FEI-Elcom Tech

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 Alphanumeric 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)

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SPECIFICATIONS AT 25ºC

FREQUENCY

Frequency Range:	0.5 – 26.5 GHz
Tuning Resolution:	10 Hz
Synthesizer Tuning Speed:	1 millisecond (For faster tuning speed contact factory)
Frequency Accuracy vs. Temp (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
Sweep Rate:	500 MHz in 1 millisecond
Dwell Time:	From 1 millisecond to 60 Seconds, or Stop on Detection
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):	40, 30, 20, 10, 5, 1 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
Vibration:	MIL-STD-810E, method 514.4, Procedure I, Cat 9, Fig 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

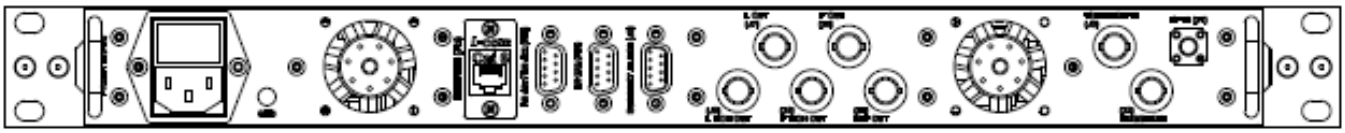
REAR PANEL CONNECTORS

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 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-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
0.5 – 26.5 GHz	1.0 GHz	SIDC-6007 w/ strobe

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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