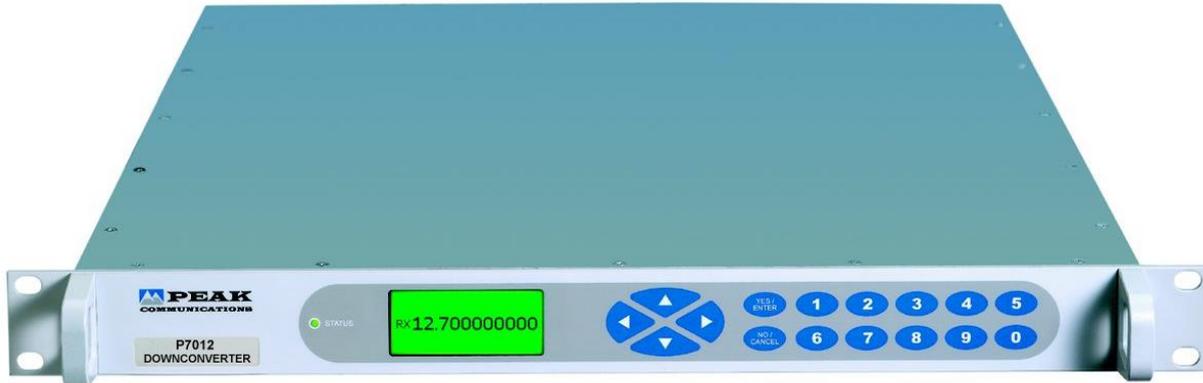


## P7010/ 11/ 12 Series

### Fully Synthesised, Ku-Band to IF, Down Converters



### High Grade Down Converter Products;

<b>P7010A</b>	10.95 – 11.70GHz
<b>P7010B</b>	10.70 – 11.70GHz
<b>P7011A</b>	11.70 – 12.25GHz
<b>P7011B</b>	11.70 – 12.75GHz
<b>P7012</b>	12.25 – 12.75GHz

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

The **P7010, P7011 & P7012 series** are next generation fully synthesised Ku-Band down converters which provide a low-cost solution for systems requiring an IF interface at  $70 \pm 18\text{MHz}$  or  $140 \pm 36\text{MHz}$ . 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 **P7010, P7011 & P7012** use a simple CANBUS® interface and have integral redundancy controllers 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**).

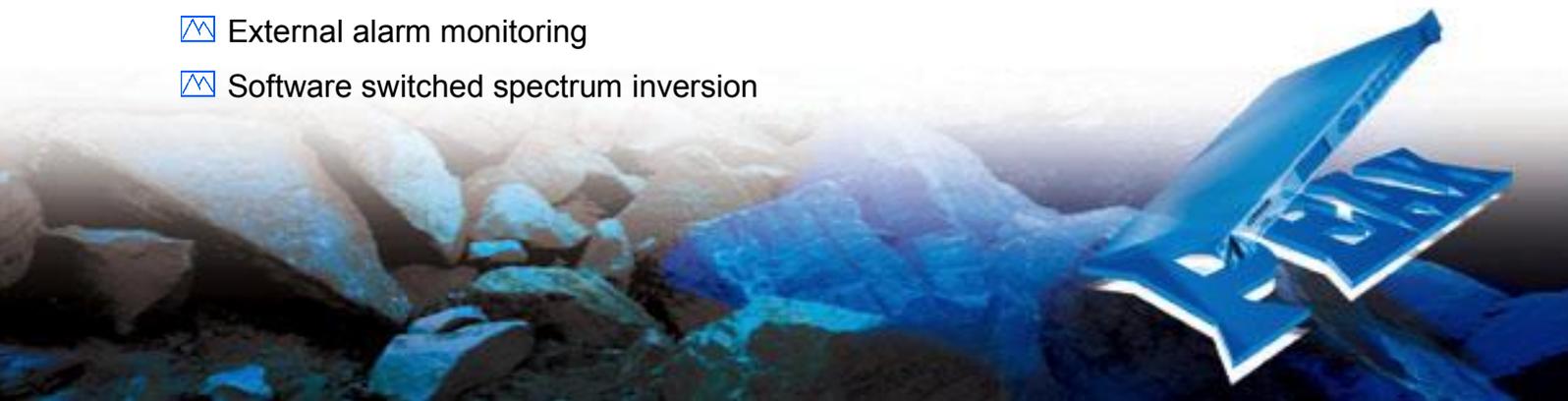
Note; separate stand-alone control and switching units can also be provided for 1+1 & 2+1 systems, please consult the factory.

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 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
-  Software switched spectrum inversion



## P7010/11/12 series – Typical Specification

### Input

Frequency	
<b>P7010A</b>	10.95-11.70GHz
<b>P7010B</b>	10.70-11.70GHz
<b>P7011A</b>	11.70-12.25GHz
<b>P7011B</b>	11.70-12.75GHz
<b>P7012</b>	12.25-12.75GHz
Connection	50Ω, N-type (f)
VSWR	Better than 1.5:1
GCP	-40dBm

### 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
Level	+10dBm max.

### Transfer Characteristics

Conversion gain	+60dB ±1dB
Attenuation	0 to 30dB, stepped 0.1dB
<i>Note; with option 1d, step size is 0.5dB</i>	
Gain stability	±1dB from 0 to 50°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	<-60dBm (in band non-carrier related) <-60dBc (in band carrier related)
Group delay	Linear 0.025ns/MHz Ripple 1ns p-p Parabolic 0.015ns/MHz <sup>2</sup>

### Auxiliary L-band Output

Frequency	
P7010A	950-1700MHz
P7010B	950-1950MHz
P7011A	950-1500MHz
P7011B	950-2000MHz
P7012	950-1450MHz
Connector	50Ω, BNC (f)
Output power	+10dBc (full band)

### 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
<b>Stability;</b>	
Allan deviation	<5 x 10 <sup>-12</sup> over 1s
Ageing	<±3 x 10 <sup>-10</sup> /day, <±3 x 10 <sup>-9</sup> /month, <±3 x 10 <sup>-8</sup> /year
Temp stability	<±2 x 10 <sup>-9</sup> over operating range

### High stability (Option 8)

Allan deviation	<2 x 10 <sup>-12</sup> over 1s
Ageing	<±2 x 10 <sup>-10</sup> /day, <±2 x 10 <sup>-9</sup> /month, <±2 x 10 <sup>-8</sup> /year
Temp stability	<±1.5 x 10 <sup>-9</sup> 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°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 <sup>®</sup> interface for N+1 system
Alarms	In-built 1+1 & 2+1 controller 1 <sup>st</sup> & 2 <sup>nd</sup> LO lock failure PSU failure External alarm inputs Summary failure relay (form C)

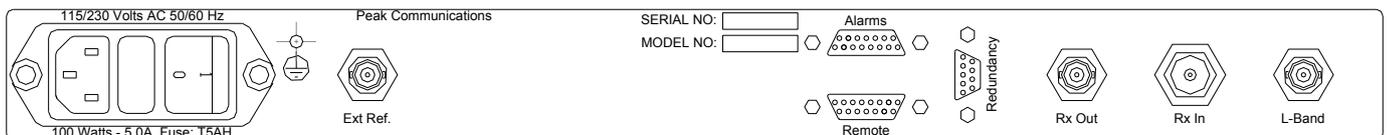
### Options

- 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
- 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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