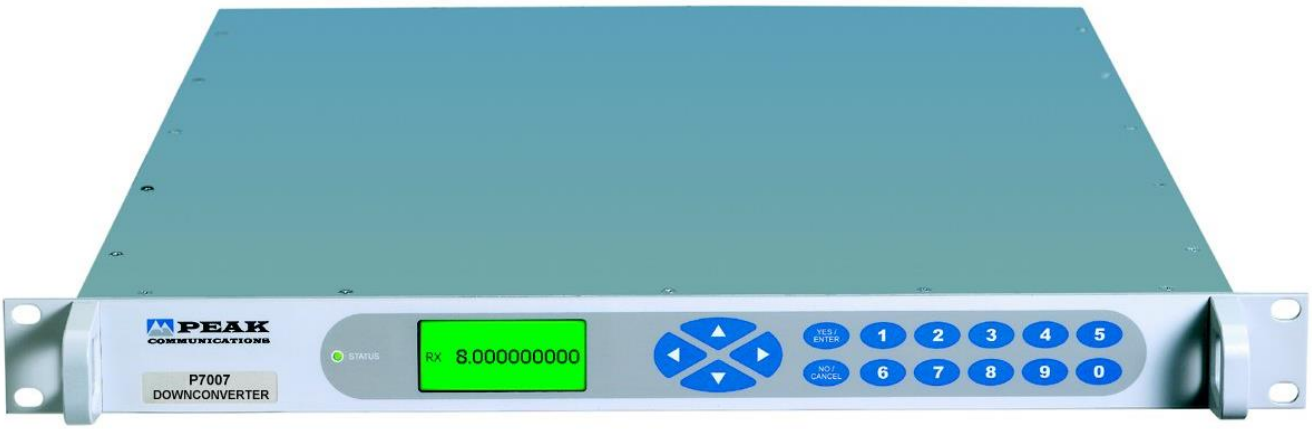
P7007

Fully Synthesised, X-Band to IF, Down Converter



The **P7007** is a next generation fully synthesised X-Band down 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 **P7007** uses a simple CANBUS® interface and has an integral redundancy controller for 1+1 & 2+1 operation (for use with external **R1000H**, **R2000H** 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
- L-Band interface
- Suitable for use with latest high order modulation schemes in excess of 100Mbits/sec
- 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

P7007 – Typical Specification

Input

Frequency	7.25-7.75GHz
Connection	50Ω, N-type (f)
VSWR	Better than 1.25:1
Level range	-20dBm absolute max
	-30dBm 1dB GCP

IF Output

Frequency	70 ±18MHz
Option 1b;	140 ±36MHz
Option 1d;	Switchable 70 ±18MHz & 140MHz ±36MHz
Connection	50Ω, BNC (f)
Option 3b;	75Ω, BNC (f)
VSWR	Better than 1.3:1
1dB GCP	+15dBm

Transfer Characteristics

Conversion gain	+40dB
Attenuation	0 to 30dB, stepped 0.1dB
Gain stability	±1dB from 0 to 40^{0}C
	±0.1dB per week (constant temp.)
Gain flatness	±1dB full band (±1.5dB for bandwidths >575MHz)
	±0.5dB across any 36MHz band
Synth resolution	1Hz

RF Performance

Phase noise	-75dBc/Hz at 100Hz
	-80dBc/Hz at 1kHz
	-85dBc/Hz at 10kHz
	-100dBc/Hz at 100kHz
	-110dBc/Hz at 1MHz
Harmonics	Better than -50dBc (at input -50dBm, gain 30dB)
Spurious	-55dBc/4kHz
Group delay	Linear 0.025ns
	Ripple 1ns p-p
	Parabolic 0.015ns/MHz^2

Auxiliary L-band Output

Frequency	950-1450MHz
Connector	50Ω, BNC (f)
Level	-10dBc, ±3dB

Monitor Ports (Option 11)

This option replaces the standard auxiliary L-Band output 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
Option 4b;	Short chassis 400mm (15.7”), plus connectors
Construction	Stainless steel chassis
Weight	Approx. 9.5kgs (21lbs)
Option 4;	Lightweight Aluminium chassis 7.5kg (15.5lb)

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

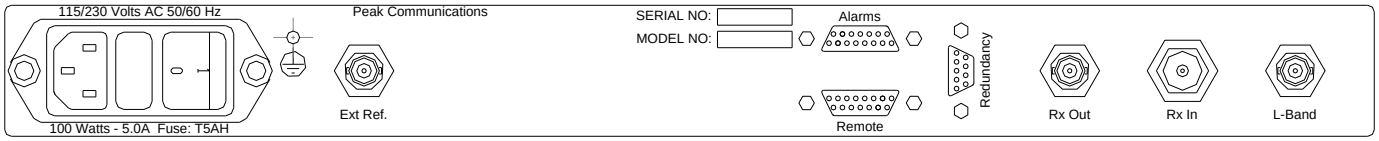
Remote control	RS232/ 485 port
Option 9;	Ethernet; embedded web server & SNMP network management support
Redundancy	CANBUS® interface for N+1 system
	In-built 1+1 & 2+1 controller
Alarms	1st & 2nd LO lock failure
	PSU failure
	External alarm inputs
	Summary failure relay (form C)

Options

1b)	140MHz IF output
1d)	IF switchable between 70MHz and 140MHz output
2)	Front panel with custom logo and colours
3b)	75Ω IF output
4)	Lightweight Aluminium chassis
4b)	Short chassis (Aluminium)
8)	High stability internal reference option
9)	Ethernet interface with embedded web server & SNMP
11c)	IF monitor instead of standard L-Band auxiliary output
11d)	L-Band monitor instead of standard L-Band auxiliary output
11e)	SHF monitor instead of standard L-Band auxiliary output
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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