P7002R

Fully synthesised, Remote Mounted, IF to L-band, Up Converter

The **P7002R** is a remote mounted version of the popular Peak P7002 fully synthesised L-Band up converter which provides a low-cost solution for systems requiring an IF interface at 70MHz ±18MHz or 140MHz ±36MHz.

For control, the unit incorporates serial communications and an Ethernet interface that support control from a web-page or SNMP network management system. The **FPC100** is offered which is a standard 19-inch rack mount control unit that can interface with up to three **P7002R** units plus the 1+1 or 2+1 redundancy systems. For supply, the unit accepts a wide range of DC voltages, or can be offered with the **OPS27c** AC/DC PSU unit.

For redundancy, the **P7002R** uses a simple CANBUS® interface and integral redundancy controller for 1+1 & 2+1 operation (external **T1000LR**, **T2000LR** switch units are available).

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 are 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 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
- Integral 1+1 & 2+1 CANBUS® redundancy control & external switch units available
- Aux DC and 10MHz reference outputs for block up converters
- Full remote control including Ethernet with embedded web server and SNMP NMS
- External alarm monitoring for block converters
- Software trimming of internal 10MHz reference
- Compact and rugged weatherproof design

P7002R – Typical Specification

IF Input

Frequency	70 ±18MHz
Option 1a;	140 ±36MHz
Connection	50Ω, N-Type (f)

L-band Output

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^{0}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 Up Converter Drive

Output reference	10MHz at 0dBm nominal
DC supply	+22.5 volts regulated at 0.65 amps
Connection	Fed to BUC on L-band cable
Control	Switchable on/ off

External Reference Input (with automatic detection & locking)

Frequency	Factory selectable 5 or 10MHz
Connection	50Ω, TNC (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, 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

Dimensions	290 x 230 x 95mm (11.4 x 9.1 x 3.7inch)
Construction	Die-cast Aluminium, weatherproof, IP66 rated
Weight	Approx. 4kgs (9lbs)

Environmental

Operating temp	-10^{0}C to +50^{0}C (less solar gain)
Option 12;	-40^{0}C to +50^{0}C (less solar gain), with extended warm-up for cold start operation
Humidity	0-100% condensing
EMC	EN55022, part B & EN50082-1
Safety	EN60950

Power supply

Voltage	27-36VDC range
Power	35 Watts max.
Connection	multi-pin circular weatherproof (mating part supplied)

Control System

Remote control	RS232/ 485 port Ethernet; embedded web server & SNMP network management support.
Redundancy	CANBUS® interface & in-built 1+1 & 2+1 controller
Alarms	Summary failure relay (form C)

Options

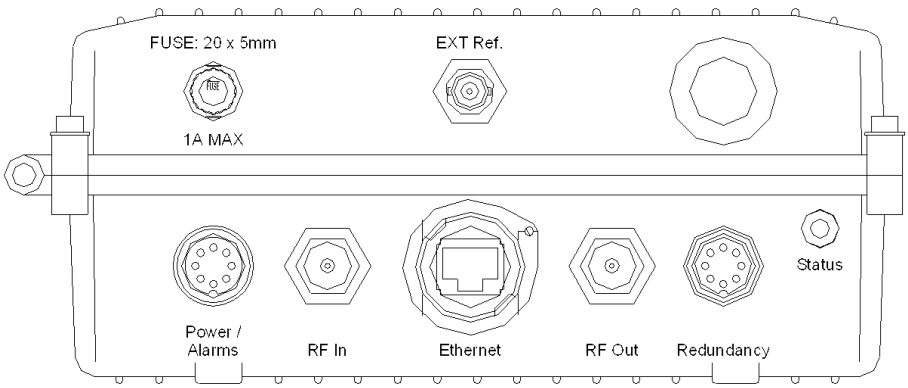
1a) 140MHz IF Input
5) Wide band output 950-1700MHz
5a) Wide band output 950-1750MHz
8) High stability internal reference option
12) Low temperature operation to -40^{0}C
16) Factory pre-set IP address

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.

Associated products

OPS27c remote mounted AC/DC PSU
FPC100 rack mount control panel (1RU)
T1000LR remote mounted 1+1 redundancy switch unit
T2000LR remote mounted 2+1 redundancy switch unit

Connector panel view *(sample)*



PEAK COMMUNICATIONS

Peak Communications reserves the right to alter the specifications of this equipment without prior notice. P7002R-190721.
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