

L500 series Block DownConverters









Standard Grade DownConverter Products

- L510** C-Band (3.40-4.20GHz) to L-Band (1750-950MHz), Inverted spectrum
- L524** Ku-Band (10.70-11.70GHz) to L-Band (950-1950MHz)
- L520** Ku-Band (10.95-11.70GHz) to L-Band (950-1700MHz)
- L523** Ku-Band (11.45 to 11.95GHz) to L-Band (950-1450MHz)
- L521** Ku-Band (11.70-12.20GHz) to L-Band (950-1450MHz)
- L522** Ku-Band (12.25-12.75GHz) to L-Band (950-1450MHz)
- L532** Ku-Band (10.95-12.75GHz) 2 stage to L-Band (950-2000MHz max.)
- L533** Ku-Band (10.95-12.75GHz) 3 stage to L-Band (950-1700MHz max.)
- L533-2** Ku-Band (10.95-12.75GHz) HI+LO 2 stage to L-Band (950-1700MHz max.)

The 19 inch 1U rack mounted **L500 series** of Block Frequency DownConverter units from Peak Communications are designed to take the incoming SHF signal and produce an output at L-Band that is suitable for further conversion typically by a **P7000** converter.

The **L500 series** of units are mains powered and are constructed of robust components to give an adequate performance for most satellite communication purposes and where ultimate stability, ripple and phase noise performance are not so critical.

Peak Features

-  Dual Band units **1U HIGH** available
-  Good stability and phase noise
-  Full Alarm monitoring
-  Fully compatible with **RCU100** and **RCU200** series redundancy controllers
-  External Reference option available, with automatic internal reference back-up
-  L-Band monitor points available



L500 Series - Typical Specification

SHF Input

Frequency	3.40-4.20GHz (L510) 10.70-11.70GHz (L524) 10.95-11.70GHz (L520) 11.45-11.95GHz (L523) 11.70-12.20GHz (L521) 12.25-12.75GHz (L522) 10.95-12.75GHz (L532) 10.95-12.75GHz (L533) 10.95-11.70/12.25-12.75 (L533-2)
Connector	50Ω, SMA (Option 1a; N-Type)
Return loss	>15dB

L-Band Output

Frequency	950 up to 2000MHz, depending on model
Spectrum Sense	**Non inverted apart from L510
Connector	50Ω, SMA (Option 1b; N-Type) (Option 3; 75Ω, BNC)
Return loss	>12dB
1dB GCP	+7dBm

Transfer Characteristics

Conversion gain	27dB ±1dB at band centre, (L510 is 20dB ±1dB) (Option 4; 37dB ±1dB (30dB for L510))
Gain stability	±1dB from 0 to 40°C
Gain flatness	±1.5dB full band ±0.5dB across any 40MHz in band.
LO Frequency	depends on model

RF Performance

LO Phase noise	-63dBc/Hz at 100Hz -73dBc/Hz at 1kHz -80dBc/Hz at 10kHz -90dBc/Hz at 100kHz -100dBc/Hz at 1MHz
Harmonics	Better than -50dBc
Spurious	<-60dBm (in band non-carrier related) <-60dBc (in band carrier related)
3rd Order Intercept	>+17dBm
LO leakage	-50dBm (always out of band)

L-Band Monitor (Option 2)

Connection	Option 2a; 50Ω, SMA on rear panel
Connection	Option 2b; 50Ω, SMA on front panel
Level	-20dBc ±3dB

Rear panel View



Standard Internal Reference

Stability (1sec)	<1 x 10 ⁻¹⁰ per second
Temp. Stability	<±5 x 10 ⁻⁸ (0 to +50°C)
Ageing (per day)	<±5 x 10 ⁻⁹

External Reference Input (Option 1)

Frequency	5/10MHz (factory settable)
Connector	50Ω, BNC
Level	0dBm ±3dB, auto. locks to internal if absent

Mechanical

Width	19" standard rack mount
Height	1U (1.75")
Depth	~400mm (15.7"), plus connectors
Construction	Aluminium chassis
Weight	4.5kgs (10lbs)

Control System Interface

Alarms	LO lock fail PSU fail
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Environmental

Operating temp.	0°C to +50°C
EMC	EN 55022 part B & EN 50082-1
Safety	EN 60950

Power Supply

Voltage	115/230VAC±10%, Selectable.
Frequency	50/60Hz
Power	50Watts max.

Options

- 1) 5/10MHz external reference input (BNC)
- 2a) -20dBc L-band monitor on rear panel (SMA)
- 2b) -20dBc L-band monitor on front panel (SMA)
- 3) 75Ω interface at L-band (additional 6dB loss)
- 4) Extra 10db increase in gain, to 37dB ±1dB (30dB for L510)
- 5) Fibre optic L-band output



Peak Communications reserves the right to alter the specifications of this equipment without prior notice. L500series-230205.

Peak Communications Ltd, 22 West Park Street, Brighouse, HD6 1DU, England.

Tel; +44 (0)1484 714200 Sales; +44 (0)1484 714229 Fax; +44(0)1484 723666 Email; sales@peakcom.co.uk Web; www.peakcom.co.uk