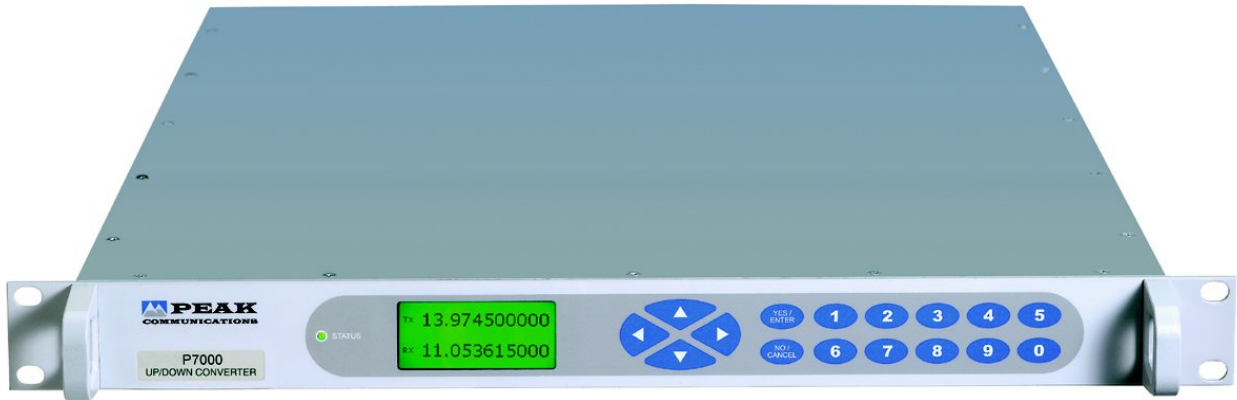


P7000

Combined Up and Down Frequency Converter











The **P7000** is a next generation fully synthesised combined L-Band Up and Down Converter which provides a low-cost solution for systems requiring an IF interface at 70MHz \pm 18MHz or 140MHz \pm 36MHz . 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.

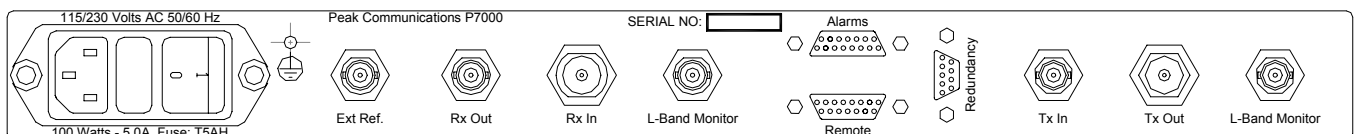
For redundancy the **P7000** uses a simple CANBUS[®] interface and has an integral redundancy controller for 1+1 & 2+1 operation (for use with external **TR1000L/ TR2000L** switch units), for N+1 systems a separate external control and switch unit is provided (**RCU1000 series**).

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 most suitable for both high and low rate data and both digital and analogue TV signals.

Peak Features

-  Compliant with IESS308/ 309 requirements
-  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 systems available
-  Aux DC and 10MHz reference outputs for Block Up and DownConverters
-  Software selectable spectrum inversion on DownConverter
-  External alarm monitoring for Block Converters
-  Software trimming of internal primary frequency reference
-  L-Band monitoring points

Rear Panel View



P7000 – Typical Specification

UpConverter

IF Input

Frequency	70 ±18 MHz (option 1a; 140 ±36MHz)
Connection	50Ω, BNC (option 3a; 75Ω)

L-band Output

Frequency	950-1525MHz
Option 5	950-1700MHz
Option 5a	950-1750MHz
Connection	50Ω, N-type

Transfer Characteristics

Conversion gain	+20dB ±1dB
Attenuation	0 to 30dB, stepped 0.1dB
1 dB GCP	Input -10dBm, Output +10dBm
Gain stability	±0.5dB from 0 to 40°C, ±0.1dB per week (constant temp.)
Gain flatness	±1dB full band (±1.5dB for wideband options) ±0.5dB across any 36MHz in band
Synth. Resolution	1Hz

RF Performance

Phase noise	-68dBc/Hz at 10Hz -80dBc/Hz at 100Hz -84dBc/Hz at 1kHz -86dBc/Hz at 10kHz -99dBc/Hz at 100kHz -110dBc/Hz at 1MHz
Harmonics	Better than -50dBc
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
Noise figure	20dB nominal at maximum gain

DownConverter

L-band Input

Frequency	950 - 1750MHz
Option 7	950 - 2150MHz
Connection	50Ω, N-type

IF Output

Frequency	70 ±18MHz (option 1b; 140 ±36MHz)
Connection	50Ω, BNC (option 3b; 75Ω)
Spectrum invert	Switchable (from front panel)

Transfer Characteristics

Conversion gain	+30dB ±1dB
Attenuation	0 to 30dB, stepped 0.1dB
1 dB GCP	Input -10dBm, Output +15dBm
Gain stability	±0.5dB from 0 to 40°C, ±0.1dB per week (constant temp.)
Gain flatness	±1.0dB full band (± 1.5dB for wideband options) ±0.5dB across any 36MHz in band
Synth. Resolution	1Hz

RF Performance

Phase noise	-65dBc/Hz at 10Hz -75dBc/Hz at 100Hz -80dBc/Hz at 1kHz -85dBc/Hz at 10kHz -96dBc/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
Noise figure	20dB nominal at maximum gain

General

L-Band Monitors (Up & DownConverter)

Connections	50Ω, BNC
Level	-20dBc ±3dB

Block Up/Down Converter Drives

Output reference	10MHz at 0dBm nominal
DC supply	+22.5 volts regulated at 0.5 amps
Connection	Fed to BUC/BDC on L-band cables
Control	Switchable from front panel

External Reference Input

Frequency	Factory selectable 5 or 10MHz
Connector	50Ω, BNC
Level	0dBm ±3dB
Required phase noise	Better than 50dBc/Hz of output Phase Noise

Internal Reference

Frequency	10MHz
Adjustment	±1.0ppm, software stepped 0.02ppm

Standard Stability

Stability	<5 x 10 ⁻¹⁰ over 1s, <5 x 10 ⁻⁹ per day
Ageing	<5 x 10 ⁻⁷ per year
Temp. stability	<5 x 10 ⁻⁸ over 0 to 50°C

High stability (Option 8)

Stability	<2 x 10 ⁻¹² over 1s, <2 x 10 ⁻¹⁰ per day
Ageing	<2 x 10 ⁻⁸ per year
Temp. stability	<2 x 10 ⁻⁹ over 0 to 50°C

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	EN55022 part B & EN50082-1
Safety	EN60950

Power supply

Voltage	85-132/170-265VAC, auto-select
Frequency	50/60Hz
Power	100 Watts max.

Control System

Remote Control	RS232/ 485 port Ethernet option; Embedded web server & SNMP network management support (option 9).
Redundancy	CANBUS [®] interface for N+1 systems In-built 1+1 & 2+1 controller
Alarms	LO lock fail PSU fail External alarm inputs Summary failure relay (form C)
Output mute	TTL input, active low

Options

- 1a) 140MHz IF input
- 1b) 140MHz IF output
- 2) Front panel with custom logo and colours
- 3a) 75Ω IF input
- 3b) 75Ω IF output
- 4) Lightweight Aluminium chassis
- 5) Wide band U/C output 950 to 1700MHz
- 5a) Wide band U/C output 950 to 1750MHz
- 7) Wide band D/C input 950 to 2150MHz
- 8) High Stability internal reference option
- 9) Ethernet interface with embedded web server & SNMP

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.



Peak Communications reserves the right to alter the specifications of this equipment without prior notice. P7000-210211.

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