD-810E, Method 514.4, Procedure I, Caregory 9, Figure 514.4-15
AC Power:	95 to 265 VAC, 47-63 Hz, <100 Watts
MECHANICAL	
Size:	19" 1U (1.75" H X 22" D X 17" W)
Weight:	20 Pounds
REAR PANEL CONNECTORS	
Antenna:	BNC Female
Ethernet 10/100 TCP/IP:	RJ-45
10MHz Ext Ref Input	SMA
Mute	15 pin D Type Female
Speaker Volume Control	Manual
Analog IF 455 kHz	BNC-F
Analog IF 20 kHz	BNC-F
Line Audio Output A	15 pin D Type Female
Line Audio Output B	15 pin D Type Female
FSK Demodulation	9 pin D Type Female
Speaker	N/A
Remote Control	PC / Ethernet / RS-232



FRONT PANEL CONNECTORS

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

OPTIONS

OPT-100	Additional Bandwidth
OPT-101	2 SLOT VME, 6U
OPT-102	Slides for 19" Rack
OPT-103	All TNC-F connectors instead of BNC-F

ABOUT FEI-ELCOM TECH

FEI-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 40GHz.

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