

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 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 **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 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



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

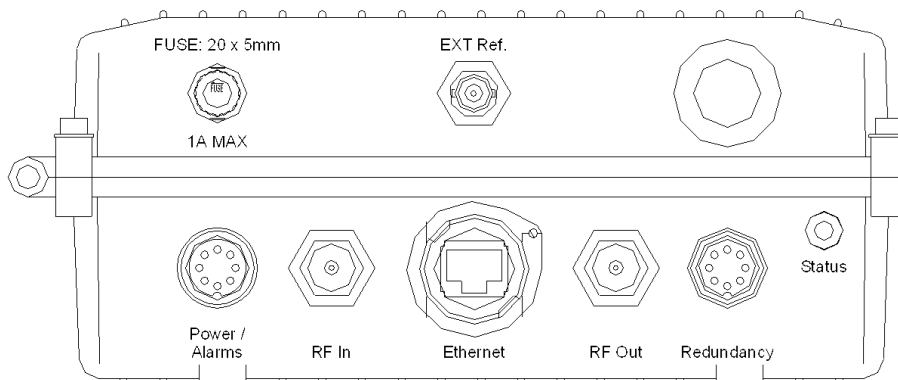
Notes; other 'P7000 series' options do not apply to these products.

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)



Peak Communications reserves the right to alter the specifications of this equipment without prior notice. P7021Rseries-180821.

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