L500 series

Block Down Converters

Medium Grade Down Converter Products;

L510 C-Band (3.40-4.20GHz) to L-Band (1750-950MHz, inverted spectrum)
L520 Ku-Band (10.95-11.70GHz) to L-Band (950-1700MHz)
L521 Ku-Band (11.70-12.20GHz) to L-Band (950-1450MHz)
L522 Ku-Band (12.25-12.75GHz) to L-Band (950-1450MHz)
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)
L534 C-Band (3.40-4.20GHz, inverted spectrum) & full Ku-Band (10.95-12.75GHz) to L-Band (950-1750MHz max)

The 19-inch 1U rack mounted **L500 series** of block frequency down converter units from Peak Communications are designed to take the incoming SHF signal and produce an output at L-Band 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.

These multi-range converters are offered as standard with internal range switching and a single input and output connection. Range selection is performed manually from the front panel.

Peak Features

- Dual Band units in 1RU height available
- High stability internal reference
- 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 ports available

L500 Series - Typical Specification

SHF Input

Frequency

L510	3.40-4.20GHz**
L520	10.95-11.70GHz
L521	11.70-12.20GHz
L522	12.25-12.75GHz
L533	10.95-12.75GHz
L533-2	10.95-11.70 and 12.25-12.75
L534	C-Band 3.40-4.20GHz** and full Ku-Band 10.95-12.75GHz

** C-Band ranges give inverted output spectrum & lower Gain

Connector	SMA (f), 50Ω
Option 1a;	N-Type (f), 50Ω
Return loss	>15dB

L-Band Output

Frequency	950 up to 2000MHz, model dependent
Spectrum sense	Non-inverting unless highlighted
Connector	SMA (f), 50Ω
Option 1b;	N-Type (f), 50Ω
Option 3;	BNC (f), 75Ω
Return loss	>12dB
1dB GCP	+5dBm (Option 4 gives -13dBm)

Transfer Characteristics

Conversion gain	50dB ±1dB at band centre
	** C-Band ranges give 40dB ±1dB
Option 4;	40dB ±1dB (C-Band ranges; 30dB ±1dB)
Gain stability	±1dB from 0 to 40°C
Gain flatness	±2dB full band
	±0.75dB across any 40MHz in band
LO frequency	depends on model

RF Performance

LO phase noise	-63dBc/Hz at 100Hz
	-75dBc/Hz at 1kHz
	-85dBc/Hz at 10kHz
	-95dBc/Hz at 100kHz
	-100dBc/Hz at >1MHz
Harmonics	Better than -50dBc
Spurious	<-60dBm (in band non-carrier related)
	<-50dBc (in band carrier related)
3rd order intercept	>+17dBm
LO leakage	-50dBm (always out of band)
Noise figure	10dB (Option 4 gives 20dB)

L-Band Monitor (Option 2)

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

Internal Reference Stability

Allan deviation	<5 x 10^{-12} over 1s
Ageing	<3 x 10^{-10} per day, <3 x 10^{-8} per year
Temp stability	<2 x 10^{-9} over -10 to 50^{0}C

External Reference Input (Option 6) with automatic detection

Frequency	10MHz (5MHz factory settable)
Level	0dBm ±3dB, auto-locking
Connector	BNC (f), 50Ω
Locking delay	<2 minutes to stabilise from cold

Mechanical

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

Control System Interface

Alarms	PSU fail

Environmental

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

Power Supply

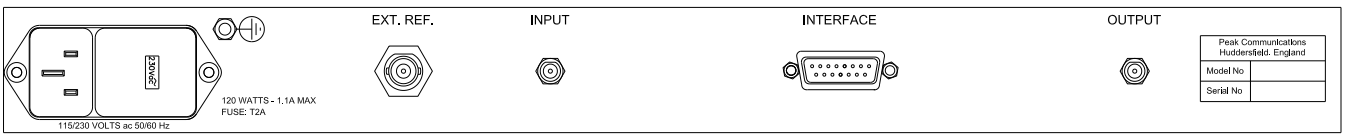
Voltage	90-264VAC
Frequency	47-63Hz
Power	50Watts max.

Options

1a) N-Type (f) SHF interface connection
1b) N-Type (f) L-Band interface connection
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) Lower gain at 40dB ±1dB (L510; 30dB ±1dB)
5) Fibre optic L-band output
6) 5/10MHz external reference input (BNC)

Notes; the addition of options can modify the typical specification, for details please consult the factory.

Rear panel View



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