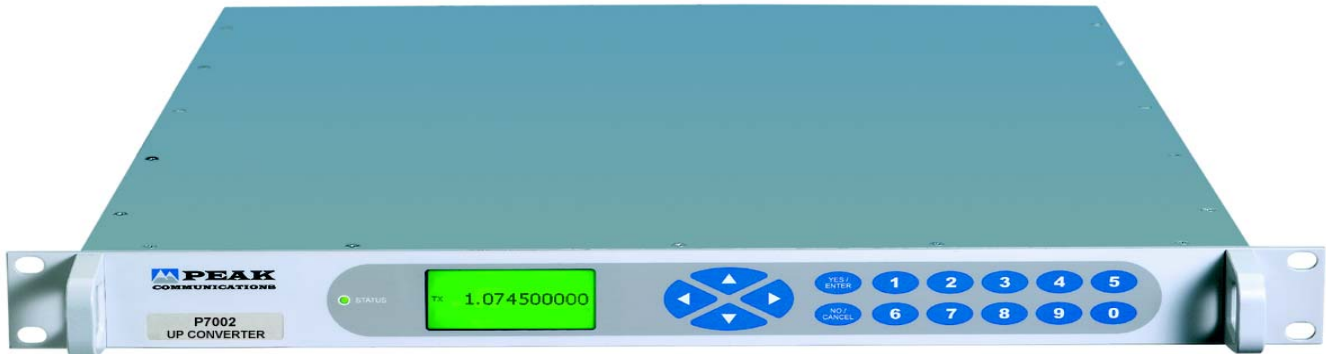


P7002D

Fully Synthesised Dual IF to L-Band UpConverter










The **P7002D** is a next generation fully synthesised Dual L-Band UpConverter which provides a low-cost solution for systems requiring an IF interface at $70 \text{ MHz} \pm 18\text{MHz}$ or $140\text{MHz} \pm 36\text{MHz}$. 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 **P7002D** uses a simple CANBUS® interface and has an integral redundancy controller for 1+1 & 2+1 operation. For channel to channel 1+1 switching see external **T1000L** switch unit, for complete chassis 1+1 or 2+1 switching see external **T1000LD**, **T2000LD** switch units, or for N+1 chassis switching systems a separate external control and switch unit is provided (**RCU1000D 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.

Each UpConverter can be configured individually for parameters such as frequency, gain etc., as shown in the specification.

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 Converters
-  External alarm monitoring for Block Converters
-  Software trimming of internal 10MHz reference
-  L-Band Output monitoring points



P7002D – Typical Specification

IF Input

Frequency	70 ±18MHz (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	<-65dBm (in band, non-carrier related) <-60dBm with option 5 (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	20 to 25dB typical at maximum gain

Block UpConverter Drive

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

L-Band Monitor

Connection	50Ω, BNC
Level	-20dBc ±3dB

External Reference Input

Frequency	Factory selectable 5 or 10MHz
Connection	50Ω, BNC
Level	0dBm ±3dB
Phase Noise	To be 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 12 hrs
Ageing	<5 x 10 ⁻⁷ per year
Temp. stability	<5 x 10 ⁻⁸ over 0 to 40°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 and EN50082-1
Safety	EN60950

Power supply

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

Control System

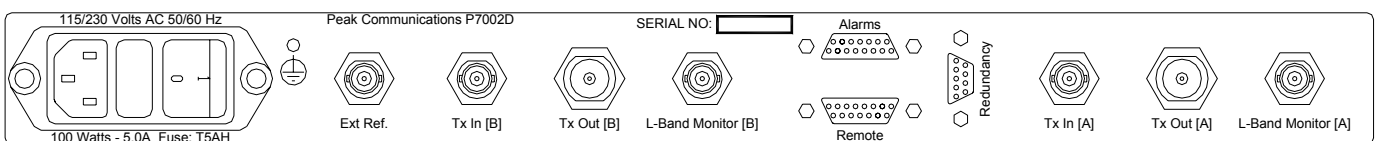
Remote Control	RS232/ 485 port Ethernet option; Embedded web server & SNMP network management support (option 9). CANBUS® interface for N+1 systems
Redundancy	In-built 1+1 & 2+1 controller
Alarms	LO lock fail PSU fail External alarm inputs Summary failure relay (form C)
Output mute	TTL input, active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

Options

- 1a) 140MHz IF Input
- 2) Custom front panel logo and colour
- 3a) 75Ω IF Input
- 4) Lightweight Aluminium chassis
- 5) Wideband output 950-1700MHz
- 5a) Wide band output 950-1750MHz
- 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.

Rear Panel View



Peak Communications reserves the right to alter the specifications of this equipment without prior notice. P7002D-210211.

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