



SIDC-5005

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

DYNAMIC RANGE

SFDR:	70 dB @ 0 dBm IF Output Level
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
Reciprocal Mixing:	Input signal at rated sensitivity and 20 KHz IF Bandwidth. An out of band signal 350 KHz offset and 70 dB higher in level will not degrade the signal-to-noise by more than 5 dB

ANALOG IF OUTPUT

Center Frequency:	160 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:	DE-9F
Summary Alarm:	DE-9M



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)



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.

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