

P7701i

L-Band to UHF, Down Converter



The 19-inch 1U rack mounted **P7701i** block down converter unit from Peak Communications is designed to take typically the output of a **P7002** Up Converter or modem at L-band and provide the frequency conversion to UHF in the uplink chain.

The **P7701i** unit is designed to meet the phase noise, spurious level and frequency stability requirements of Intelsat IBS/Eutelsat SMS specifications. The excellent group delay response makes the product suitable for high order modulation schemes and both very high & low data rates associated with digital TV signals. The **P7701i** unit is mains powered and is constructed of high-grade components to give the ultimate in performance. These components include a high-grade crystal oscillator to give the highest performance of stability and phase noise, a well proven externally phase locked DRO, a high-grade waveguide band-pass filter to give minimum insertion loss and flatness across the band, a high-performance low noise amplifier, high grade mixers and isolators between each section to ensure correct matching.

For redundancy the **P7701i** uses a simple CANBUS® interface and has an integral redundancy controller for 1+1 & 2+1 operation (for use with external switch units), for N+1 system a separate stand-alone control and switch unit is provided (**RCU1000 series**).

Note; separate stand-alone control and switching units can also be provided for 1+1 & 2+1 systems, please consult the factory.

The unit has a highly stable internal reference source and will automatically detect and lock to an external 10MHz signal, when applied.



P7701i – Typical Specification

L-band Input

Frequency	1200 ±250MHz
Connection	N-type (f), 50Ω
Level	-15dBm max
Return loss	>11dB

UHF Output

Frequency	750 ±250MHz
Connection	BNC (f), 50Ω
Level (P1dB GCP)	≥0dBm
Return loss	>11dB

Transfer Characteristics

Conversion gain	+30dB ±1dB
Attenuation	0 to 30dB, stepped 0.1dB
Gain stability	±1dB from -10 to +50°C ±0.1dB per week (constant temp.)
Gain flatness	±1.3dB full band ±0.5dB across any 36MHz in band

RF Performance

Phase noise	-50dBc/Hz at 10Hz -80dBc/Hz at 100Hz -90dBc/Hz at 1kHz -97dBc/Hz at 10kHz -100dBc/Hz at 100kHz -110dBc/Hz at 1MHz
Spurious	<-45dBm (in band non-carrier related) <-65dBc (in band carrier related)
Group delay	Linear 0.025ns/MHz Ripple 1ns p-p Parabolic 0.015ns/MHz ²
Noise figure	<25dB nominal at maximum gain

External Reference Input (with automatic detection & locking)

Frequency	Factory selectable 5 or 10MHz
Connector	BNC (f), 50Ω
Level	0dBm ±5dB
Phase noise	to be better than 50dBc/Hz of output phase noise

Internal Back-up Reference

Frequency	10MHz
Adjustment	±0.45ppm, stepped 0.01ppm

Standard Stability

Allan deviation	<5 x 10 ⁻¹² over 1s
Ageing	<±3 x 10 ⁻¹⁰ /day, <±3 x 10 ⁻⁹ /month, <±3 x 10 ⁻⁸ /year
Temp stability	<±2 x 10 ⁻⁹ over operating range

High stability (Option 8)

Allan deviation	<2 x 10 ⁻¹² over 1s
Ageing	<±2 x 10 ⁻¹⁰ /day, <±2 x 10 ⁻⁹ /month, <±2 x 10 ⁻⁸ /year
Temp stability	<±1.5 x 10 ⁻⁹ over operating range

Mechanical

Width	19", standard rack mountable
Height	1U (1.75")
Depth	534mm (21"), plus connectors
Construction	Stainless steel chassis
Weight	Approx. 9kgs (20lbs)

Environmental

Operating temp	-10°C to +50°C
EMC	ETSI EN 301 489-1: V2.2.1 & ETSI EN 300 673: V1.2.1
Safety	IEC/EN 62368-1:2014 (second edition)

Power supply

Voltage	90-264VAC
Frequency	47-63Hz
Power	60 Watts
Option 17;	Redundant PSU; provides a 1+1 redundant PSU configuration with separate prime power inputs

Control System

Remote control	RS232/ 485 port Option 9; Ethernet; embedded web server & SNMP network management support
Redundancy	CANBUS [®] interface for N+1 system In-built 1+1 & 2+1 controller
Alarms	LO lock failure PSU failure Summary failure relay (form C)

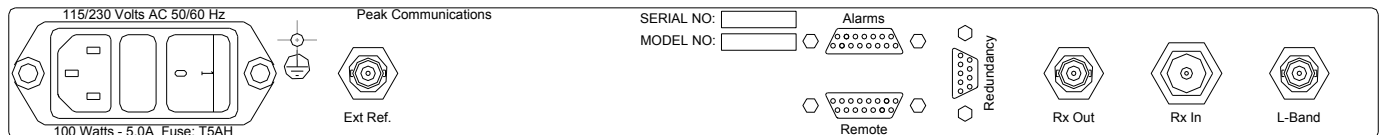
Options

- 2) Custom front panel logo and colour
- 8) High stability internal reference option
- 9) Ethernet interface with embedded web server & SNMP
- 17) Redundant power supplies

Notes; other 'P7000 series' options do not apply to these products.

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

Rear panel view (sample)



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