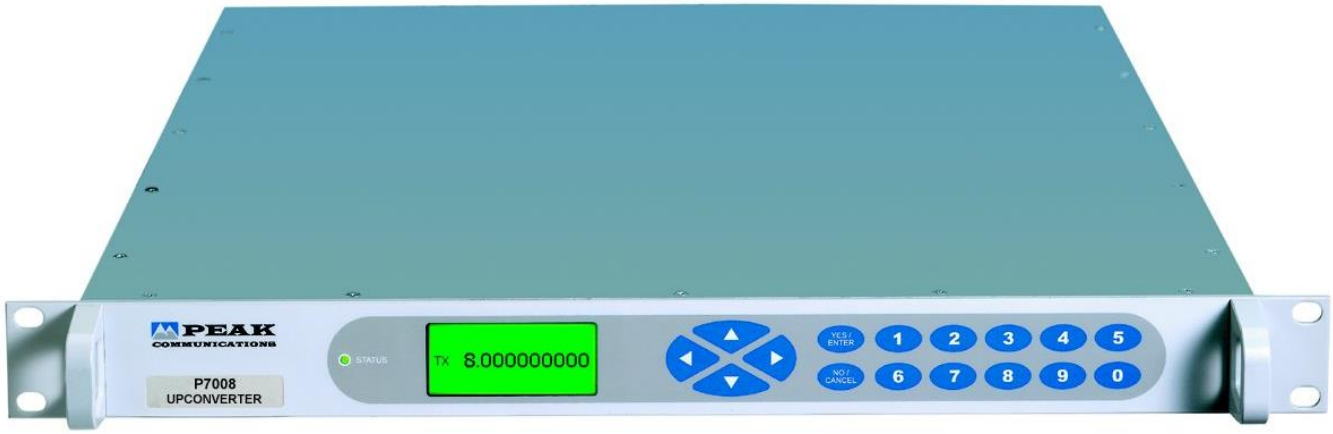
P7008

Fully Synthesised, IF to X-Band, Up Converter



The **P7008** is a next generation fully synthesised X-Band up converter which provides a low-cost solution for systems requiring an IF interface at 70MHz ±18MHz or 140MHz ±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.

For redundancy the **P7008** uses a simple CANBUS® interface and has 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 unit incorporates a graphics display module, membrane keyboard and features 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
- Integral test loop translator option available for TX signal path monitoring

P7008 – Typical Specification

IF Input

Frequency	70 ±18MHz
Option 1a;	140 ±36MHz
Option 1c;	Switchable 70 ±18MHz & 140MHz ±36MHz
Connection	BNC (f), 50Ω
Option 3a;	BNC (f), 75Ω
VSWR	Better than 1.25:1

Output

Frequency	7.90-8.40GHz
Connection	N-type (f), 50Ω
VSWR	Better than 1.3:1

Transfer Characteristics

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

RF Performance

Phase noise	-75dBc/Hz at 10Hz -85dBc/Hz at 100Hz -85dBc/Hz at 1KHz -85dBc/Hz at 10KHz -97dBc/Hz at 100KHz -108dBc/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	950-1450MHz
Connector	BNC (f), 50Ω
Max power input	-5dBm

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

Integral Test Loop Translator (Option 14)

TX sample input	SMA (f), 50Ω on rear panel, 0dBm max.
L-Band output	SMA (f), 50Ω on rear panel
Translation loss	15dB

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, 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. 9.5kgs (21lbs)

Environmental

Operating temp	-10^{0}C to +50^{0}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

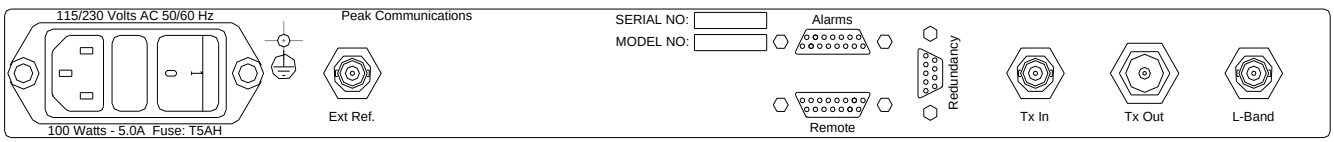
Remote control	RS232/ 485 port
Option 9;	Ethernet; embedded web server & SNMP network management support
Redundancy	CANBUS® interface for N+1 system In-built 1+1 & 2+1 controller
Alarms	1st & 2nd LO lock failure PSU failure External alarm inputs Summary failure relay (form C)
Output mute	TTL input active low, front panel & remote control

Options

1a)	140MHz IF input
1c)	IF switchable between 70MHz and 140MHz output
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
14)	Integral TLT for TX signal monitoring
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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