

## **SIDC 6000 Series**

**MICROWAVE WIDEBAND DOWNCONVERTER / TUNER UP TO 26.5 GHz**



**WIDE FREQUENCY RANGE:  
0.5 - 26.5 GHz**

### FEATURES

- High Dynamic Range
- Fast Switching Synthesizer with 10 Hz Tuning Resolution
- Excellent Phase Noise Performance: < 0.5° RMS
- 500 MHz Bandwidth 1.2 GHz CF L band output
- 70/140/160 MHz CF Selectable IF Output
- Sweep and Scan up to 500 MHz per Millisecond
- Manual and Automatic Gain Control with Adjustable Threshold
- Advanced Front Panel Graphical Display
- Ethernet 10/100 BaseT, RS 232, RS422
- 1 U 19" Rack

### APPLICATION

- ELINT
- Synthetic Instrumentation
- Radio Monitoring of Broadcast Stations and IARU-monitoring
- Emission Compliancy Testing
- Direction Finding (DF) Systems
- SATCOM
- Radar Warning Receivers (RWR)

## SPECIFICATIONS AT 25°C

### FREQUENCY

Frequency Range: SIDC 6000:	0.5 – 26.5 GHz
Tuning Resolution:	10 Hz
Synthesizer Tuning Speed:	1 millisecond (For faster tuning speed contact factory)
Frequency Accuracy vs. Temperature (Internal Ref):	< +/- 0.1 PPM
Long Term Aging (Internal Ref):	< 1 PPM per year.
External Reference Input:	10 MHz at 0 +/- 3 dBm, auto locking
Converter Phase Noise (Typ.) @ 10 GHz:	0.5° RMS Integrated from 100 Hz to 10 MHz
Offset 100 Hz:	-68 dBc/Hz
Offset 1 KHz:	-90 dBc/Hz
Offset 10 KHz:	-96 dBc/Hz
Offset 100 KHz:	-104 dBc/Hz
Offset 1 MHz:	-115 dBc/Hz
Offset 10 MHz:	-140 dBc/Hz

### SCAN AND SWEEP

Sweep Mode:	F1 to F2 at Selected Frequency Step
Step Time:	From 1 millisecond to 60 Seconds, or Stop on Detection
Sweep Rate:	500 MHz in 1 millisecond
Adjustable Threshold Detection:	1 dB Increment from -35 dBm to +5 dBm at IF Output

### RF SECTION

Input VSWR:	2.5 : 1
Noise Figure:	15 dB (Max.) from 1-26.5 GHz , 17 dB (Max.) from 0.5-1 GHz
RF Input Maximum Level:	20 dBm
Conversion Sense:	Inverting / Non Inverting Selectable for IF Output
RF Gain Variation:	+/- 1.5 dB vs. RF Input Frequency Range

### DYNAMIC RANGE

Spurious Free Dynamic Range:	64 dB with 1 MHz BW from 1-26.5 GHz
Image Rejection:	>70 dB
LO Reradiation:	< -95 dBm at RF Input
Input IP3:	-5 dBm @ 20 dB Gain
Input 1 dB Compression:	-15 dBm

**WIDEBAND L BAND OUTPUT**

Center Frequency:	1.2 GHz ( 1 GHz OPT-109)
Bandwidth ( 3dB):	500 MHz
RF to IF Gain:	42 dB
Gain Flatness Over IF BW:	+/- 1.2 dB (Typ.), +/-1.5 dB (Max.)
Group Delay Variation:	3 nsec max over 80% of 3 dB BW
Manual Gain Control:	Programmed 42 dB, 1 dB Resolution
L Band Signal Monitor:	-20 dBc (Typ.)
Impedance:	50 ohms
VSWR:	2:1 Max

**IF OUTPUT**

Center Frequency :	70 MHz
Bandwidth (3 dB):	10, 20, 30, 40 MHz Selectable
Gain Flatness:	+/- 0.4 dB (Typ.), +/- 0.6 dB (Max.) over 80% of selected BW
Center Frequency:	140/160 MHz
Bandwidth( 3 dB):	80, 40 MHz Minimum
Gain Flatness:	+/- 0.6 dB (Typ.), +/- 0.8dB (Max.) over 80% of selected BW
RF to IF Gain:	42 dB
Manual Gain Control (MGC):	Programmed 42 dB , 1 dB Resolution
Automatic Gain Control (AGC):	42 dB Range, Fast Attack, Programmed Decay
Fast Attack:	2 msec for 42 dB Change
Decay Time:	Programmed from 5 msec to 1 second
IF Output Level:	Programmed from +5 dBm to -20 dBm, 1 dB Step
IF Output Impedance:	50 ohm
VSWR:	2.0:1 Max
IF Signal Monitor:	-20 dBc (Typ.)

**BUILT IN TEST (BIT)**

Power Supply Voltages, Three Phase Lock Alarm, Over Temp.

**CONTROL**

Local Manual Control:	All Functions, via Graphical Display Keyboard and Rotary Knob
Remote Programming:	Ethernet 10/100 base T , RS 422/ RS 485 and RS232

**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 MIL- STD-810E, method 514.4 Procedure I, Category 9, Figure 514.4-15
Vibration:	
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**

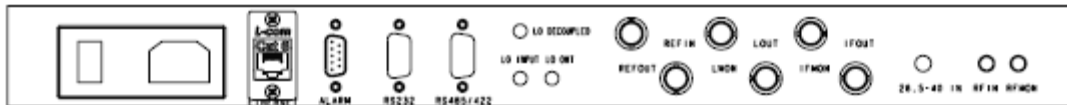
0.5 to 26.5 GHz RF input: SMA-F Connector  
 IF Output, IF Monitor: BNC F  
 L Output, L Monitor: BNC F  
 External REF IN, Out: BNC F  
 Ethernet: RJ 45  
 Remote Interface: DEM – 9S  
 Summary Alarm: DE – 9D

**OPTIONS**

OPT-109 1 GHz L-band Output  
 OPT-112 Operating Temp Range (-20°C to +60°C)  
 OPT-117 Phase Coherent for DF Application  
 Each converter could be configured as master LO or slave (using external LO) by hardware jumper and software settings. The master receiver/converter will provide LO output to slave receiver/converter. Slave receiver /converter will accept external LO and provide LO output for next slave. In slave mode, internal RFLO will be disabled.

OPT-126 Aircraft Power Supply: 115VAC, +/-TBD%, 400Hz, 100 Watts  
 OPT-138 Inverting/Non Inverting for L Band

\*Specifications are subject to change without notice.



**SIDC-6000 - REAR PANEL**

**Ordering Matrix**

Frequency Range	L-Band Output	Unit Part Number
0.5 – 18 GHz	1.2 GHz	SIDC-6002
0.5 – 26.5 GHz	1.2 GHz	SIDC-6003
0.5 – 26.5 GHz	1.0 GHz	SIDC-6004
0.5 – 18 GHz	1.0 GHz	SIDC-6005

## **ABOUT ELCOM TECHNOLOGIES**

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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