

P7022R Series

Remote Mounted, Fully Synthesised, IF to S-Band, Up Converters



High Grade Up Converter Products;

P7022RA	2025 - 2120MHz
P7022RB	2200 - 2400MHz
P7022RC	2000 - 2400MHz

For other non-standard frequency requirements please contact the factory.
For equivalent rack mount units, please see P7022 series.

The **P7022R series** are remote mounted versions of the popular Peak fully synthesised S-Band up converters which provide a low-cost solution for systems requiring an IF interface at 70MHz \pm 18MHz or 140MHz \pm 36MHz.







For control, the unit incorporates a serial communications interface and an Ethernet interface that supports control from a web-page or SNMP network management system. The **FPC100** is offered which is a standard 19" rack mount control unit that can interface with up to three **P7022R** 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.

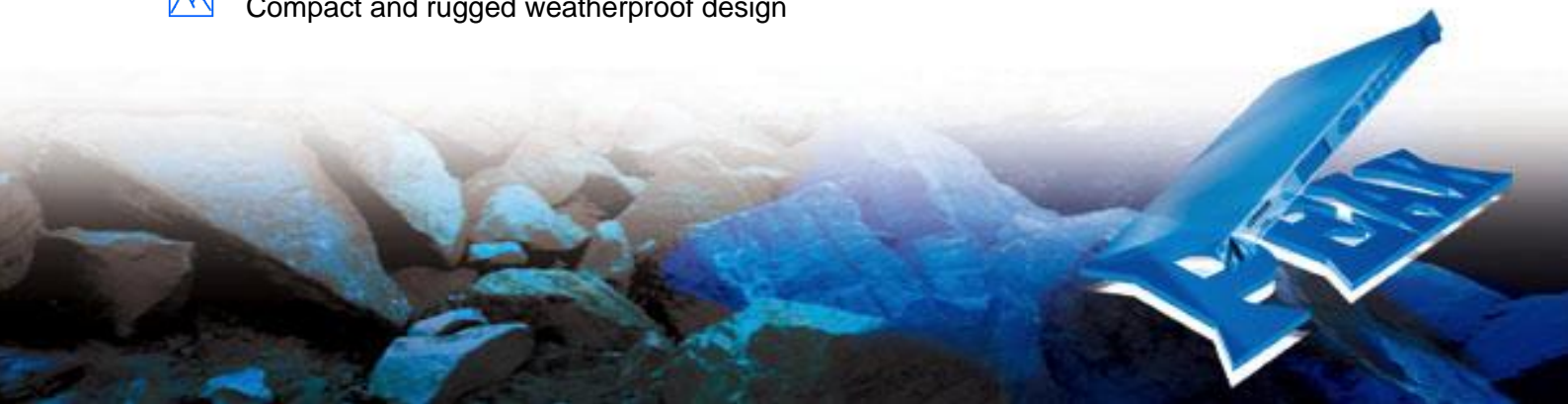
For redundancy, the **P7022R** uses a simple CANBUS® interface and integral redundancy controller for 1+1 & 2+1 operation (external **T1000LR**, **T2000LR** switch units are available).

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
-  Full remote control including Ethernet with embedded web server and SNMP NMS
-  Integral 1+1 & 2+1 CANBUS® redundancy control & external switch units available
-  Software trimming of internal 10MHz reference
-  Compact and rugged weatherproof design



P7022R series – Typical Specification

IF Input

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

S-band Output

Frequency	
P7022RA	2025 - 2120MHz
P7022RB	2200 - 2400MHz
P7022RC	2000 - 2400MHz
Connection	N-type (f), 50Ω

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	±1.0dB full band ±0.5dB across any 36MHz in band
Synth resolution	1Hz

RF Performance

Phase noise	-75dBc/Hz at 10Hz -85dBc/Hz at 100Hz -85dBc/Hz at 1KHz -85dBc/Hz at 10KHz -97dBc/Hz at 100KHz -108dBc/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	15dB nominal at maximum gain

External Reference Input (with automatic detection & locking)

Frequency	Factory selectable 5 or 10MHz
Connection	TNC (f), 50Ω
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°C to +50°C (less solar gain) Option 12; -40°C to +50°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
- 8) High stability internal reference option
- 12) Low temperature operation to -40°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 mounted control panel (1RU)
- T1000LR** remote mounted 1+1 redundancy switch unit
- T2000LR** remote mounted 2+1 redundancy switch unit

Connector panel view (sample)

