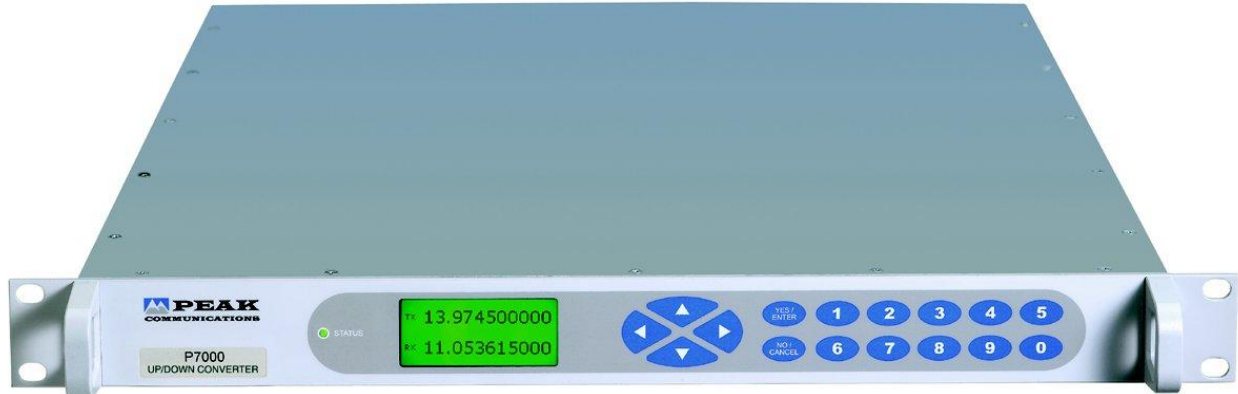


P7000i

Combined Up and Down Frequency Converter, for interfacing L-Band Modems & iDirect Evolution Routers with legacy 70/ 140MHz based infrastructure.








The **P7000i** is a next generation fully synthesised combined L-Band Up and Down Converter which provides a low-cost solution for interfacing L-Band Modems and iDirect Evolution Routers to existing IF (70MHz/ 140MHz) based infrastructure, whilst maintaining professional signal quality and low BER.

The **P7000i 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.

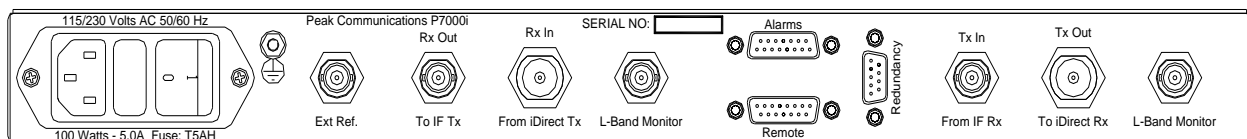
The unit incorporates a graphics display module, membrane keyboard and features a clear and intuitive control and configuration menu fully utilising the unique graphics display.

For redundancy the **P7000i** 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**).

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
-  Easy & cost effective interfacing of iDirect systems to existing 70/140MHz based infrastructure.
-  L-Band monitoring points

Rear Panel View



P7000i – Typical Specification

UpConverter (RX path)

IF Input (from existing RX infrastructure)

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

L-band Output (to L-Band Modem/ iDirect RX input)

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

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 (TX path)

L-band Input (from L-Band Modem/ iDirect TX output)

Frequency	950 - 1750MHz
Option 7;	950 - 2150MHz
Connection	50Ω, N-type (f)

IF Output (to existing TX infrastructure)

Frequency	70 ±18MHz
Option 1b;	140 ±36MHz
Connection	50Ω, BNC (f)
Option 3b;	75Ω, BNC (f)
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 (f)
Level	-20dBc ±3dB

External Reference Input

Frequency	Factory selectable 5 or 10MHz
Connector	50Ω, BNC (f)
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
Option 9 ;	Ethernet ; Embedded web server & SNMP network management support.
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. P7000i-110711.

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