

Dual C-Band Block Frequency Up Converters Phase Track Class



Dual C-Band converter with phase tracking and matching FCB200 - Phase Track Class

Satellite Tracking and Navigation

Features

- Dual L to C block Up converters in single 1RU
- Coherent Phase tracking between each channel over time
- Gain tracking between channels
- Phase matching between channels
- Low Phase Noise
- Low Spurious levels
- Independent Input and Output attenuators
- Internal/External 10 MHz with Autosensing
- Front panel control (local)
- Input / Output Monitoring ports for each channel
- Full remote control (remote) via Ethernet with SNMP V1

Overview

The Advantech PT- series of converters are designed for specific applications that require dual channel, coherent signal processing as applicable to TT&C and LEO Satellite Tracking and Navigation (STAN).

Each 1RU shelf includes two independent Up (or Down) Block converters that are coherent in phase and phase matched.

These new frequency converters use the latest technology in RF conversion, with outstanding performance in spectrum purity.

Independent Input and Output attenuators allow maximum flexibility in adjusting levels on each channel, as the application requires.

Sample ports are available for each channel, on both Input and Output ports.

The flexible and comprehensive monitor and control features on the **PT**-converter ensure that it will fit into any network management system architecture. The user-friendly front panel or the Ethernet interface will provide full set-up and fault monitoring facilities.

The PLL oscillator used in the converter is either locked to a highly stable internal 10 MHz reference or if the external reference option is fitted and the proper level of signal is present, the PLL will automatically lock to the external reference.

Operating Bands

Up-Converters					
Model Number	Туре	Input Frequency	Output Frequency		
ARUD-LC-PT	dual	1.05-1.75 GHz	5.3-6.0 GHz		

Application

The PT-series of C-Band Up converters is particularly suited for use in applications that require phase coherent signal processing, TT&C and new LEO Satellite Tracking and Navigation.

The PT-series of converters provides an industry leading MTBF of over 120,000 hours.

The converters are MIL STD-461F compliant.

Options

• Rack Mount set of slides Note: Consult factory for detailed configuration



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Technical Specifications					
Up-Converter					
Input Frequency range	1.05-1.75 GHz F Input				
Input Connector	SMA (female) 50 Ohm				
Return loss	18 dB				
RF Output					
Output power (P1dB)	+13 dBm				
Output Frequency range	5.3-6.0 GHz				
IMD3 (two tone)	-50 dBc max @ 0 dBm each carrier				
Output connector	SMA (female)				
Connector Impedance	50 Ω				
Return loss	18 dB				
Transfer Characteristics					
Conversion Gain	30 +/- 3 dB @ max gain setting				
Gain adjustment Output and Input	30 dB at Output ; 15 dB at Input				
Attenuator step size	0.2 dB				
Gain flatness	±1.0 dB p-p over any 500 MHz				
	0.5 dB p-p over 40 MHz				
Gain stability	±0.25 dB max. /24 hours				
	±1 dB over temp. range				
Channel to Channel gain tracking	±0.5 dB at constant temperature				
	50 GB				
Spurious	<-bs dBc signal related @ dBm <-75 dBm signal independent				
Image rejection	60 dB				
LO Leakage	< -80 dBm				
Noise Figure	16 dB				
Channel to Channel Phase Tracking	+/- 2 degrees/day at constant temperature, same attenuation				
Channel to Channel Phase matching	+/-10 degrees				
Phase noise	49 dBc/Hz @ 10Hz -73 dBc/Hz @ 100Hz -84 dBc/Hz @ 1kHz -94 dBc/Hz @ 10kHz -104 dBc/Hz @ 100KHz -119 dBc/Hz @ 1 MHz				
Reference		Mechanical			
External Reference input	10 MHz, 7 +/- 3 dBm, high purity		Width 19" (482.6 mm)		
Internal reference stability	\pm 1 x 10 ⁻⁷ over 0°C to +50°C	Dimensions	Height 1U 1.75" (44.5 mm)		
Aging	± 5 x 10 ⁻⁹ / day ± 5 x 10 ⁻⁸ / year		Depth 22" (558.8 mm)		
Environmental		Power Supply			
Operational	0°C to +50°Cstandard	Voltage	83 – 264 VAC (43 – 67 Hz)		
Storage	-55°C to +85°C	Power	45W (typical)		
Humidity	95% Non-condensing	Connector	IEC 603320 10A		
Altitude	3,000m AMSL				
		Monitor and Control			
		Input Sample Port	SMA (female)		
		Output Sample Port	SMA (female)		
		Ethernet	RJ45 F		

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