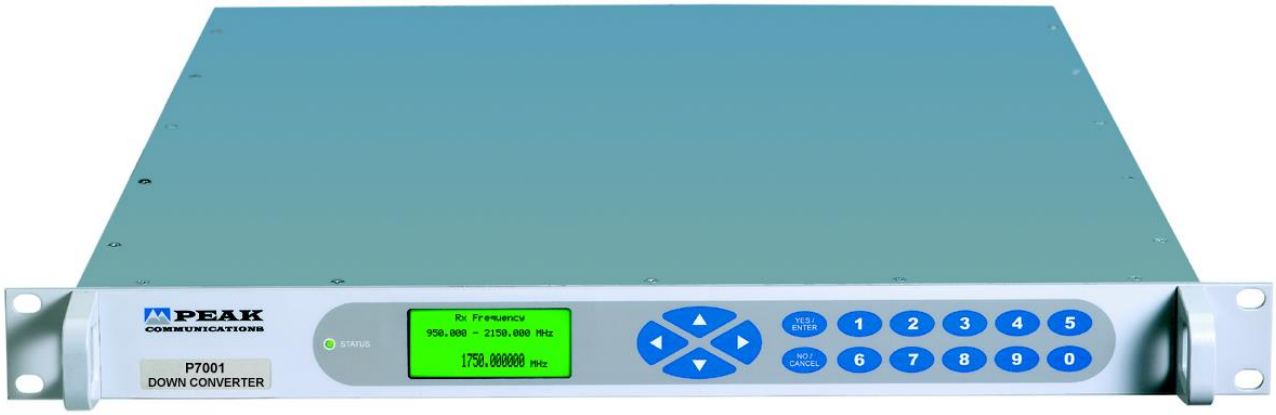
P7001Q

Quad-Channel, Fully Synthesised, L-Band to IF, Down Converter



The **P7001Q** is a next generation, fully synthesised, quad-channel, L-Band down converter which provides a low-cost solution for systems requiring an IF interface at 70 ±18MHz or 140 ±36MHz.
For redundancy the **P7001Q** uses a simple CANBUS® interface and has an integral redundancy controller for 1+1 & 2+1 operation. For channel to channel 1+1, 2+1 or 3+1 switching see external **R1000L, R2000L** and **R3000L** switch units, for complete chassis 1+1 or 2+1 switching see external **R1000LQ**, **R2000LQ** switch units, or for N+1 chassis switching systems a separate stand-alone control and switch unit is provided (**RCU1000Q 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 unit incorporates a graphics display module, membrane keyboard and features a clear and intuitive control and configuration menu fully utilising the unique graphics display.

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

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
- Aux DC and 10MHz reference outputs for block converters
- Software selectable spectrum inversion
- Software trimming of internal 10MHz reference

P7001Q – Typical Specification

L-band Inputs

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

IF Outputs

Frequency	70 ±18MHz
Option 1b;	140 ±36MHz
Connection	50Ω, BNC (f)
Option 3b;	75Ω, BNC (f)
Spectrum sense	Invert switchable (from front panel)

Transfer Characteristics

Conversion gain	+30dB ±1dB
	Note: For higher gain options please contact the factory.
Attenuation	0 to 30dB, stepped 0.5dB (front panel control)
1dB GCP	Input -10dBm, output +10dBm nominal
Gain stability	±0.5dB from 0 to 40^{0}C
	±0.1dB per week (constant temp.)
Gain flatness	±0.75dB full band (±1.5dB for 950–2150MHz option)
	±0.35dB across any 36MHz in band
Synth resolution	1Hz

RF Performance

Phase noise	-65dBc/Hz at 10Hz
	-85dBc/Hz at 100Hz
	-90dBc/Hz at 1kHz
	-90dBc/Hz at 10kHz
	-95dBc/Hz at 100kHz
	-110dBc/Hz at 1MHz
Harmonics	Better than -50dBc (at input -50dBm, gain 30dB)
Spurious	<-60dBm (in band, non-carrier related, at 15dB gain)
	<-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

Block Down Converter/LNB Drives

Output reference	10MHz at 0dBm nominal
DC supply	+22.5 volts regulated at 0.65 amps
Connection	Fed on L-band cables
Control	Switchable from front panel

External Reference Input (with automatic detection & locking)

Frequency	Factory selectable 5 or 10MHz
Connection	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
Construction	Stainless steel chassis
Weight	Approx. 10kgs (22lbs)

Environmental

Operating temp	-10^{0}C to +50^{0}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	100 Watts
Option 17;	Redundant PSU; provides a 1+1 redundant PSU configuration with separate prime power inputs

Control System

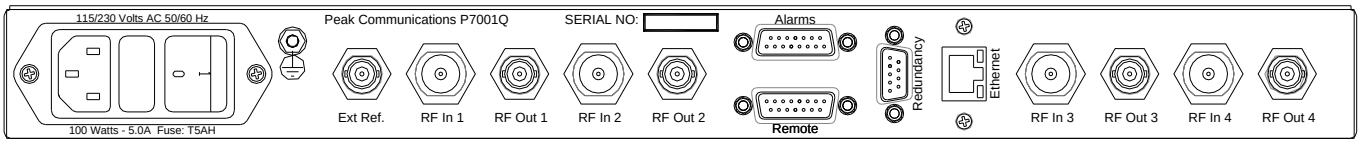
Remote control	RS232/ 485 port
Option 9;	Ethernet; embedded web server & SNMP network management support
Redundancy	In-built 1+1 & 2+1 controller
	CANBUS® interface for N+1 system
Alarms	LO lock failure
	PSU failure
	External alarm inputs
	Summary failure relay (form C)

Options

1b) 140MHz IF outputs
2) Custom front panel logo and colour
3b) 75Ω IF outputs
4) Lightweight Aluminium chassis
7) Wideband input 950-2150MHz
8) High stability internal reference option
9) Ethernet interface with embedded web server & SNMP
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)



Peak Communications reserves the right to alter the specifications of this equipment without prior notice. P7001Q-171024.
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