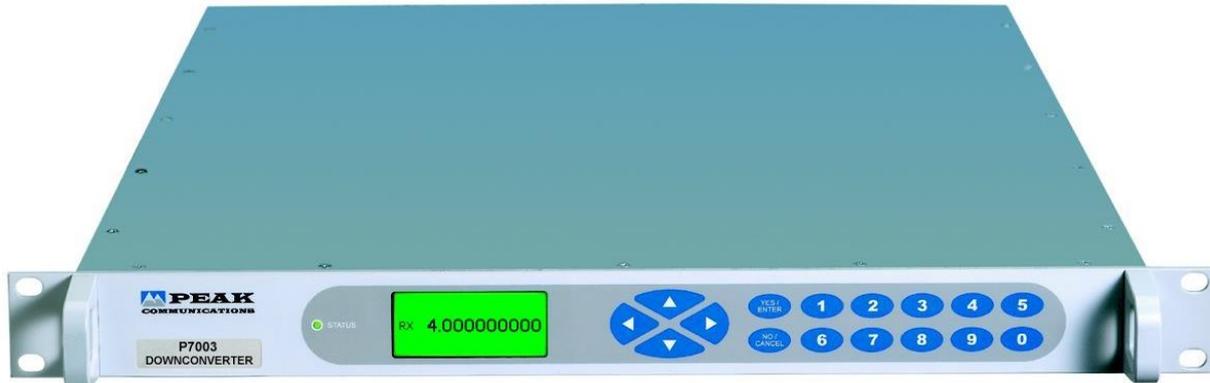


P7003 Series

Fully Synthesised, C-Band to IF, Down Converters



High Grade Down Converter Products;

P7003A	3.4-4.2GHz
P7003B	4.5-4.8GHz
P7003C	3.4-4.8GHz (covered with two internally switched ranges 3.4-4.2 & 4.5-4.8GHz)
P7003D	3.4-4.8GHz (covered with two internally switched ranges 3.4-4.2 & 4.2-4.8GHz)

For other non-standard frequency requirements please contact the factory.

For equivalent remote mount units, please contact the factory.

The **P7003 series** are next generation fully synthesised C-Band down converters which provides 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.

For redundancy the **P7003** 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 systems a separate stand-alone control and switch unit is provided (**RCU1000 series**).

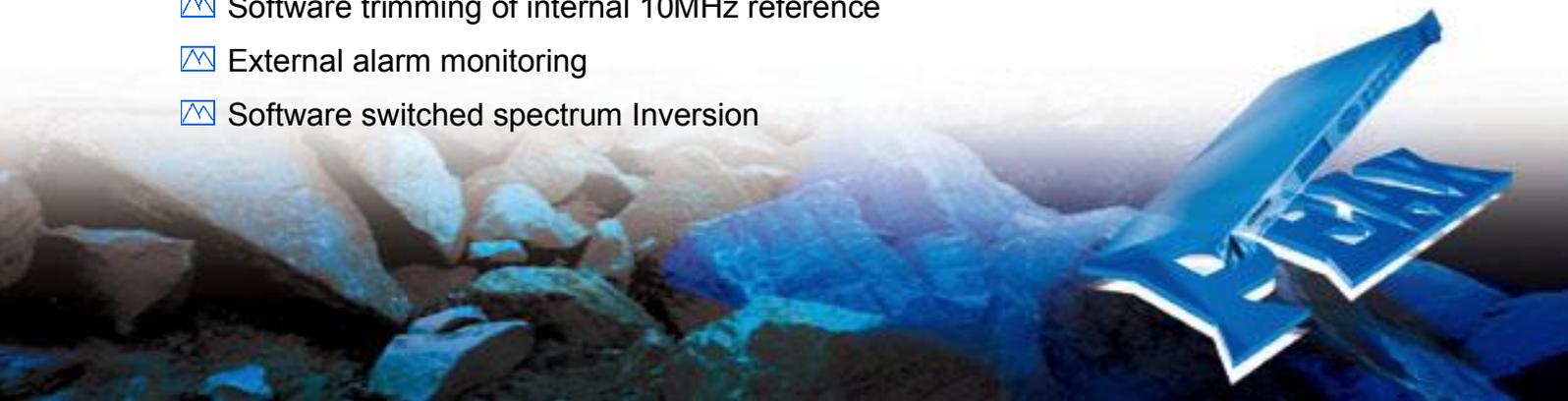
Note; separate stand-alone control and switching units can also be provided for 1+1 & 2+1 systems, please consult the factory.

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



P7003 series – Typical Specification

Input

Frequency	
P7003A	3.40-4.20GHz
P7003B	4.50-4.80GHz
P7003C	3.40-4.20GHz & 4.50-4.80GHz (two ranges)
P7003D	3.40-4.20GHz & 4.20-4.80GHz (two ranges)
Connection	50Ω, N-type (f)
VSWR	Better than 1.5:1
Level range	-20dBm absolute max -25dBm 1dB GCP

IF Output

Frequency	70 ±18MHz
Option 1b;	140 ±36MHz
Option 1d;	Switchable 70 ±18MHz & 140MHz ±36MHz
<i>Note; only available for single range units.</i>	
Connection	50Ω, BNC (f)
Option 3b;	75Ω, BNC (f)
VSWR	Better than 1.3:1
Level	+10dBm max.
Spectrum sense	Invert user selectable (via front panel & remote)

Transfer Characteristics

Conversion gain	+50dB ±1.5dB
Attenuation	0 to 30dB, stepped 0.1dB
Gain stability	±1dB from 0 to 40°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	-73dBc/Hz at 100Hz -76dBc/Hz at 1kHz -85dBc/Hz at 10kHz -93dBc/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 ²

Auxiliary L-band Output

Frequency	950-1750MHz max., inverted spectrum
Connector	50Ω, BNC (f)
Output power	0dBc (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

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°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 In-built 1+1 & 2+1 controller
Alarms	1 st & 2 nd LO lock failure PSU failure External alarm inputs Summary failure relay (form C)

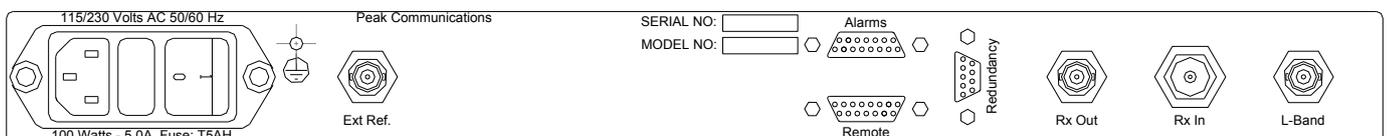
Options

- 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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