

P7021R Series

Remote Mounted, Fully synthesised, S-band to IF, Down Converters



High Grade Down Converter Products;

P7021RA	2200 - 2300MHz
P7021RB	2200 - 2400MHz
P7021RC	2000 - 2400MHz

For other non-standard frequency requirements please contact the factory.
For equivalent rack mount units, please see P7021 series.

The **P7021R series** are remote mounted versions of the popular Peak fully synthesised S-Band down converters which provide a low-cost solution for systems requiring an IF interface at $70\text{MHz} \pm 18\text{MHz}$ or $140\text{MHz} \pm 36\text{MHz}$.

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 **P7021R** 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 **P7021R** uses a simple CANBUS® interface and integral redundancy controller for 1+1 & 2+1 operation (external **R1000LR**, **R2000LR** 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 100Mbps/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



P7021R series – Typical Specification

S-band Input

Frequency	
P7021RA	2200 - 2300MHz
P7021RB	2200 - 2400MHz
P7021RC	2000 - 2400MHz
Connection	N-type (f), 50Ω

IF Output

Frequency	70 ±18MHz
Option 1b;	140 ±36MHz
Connection	N-type (f), 50Ω
Spectrum sense	Invert switchable (via remote control)

Transfer Characteristics

Conversion gain	+30dB ±1dB
Attenuation	0 to 30dB, stepped 0.5dB
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	-60dBc/Hz at 10Hz
	-70dBc/Hz at 100Hz
	-75dBc/Hz at 1kHz
	-80dBc/Hz at 10kHz
	-90dBc/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	15dB nominal at maximum gain

LNA Drive (Option 10)

DC supply	+22.5 volts regulated at 0.5 amps
Connection	Fed on S-band cable
Control	Switchable on/off via remote control

External Reference Input (with automatic detection & locking)

Frequency	Factory selectable 5 or 10MHz
Connector	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°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

- 1b) 140MHz IF output
- 8) High stability internal reference option
- 10) LNA DC supply option
- 12) Low temperature operation to -40°C
- 16) Factory pre-set IP address

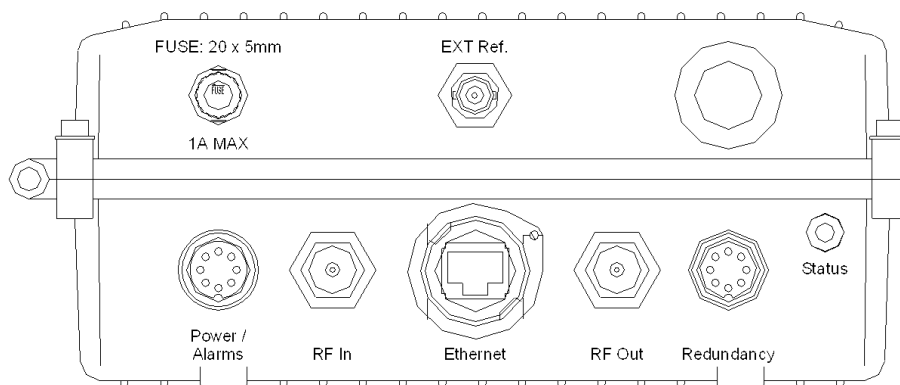
Notes; other 'P7000 series' options do not apply to these products.

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 mount control panel (1RU)
- R1000LR Remote mounted 1+1 redundancy switch unit
- R2000LR Remote mounted 2+1 redundancy switch unit

Connector panel view (sample)



ESATCOM INC.

3628 Francis Lewis Blvd.

Flushing, NY 11358

www.esatcom.com

Tel: 718.799.0084

Email: sales@esatcom.com