



## 6501 Series UP/Down Converters

**6501-UCDC Dual Channel Up & Dual Channel Downconverter**

**6501-DC Four Channel Downconverter**

**Form Factor VPX 2 SLOT 6U, or 19" Rack**

**Wide Frequency Range: 6 to 18 GHz, 1 GHz BW Option: 2-18 GHz**

### APPLICATIONS

- Electronic Warfare (ECM)
- Monopulse RADAR Receivers
- Radar Warning Receiver (RWR)
- Real Time Spectrum Analysis (RTSA)

### FEATURES

- Wide Frequency Tuning Range: 6 to 18 GHz (other bands, contact factory)
- 1 GHz BW L-Band
- Ultra Fast Tuning
- Two/Four Phase Matched Tuners in 6U VPX, 2 Slot Wide or 19" Rackmount
- Two Up Converter/ Two Down Converter in 6U VPX, 2 Slot Wide or 19" Rackmount
- Option for Two independent Synthesizers (LO's)
- Phase Coherent Switching





## SPECIFICATIONS AT 25°C

### DOWNCONVERTER/UPCONVERTER SPECIFICATIONS

#### **FREQUENCY**

Input Tuning Range:	6 – 18 GHz Option 2-18 GHz
Synthesizer Tuning Speed:	1 microsecond (<1 microsecond contact factory)
Tuning Step Size:	10 MHz typical (1 Hz Option available)
Integrated Phase Noise	< 0.5 degrees RMS

#### **RF SECTION**

Downconverter NF	15 dB, @ max gain
RF to IF Gain:	21 dB $\pm$ 1 dB
RF Attenuation:	0 - 26 dB, 2 dB step
IF Attenuation:	0 - 30 dB, 1 dB step

#### **DYNAMIC RANGE**

Image Rejection:	>80 dB
IF Rejection:	>80 dB
LO Leakage:	-80 dBm
Internally Generated Spurious:	-60 dBm max
Input IP3:	+5 dBm
BIT:	-30 dBm Min
Max Input Level (w/o damage)	+15 dBm

#### **WIDEBAND L BAND OUTPUT**

Center Frequency:	1.875 GHz (contact factory for other options)
Bandwidth ( 3dB):	1 GHz
Passband Flatness Over IF BW:	+/- 1 dB Typical, $\pm$ 1.5 dB Max.
Group Delay:	3 nsec over 80% of BW
Anti-Aliasing Filter Rejection:	>70 dBc @ $\pm$ 250 MHz from Band Edges (1 GHz IBW)

\*Specifications are subject to change without notice.



## COMMUNICATIONS

VPX or USB-C Highspeed SPI w strobe

## ENVIRONMENTAL

Operating Temperature Range: 0 to +50° C Option (-20 to +70° C)

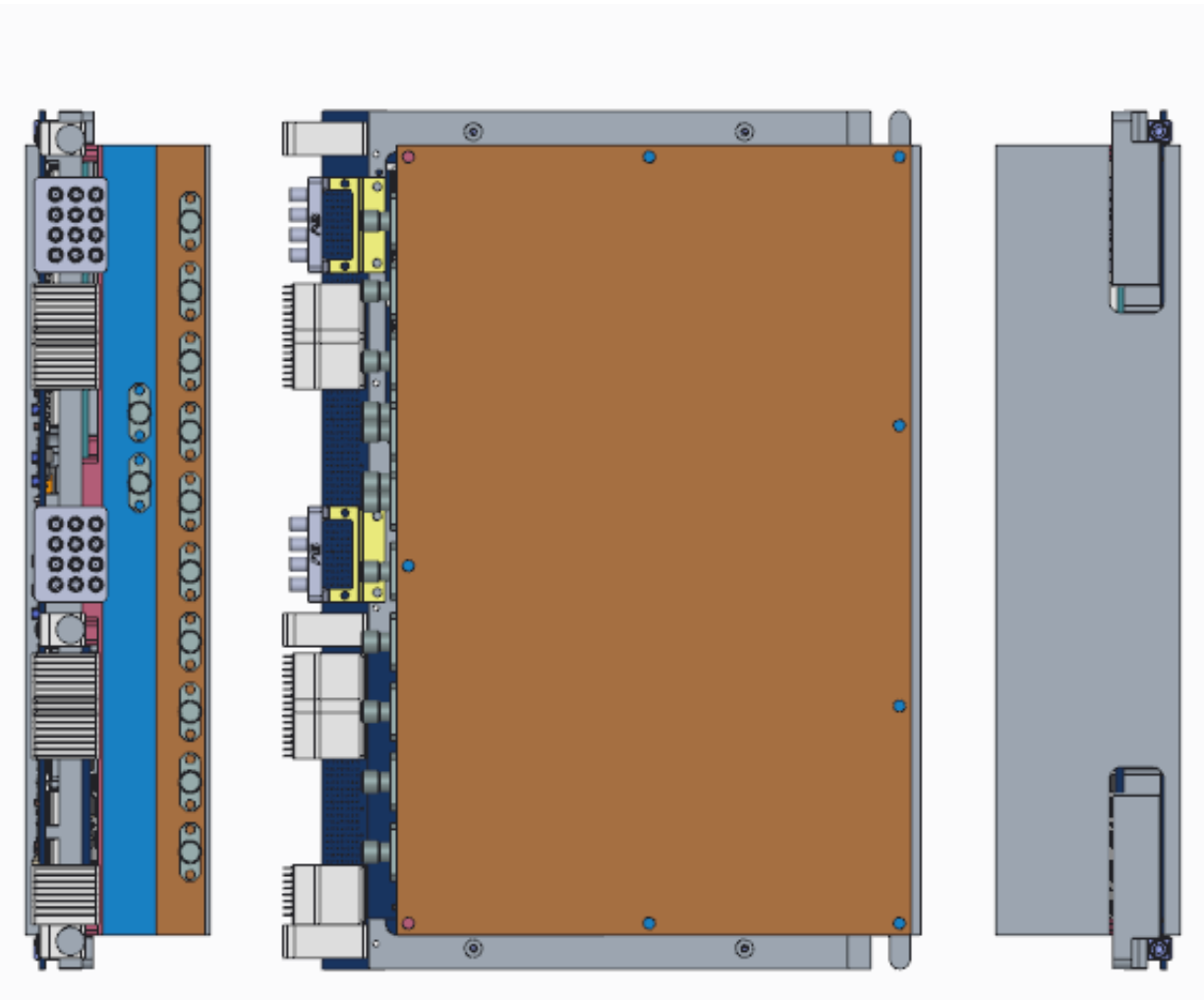
Power Consumption: 45 Watts (typ) Varies with options

## MECHANICAL

Size: VPX 6U, two slot wide or 19" rackmount

Weight: 3.5 Pounds VPX varies with options

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## Ordering Matrix

Option	Frequency Range	Comms	Channel Types	Unit Part Number
101	6 – 18 GHz	VPX	2 DC & 2 UC	VPXST-6501-UCDC
102	6 – 18 GHz	VPX	4 DC	VPXST-6501-DC
103	2 – 18 GHz	VPX	2 DC & 2 UC	VPXST-2501-UCDC
104	2 – 18 GHz	VPX	4 DC	VPXST-2501-DC
105	6 – 18 GHz	USB-C	2 DC & 2 UC	USBST-6501-UCDC
106	6 – 18 GHz	USB-C	4 DC	USBST-6501-DC
107	2 – 18 GHz	USB-C	2 DC & 2 UC	USBST-2501-UCDC
108	2 – 18 GHz	USB-C	4 DC	USBST-2501-DC
109	12 – 22 GHz	VPX	Dual Syn	VPXST-1222-SYN
110	12 – 22 GHz	USB-C	Dual Syn	USBST-1222-SYN

### Typical Phase Noise @ 18 GHz

1 KHz:	-114 dBc/Hz
10 KHz:	-123 dBc/Hz
100 KHz:	-127 dBc/Hz
1 MHz:	-140 dBc/Hz
10 MHz:	-150 dBc/Hz
100 MHz:	-155 dBc/Hz

### 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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