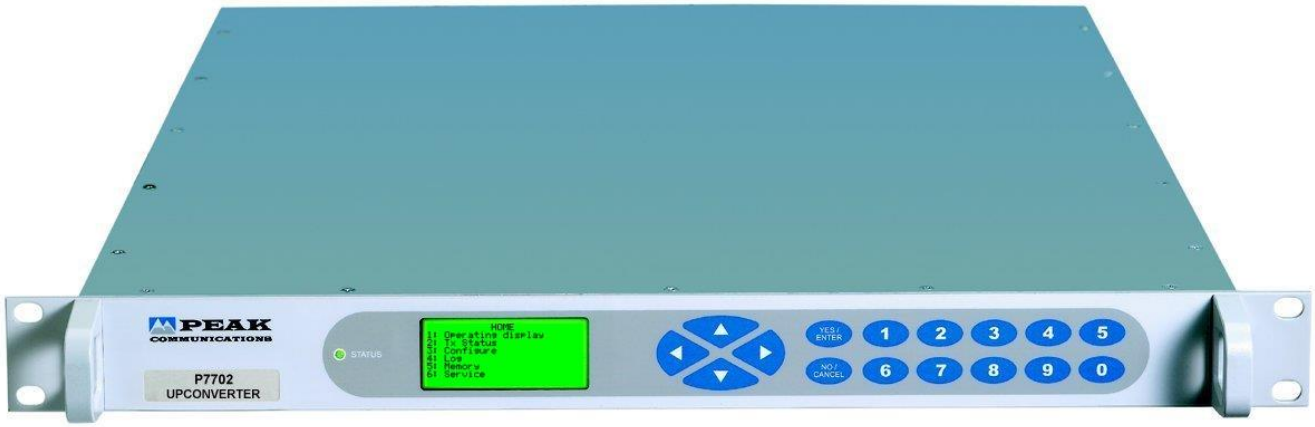
# P7702i

## UHF to L-Band, UpConverter




The 19 inch, 1RU rack mounted **P7702i** Block UpConverter unit from Peak Communications is designed to typically take the incoming UHF signal and produce an output at L-Band that is suitable for further conversion by a **P7001** converter or for direct connection to a receiver in a DownLink chain.

The **P7702i** unit is designed to meet the phase noise, spurious level and frequency stability requirements of Intelsat IBS/Eutelsat SMS specifications. The excellent group delay response makes the product suitable for high rate data and both digital and analogue TV signals.

The **P7702i** unit is mains powered and is constructed of high-grade components to give the ultimate in performance. These components include a high grade crystal oscillator to give the highest performance of stability and phase noise, a well proven externally phase locked DRO, a high grade waveguide band-pass filter to give minimum insertion loss and flatness across the band, a high performance low noise amplifier, high grade mixers and isolators between each section to ensure correct matching.

For redundancy the **P7702i** uses a simple CANBUS® interface and has an integral redundancy controller for 1+1 & 2+1 operation (for use with external switch units), for N+1 systems a separate stand-alone control and switch unit is provided (**RCU1000 series**).

Note; separate stand-alone control and switching units can also be provided for 1+1 & 2+1 systems, please consult the factory.

# *P7702i – Typical Specification*

### UHF Input

| | |
|---|---|
| Frequency | 750 ±250MHz |
| Connection | 50Ω, BNC (f) |
| Level | -15dBm max |
| Return loss | >11dB |

### L-band Output

| | |
|---|---|
| Frequency | 1200 ±250MHz |
| Connection | 50Ω, N-type (f) |
| Level (P1dB GCP) | 0dBm |
| Return loss | >11dB |

### Transfer Characteristics

| | |
|---|---|
| Conversion gain | +30dB ±1dB |
| Attenuation | 0 to 30dB, stepped 0.1dB |
| 1 dB GCP | Input -10dBm, output +10dBm |
| Gain stability | ±1dB from -10 to +50$^0$C |
| | ±0.1dB per week (constant temp.) |
| Gain flatness | ±1.3dB full band |
| | ±0.5dB across any 36MHz in band |

### RF Performance

| | |
|---|---|
| Phase noise | -50dBc/Hz at 10Hz |
| | -80dBc/Hz at 100Hz |
| | -90dBc/Hz at 1kHz |
| | -97dBc/Hz at 10kHz |
| | -100dBc/Hz at 100kHz |
| | -110dBc/Hz at 1MHz |
| Spurious | <-55dBm (in band non-carrier related) |
| | <-65dBc (in band carrier related) |
| Group delay | Linear 0.025ns/MHz |
| | Ripple 1ns p-p |
| | Parabolic 0.015ns/MHz$^2$ |
| Noise figure | <25dB typical at maximum gain |

### External Reference Input with automatic detection

| | |
|---|---|
| Frequency | Factory selectable 5 or 10MHz |
| Connection | 50Ω, BNC (f) |
| Level | 0dBm ±3dB |
| Phase noise | to be better than 50dBc/Hz of output phase noise |

### Internal Reference

| | |
|---|---|
| Frequency | 10MHz |
| Adjustment | ±1.0ppm, stepped 0.02ppm |

Standard Stability

| | |
|---|---|
| Allan deviation | 1 x 10$^{-11}$ over 1s |
| Ageing | <5 x 10$^{-9}$ per day, <5 x 10$^{-7}$ per year |
| Temp stability | <5 x 10$^{-8}$ over -10 to 50$^0$C |

High Stability (Option 8)

| | |
|---|---|
| Allan deviation | <3 x 10$^{-12}$ over 1s |
| Ageing | <2 x 10$^{-10}$ per day, <2 x 10$^{-8}$ per year |
| Temp stability | <3 x 10$^{-9}$ over -10 to 50$^0$C |

### Mechanical

| | |
|---|---|
| Width | 19”, standard rack mount |
| Height | 1U (1.75”) |
| Depth | 534mm (21”), plus connectors |
| Construction | Stainless steel chassis |
| Weight | Approx. 9kgs (20lbs) |

### Environmental

| | |
|---|---|
| Operating temp | -10$^0$C to +50$^0$C |
| EMC | EN55022 part B & EN50082-1 |
| Safety | EN60950 |

### Power supply

| | |
|---|---|
| Voltage | 90-264VAC |
| Frequency | 47-63Hz |
| Power | 60 Watts |

### Control System

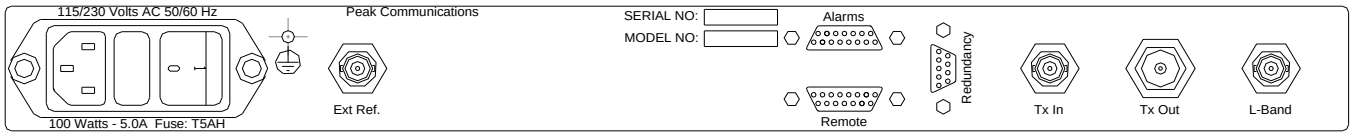
| | |
|---|---|
| Remote control | RS232/ 485 port |
| Option 9; | Ethernet; embedded web server & SNMP network management support |
| Redundancy | CANBUS® interface for N+1 system |
| | In-built 1+1 & 2+1 controller |
| Alarms | LO lock fail |
| | PSU fail |
| | Summary failure relay (form C) |

## *Options*

2) Custom front panel logo and colour
8) High stability internal reference option
9) Ethernet interface with embedded web server & SNMP

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*





Peak Communications reserves the right to alter the specifications of this equipment without prior notice. P7701i-230715.
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