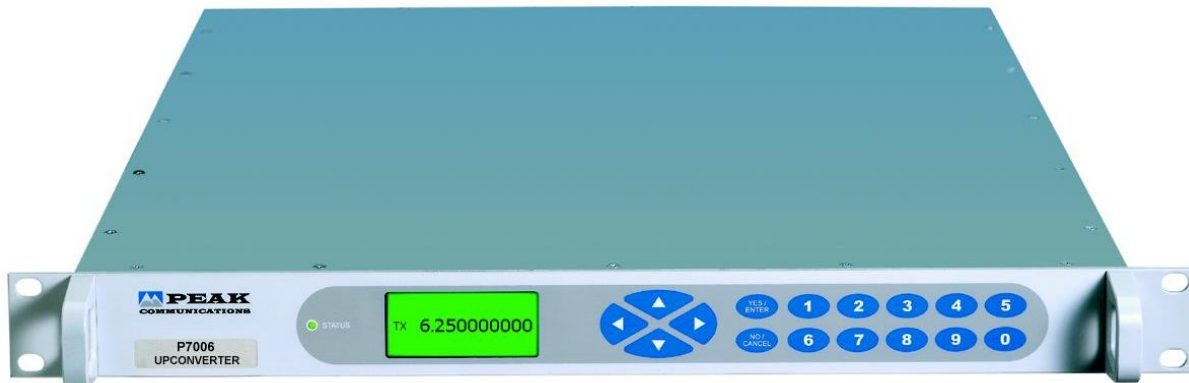


P7600 Series

Fully Synthesised, IF to Multi-Band, Up Converters



High Grade Up Converter Products;

P7613 IF 70MHz (or 140MHz) to Dual-Band, extended C and wide Ku-Band

For other non-standard frequency requirements please contact the factory.
For equivalent remote mount units, please contact the factory.

The **P7600 series** are next generation fully synthesised multi-band up converters which provide low-cost solutions for systems requiring an IF interface at 70MHz \pm 18MHz or 140MHz \pm 36MHz. The unit incorporates an L-Band interface as standard allowing mixed 70/ 140MHz & L-Band infrastructure to be accommodated, whilst future-proofing for L-Band infrastructure upgrades.

These Multi-range converters are offered with internal range switching and a single input and output connection. Range selection is performed via the front panel user interface or via remote control.








For redundancy the **P7600 series** use a simple CANBUS® interface and have an integral redundancy controller for 1+1 & 2+1 operation (for use with external **T1000H**, **T2000H** switch units), for N+1 system a separate stand-alone control and switch unit is provided (**RCU1000 series**).

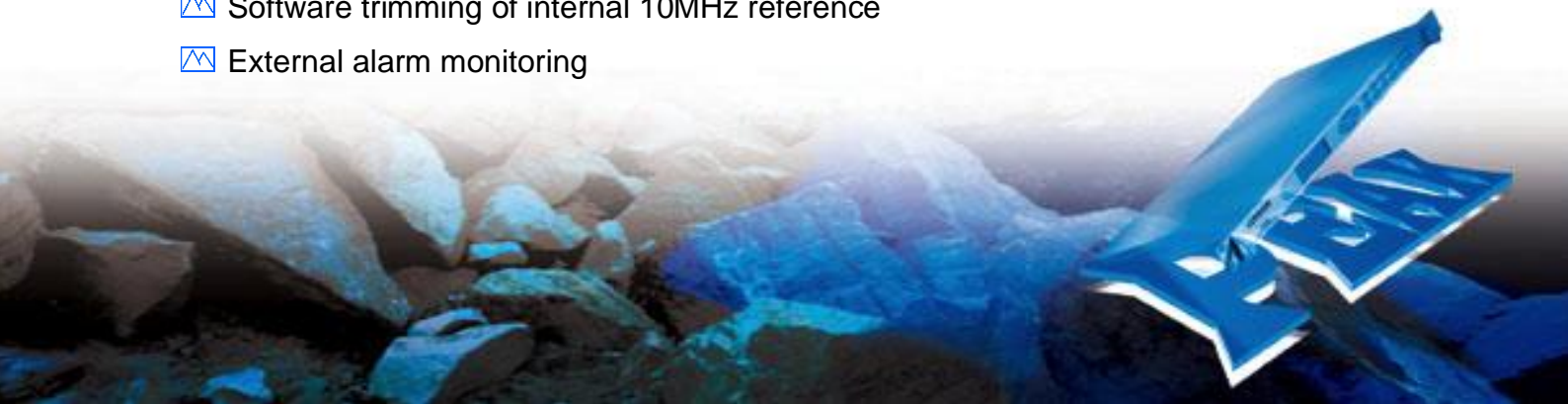
Note; separate stand-alone control and switching units can also be provided for 1+1 & 2+1 systems, please consult the factory.

The **P7000 series** of converters are designed to meet the phase noise, spurious, level and frequency stability requirements of Intelsat IBS/ Eutelsat SMS specifications and is compliant with IESS308/ 309. The product is suitable for high order modulation schemes and both very high & low data rates associated with digital TV signals. The units incorporate a graphics display module, membrane keyboard and feature a clear and intuitive control and configuration menu fully utilising the unique graphics display.

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

Peak Features

-  Compliant with IESS308/ 309 requirements
-  Suitable for use with latest high order modulation schemes in excess of 100Mbits/sec
-  L-Band interface
-  Integral 1+1 & 2+1 CANBUS® redundancy control & N+1 switch system available
-  Gain/ temperature compensated
-  Software trimming of internal 10MHz reference
-  External alarm monitoring



P7600 series – Typical Specification

IF Input

Frequency	70 ±18MHz
Option 1a;	140 ±36MHz
Connection	50Ω, BNC (f)
Option 3a;	75Ω, BNC (f)
VSWR	Better than 1.3:1

Output

Frequency	P7613 Extended C-band 5.85-6.65GHz & wide Ku-Band 13.75-14.5GHz.
Connection	50Ω, N-type (f)
VSWR	Better than 1.3:1

Transfer Characteristics

Conversion gain	+30dB
Attenuation	0 to 30dB, stepped 0.1dB
1dB GCP	Input -10dBm, output +8dBm
Gain stability	±0.5dB from 0 to 40°C
	±0.1dB per week (constant temp.)
Gain flatness	±1.5dB across full sub-bands
	±0.5dB across any 36MHz in band
Synth resolution	1Hz

RF Performance

Phase noise	-71dBc/Hz at 100Hz -76dBc/Hz at 1KHz -82dBc/Hz at 10KHz -90dBc/Hz at 100KHz -110dBc/Hz at 1MHz
Harmonics	Better than -50dBc
Spurious	<-55dBm (in band, non-carrier related) <-55dBc (in band, carrier related)
Group delay	Linear 0.025ns/MHz Ripple 1ns p-p Parabolic 0.015ns/MHz ²
Mute isolation	>80dB at minimum gain setting

Auxiliary L-band Input (Option 13; L-Band Output)

Frequency	950-1750MHz
Connector	50Ω, BNC (f)

Monitor Ports (Option 11)

This option replaces the standard auxiliary L-Band input facility.

Note; for additional monitor ports or for front panel mounting, please consult the factory

Option 11c;	IF monitor
Option 11d;	L-Band monitor
Option 11e;	SHF monitor
Connection	50Ω, BNC (f), rear panel (option 11e; N-Type)
Level	-20dBc ±3dB

External Reference Input (with automatic detection & locking)

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

Internal Back-up Reference

Frequency	10MHz
Adjustment	±0.45ppm, software 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 mount
Height	1U (1.75")
Depth	534mm (21"), plus connectors
Construction	Stainless steel chassis
Weight	Approx. 10.5kgs (23lbs)

Environmental

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

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
Alarms	In-built 1+1 & 2+1 controller 1 st & 2 nd LO lock failure PSU failure External alarm inputs Summary failure relay (form C)
Output mute	TTL input active low, front panel & remote control

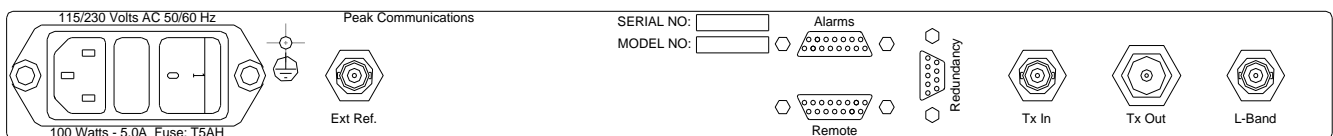
Options

- 1a) 140MHz IF input
- 2) Front panel with custom logo and colours
- 3a) 75Ω IF input
- 4) Lightweight Aluminium chassis
- 8) High stability internal reference option
- 9) Ethernet interface with embedded web server & SNMP
- 11c) IF monitor instead of standard L-Band auxiliary input
- 11d) L-Band monitor instead of standard L-Band auxiliary input
- 11e) SHF monitor instead of standard L-Band auxiliary input
- 13) L-Band auxiliary output instead of standard L-Band input
- 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)



Peak Communications reserves the right to alter the specifications of this equipment without prior notice. P7600series-180821.

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