



SIDC-5004

VHF/UHF WIDEBAND TUNER/CONVERTER



FREQUENCY RANGE: 20 to 3000 MHz

- High Dynamic Range Enables the End User to Reject Blocking Signals Often Undetected by Less Sensitive Tuners
- High Dynamic Range Allows the End User to Reject High Powered Adjacent Channel Signals Improving Signal Of Interest Selectivity
- Fast Tuning, Bandwidth Helps Identify Short or Burst Transmissions Such as Those Used as RF Triggers in Remote Detonations and Operational Signaling
- Improve Operational Flexibility While Reducing Maintenance and Repair Costs
- Modular Architecture Provides for Lower Total Cost of Ownership
- Sweep and Scan Capability

FEATURES

RF CHAIN

- Seamless Tuning From 20 to 3000 MHz
- Ultra Wide Dynamic Range – 20 dBm Out of Band, 10 dBm In Band IP3,
- 14 dB Noise Figure Typical
- Fast Tuning Synthesizer Provides Fast Tuning (Contact Factory, ITAR Restricted)
- Low Phase Noise Synthesizer, Less Than 0.5° RMS Integrated Phase Noise
- Less Than -110 dBm Internally Generated Spurious



SPECIFICATIONS AT 25°C

FREQUENCY

Frequency Range:	20 to 3000 MHz
Tuning Resolution:	10 Hz
Frequency Accuracy vs. Temp (Internal Ref):	< +/- 0.1 PPM
Long Term Aging (Internal Ref):	< 1 ppm / 10 Years
External Reference Input:	10 MHz at 0 +/- 3 dBm, Autoswitching
Phase Noise:	0.5° RMS Integrated from 100 Hz to 10 MHz (0.2° RMS with OPT 105)
Offset 100 Hz:	-70 dBc/Hz
Offset 1 KHz:	-85 dBc/Hz
Offset 10 KHz:	-95 dBc/Hz
Offset 100 KHz:	-105 dBc/Hz
Offset 1 MHz:	-125 dBc/Hz
Offset 10 MHz:	-145 dBc/Hz

SCAN AND SWEEP

Sweep Mode :	F1 to F2 at Selected Frequency Step
Scan Mode :	Up to 512 Channels
Tuning Speed:	3 milliseconds for any step size, typical
Dwell Time:	From 3 millisecond to 60 Seconds, or Stop on Detection
Adjustable Threshold:	1 dB Increment from -35 dBm to +5 dBm at IF output

RF SECTION

Input VSWR:	2.5 : 1
RF Preselector:	4 Bands: 20-108, 100-450, 400-1250, 1200-1300
Noise Figure:	15 dB max
RF Input Maximum Level:	20 dBm
RF Gain Variation:	+/- 2 dB vs. RF Input Frequency Range
IF Rejection:	80 dB Minimum
Internally Generated Spurious:	< -110 dBm equivalent RF input

DYNAMIC RANGE

Linear Dynamic Range:	>80 dB (40 MHz IF BW)
SFDR:	72 dB (1MHz IF BW)
Image Rejection:	80 dB
LO Re-Radiation:	< -95 dBm at RF Input



Out of Band Input IP3:	+20 dBm typical, Two tones @-30 dBm, 10 MHz Spacing, placed outside the first IF BW
In Band Input IP3:	+10 dBm Typical, Two tones @-30 dBm, 100 KHz Spacing, placed Inside the Analog IF Output
Output P1 dB:	+ 15 dBm
IP2:	+40 dBm typical

ANALOG IF OUTPUT

Center Frequency:	30 MHz
Bandwidth:	10 MHz
RF to IF Gain:	0 - 30 dB, 1 dB steps

BUILT IN TEST (BIT) CONTROL

	Power supply voltages, three phases lock alarm, Over Temp
Local Manual Control:	All Functions, via Graphical Display Keyboard and Rotary Knob
Remote Programming:	Ethernet 10/100 base-T , RS422/ RS485 and RS232 USB Remote

ENVIRONMENTAL

Operating Temp Range:	0° to +50°C
Non Operating:	-30° to +85°C
Relative Humidity:	Up to 95%, non condensing
Altitude:	10,000 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, Category 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

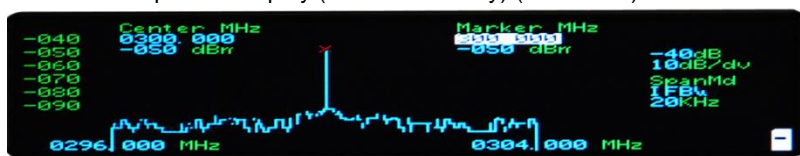
Antenna Input:	SMA F
RFLO Slave Input / Output:	SMA F (OPTIONAL)
RFLO Master Output:	SMA F (OPTIONAL)
External REF IN, Out:	BNC – Female
Ethernet:	RJ 45
Remote Interface:	DEM – 9S
Summary Alarm:	DE – 9D



OPTIONS

- OPT-117 PHASE COHERENT for DF APPLICATIONS
 Each converter can be user configured as either a MASTER or a SLAVE through software settings. The MASTER converter will provide one LO output to one SLAVE converter. Each SLAVE converter will accept external LO and provide LO output for next SLAVE. A maximum of ten converters can be configured in succession. In SLAVE Mode, internal RFLO will be disabled. User must interconnect all units with RF cables.
- OPT-105 Low Phase Noise (0.2 Degrees RMS)
- OPT-112 Operating Temp Range (-20°C to +60°C)
- OPT-126 * Aircraft Power Supply:115 VAC, +/-TBD%, 400 Hz, 100 Watts
- OPT-2CHDC Dual Channel Converter (2U Version Only)

OPT-SD Spectral Display (2U Version Only) (see below)



* Contact factory

Specifications are subject to change without notice

Ordering Matrix

Frequency Range	IF Output	IF Bandwidth	Unit Part Number
20 – 3000 MHz	30 MHz	10 MHz	SIDC-5004
20 – 3000 MHz	160 MHz	10 MHz	SIDC-5005
20 – 3000 MHz	10.7 MHz	1.0 MHz	SIDC-5007
20 – 3000 MHz	70 MHz	20 MHz	SIDC-5009

(40 MHz IF BW Available Contact Factory)



FEI-Elcom Tech

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 40GHz.

FOR ADDITIONAL INFORMATION PLEASE CONTACT

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