

L-Band – 720MHz Synthesized Frequency Converter

Single Up - Converter ARUN- 720L
Single Down – Converter ARDN-L720



Features

- 720 +/- 200 MHz to 800-1550 MHz Up-Converter or Down-Converter
- Cost effective solution
- Exceeds by 15 dB IESS 308/309 phase noise requirements
- High linearity
- Front panel control (local)
- Full remote control (remote)

Overview

The ARUN-720L and ARDN-L720 Up-Converters and Down-Converters from Advantech Wireless Technologies, are designed to translate the 720 +/- 200 MHz band to 800-1550 MHz, with 100 KHz step size.

This frequency change provides a low cost alternative for using off-the-shelf, satellite based, Block-Up Converters or Block-Down Converters that usually include an L-band input or output within 800-1550 MHz.

The purpose is to reduce the high level of customization and the overall cost, for the new generation of MEO and LEO constellations of satellites, in particular those used for earth imagery and weather forecast.

These advanced frequency converters provide a bridge between high data rate 720MHz modems and conventional off-the-shelf satellite X-Band hardware.

Operating Bands

Up-Converter		
Model Number	RF Output	IF Frequency
ARUN-720L	800-1550MHz	720 MHz ± 200 MHz

Down-Converter		
Model Number	RF Output	IF Frequency
ARDN-L720	720 MHz ± 200 MHz	800-1550MHz

Accessories

- Ethernet M&C with SNMP or Web page
- Rack-Mount set of slides

Applications

- High data links over satellite
- LEO or MEO constellations
- Earth imagery
- Weather forecast

720 +/-200 MHz to 800 -1550 MHz Up or Down Converters

Technical Specifications			
Up-Converter	Model ARUN- 720L	Down-Converter	Model ARDN-L720
IF Input		RF Input	
Frequency range	720 MHz ± 200 MHz	Frequency range	800-1550MHz
Impedance	50 Ω	Impedance	50 Ω
Step size	100 KHz	Step size	100 KHz
Input Connector	BNC –Female	Input Connector	SMA – Female
Return loss	18 dB	Return loss	18 dB
RF Output		IF Output	
Output power (P1dB)	15 dBm	Frequency range	720 MHz ± 200 MHz
Frequency range	800-1550MHz	Output level (P1dB)	10 dBm
IMD3 (two tone)	-40 dBc max @ 0 dBm output	Output Connector	BNC – Female
Output connector	SMA (female)	Connector Impedance	50 Ω
Connector Impedance	50 Ω	Return Loss	18 dB
Return loss	18 dB		
Transfer Characteristics		Transfer Characteristics	
Conversion Gain	30 dB ± 1dB@ max gain setting	Conversion Gain	30 dB ± 1dB@ max gain setting
Gain adjustment	30 dB (1 dB step size)	Gain adjustment	30 dB (1 dB step size)
Gain flatness	2 dB p-p max. 400 MHz	Gain flatness	2 dB p-p max. 400 MHz
Gain stability	±0.25 dB max. /24 hours ±1 dB over temp. range	Gain stability	±0.25 dB max. / 24 hours ±1 dB over temp. range
Spurious	-60 dBc carrier related @ 0dBm < -70 dBm non-carrier related	Spurious	-60 dBc @ 0 dBm output
Phase noise	Meets or Exceeds by 15 dB IESS 308/309	Phase noise	Meets or Exceeds by 15 dB IESS 308/309
VSWR	Input: 1.30:1 (50 ohms) Output: 1.30:1 (50 ohms) Reference: 1.50:1 (50 ohms)	Noise Figure	16dB at 0dB attenuation
		VSWR	Input: 1.30:1 (50 ohms) Output: 1.30:1 (50 ohms) Reference: 1.50:1 (50 ohms)
Reference			
External Reference	10 MHz Autosensing		
Environmental		Power Supply	
Operational	0°C to +50°C	Voltage	90 – 265 VAC (47 – 63 Hz)
Storage	-50°C to +70°C	Power	40W Maximum
Humidity	Up to 95%, non-condensing	Connector	IEC 60320 C13
Altitude	Up to 10,000 Feet AMSL		

Ref.: PB-ARUN-L720-18229

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