# IBU(Ka) Series

## Ka-Band, Single-Range, Single & Multi-Channel, Rack Mount Block UpConverters


## *High Grade Single & Multi-Channel UpConverter Products;*

| | |
|---|---|
| **IBU1970** | L-Band to Ka-Band (19.70-20.20GHz) |
| **IBU2750** | L-Band to Ka-Band (27.50-28.60GHz) |
| **IBU2830** | L-Band to Ka-Band (28.30-29.10GHz) |
| **IBU2900** | L-Band to Ka-Band (29.00-30.00GHz) |
| **IBU2960** | L-Band to Ka-Band (29.60-30.20GHz) |
| **IBU3100** | L-Band to Ka-Band (30.00-31.00GHz) |

For other non-standard frequency requirements and multi-channel units, please contact the factory.
For equivalent units with full user interface, remote control and digital attenuation, please see IBUH(Ka) series datasheet.
For equivalent remote mount units, please see PBU(Ka) series datasheet.

The 19 inch 1U rack mounted **IBU(Ka) series** of Block Frequency UpConverter units from Peak Communications are designed to take the output of an UpConverter or modem at L-Band and produce an output at SHF.

The **IBU(Ka) series** of units are mains powered and are constructed of high grade components to give the ultimate performance.

For 1+1 & 2+1 redundancy the **IBU(Ka) series** are offered with the **RCU100/ RCU200 & RCUH100/ RCUH200 series** redundancy controllers. For N+1 systems the **RCU1001(Ka) series** is offered.

### *Peak Features*

- High stability, low ripple and excellent phase noise, using PDRO technology
- 10MHz External Reference option fitted as standard with automatic internal reference back-up
- Fully compatible with **RCU100/ RCU200 & RCUH100/ RCUH200 series** 1+1/ 2+1 redundancy controllers and **RCU1001(Ka) series** for N+1 redundancy units
- L-Band monitor and Fibre Optic L-Band interface options available
- Available in Dual, Triple & Quad-Channel versions

# IBU(Ka) series - Typical Specification

### SHF Output

Frequency

| | |
|---|---|
| IBU1970 | 19.7-20.2GHz |
| IBU2750 | 27.5-28.6GHz |
| IBU2830 | 28.3-29.1GHz |
| IBU2900 | 29.0-30.0GHz |
| IBU3020 | 29.6-30.2GHz |
| IBU3100 | 30.0-31.0GHz |
| Connector | K-Type (f), 50Ω or 2.92mm (f) |

Note; for multi-channel version, multiple connectors are provided

| | |
|---|---|
| Return loss | >15dB |
| 1dB GCP | +8dBm |

### L-Band Input

Frequency

| | |
|---|---|
| IBU1970 | 950-1450MHz |
| IBU2750 | 950-2050MHz |
| IBU2830 | 950-1750MHz |
| IBU2900 | 950-1950MHz |
| IBU2960 | 950-1550MHz |
| IBU3100 | 950-1950MHz |
| Connector | SMA (f), 50Ω |
| Option 1b; | N-Type (f), 50Ω |

Note; for multi-channel version, multiple connectors are provided

| | |
|---|---|
| Return loss | >15dB |

### Transfer Characteristics

| | |
|---|---|
| Conversion gain | 17dB ±1dB at band centre |
| Gain stability | ±0.75dB from 0 to 50°C |
| Gain flatness | ±1dB full band |
| | ±0.5dB across any 40MHz in-band |
| LO Frequency | dependant on model |

### Manual L-Band Attenuation (Option 10a)

| | |
|---|---|
| Attenuation range | 30dB nominal |
| Control | Continuously variable from front panel |

### RF Performance

| | |
|---|---|
| LO Phase noise | -45dBc/Hz at 10Hz |
| (typical with good | -65dBc/Hz at 100Hz |
| phase noise | -85dBc/Hz at 1kHz |
| ext. 10MHz ref) | -95dBc/Hz at 10kHz |
| | -105dBc/Hz at 100kHz |
| | -120dBc/Hz at 1MHz |
| Spurious | <-70dBm (in-band non-carrier related) |
| | <-65dBc (in-band carrier related) |
| LO leakage | -60dBm (always out of band) |
| 3rd Order Intercept | >+18dBm |

### SHF & L-Band Monitor (Option 2)

Connector

| | |
|---|---|
| Option 2a; | L-Band monitor, SMA (f), 50Ω on rear panel |
| Option 2b; | L-Band monitor, SMA (f), 50Ω on front panel |

Note; for other connector types please consult the factory

| | |
|---|---|
| Level | -20dBc ±3dB |

### Internal Reference Stability

| | |
|---|---|
| Stability | <1 x $10^{-10}$ per second, <±5 x $10^{-9}$ per day |
| Temp. Stability | <±5 x $10^{-8}$ (0 to +50°C) |
| Ageing | <±5 x $10^{-7}$ per year |

High stability (Option 8)

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

### External Reference Input

| | |
|---|---|
| Frequency | 10MHz (5MHz factory settable) |
| Connector | BNC (f), 50Ω |
| Level | 0dBm ±3dB |
| Required phase noise | better than 50dBc/Hz of output Phase Noise |
| Locking delay | <2 min to stabilise from cold |

### Mechanical

| | |
|---|---|
| Width | 19" standard rack mountable |
| Height | 1U (1.75") |
| Depth | ~400mm (15.7"), plus connectors |

Note; for multi-channel versions, a longer ~534mm (21") chassis may be provided, depending upon options selected.

| | |
|---|---|
| Construction | Aluminium chassis |
| Weight | 3.5-6kgs (8-13lbs) approx., unit and option dependent |

### Environmental

| | |
|---|---|
| Operating temp | 0°C to +50°C |
| EMC | EN 55022 part B & EN 50082-1 |
| Safety | EN 60950 |

### Power Supply

| | |
|---|---|
| Voltage | 90-264VAC |
| Frequency | 47-63Hz |
| Power | 50 Watts max. |

### Control System Interface

| | |
|---|---|
| Alarms | LO lock fail |
| | PSU fail |
| | Amplifier fail |

## Options

| | |
|---|---|
| 1b) | N-Type (f) L-Band Interface connection |
| 2a) | -20dBc L-band monitor on rear panel (SMA) |
| 2b) | -20dBc L-band monitor on front panel (SMA) |
| 6) | Fibre optic L-band interface connection |
| 8) | High Stability Internal reference option |
| 10a) | Manual Variable Attenuator, 0-30dB, at L-band |

Note; the addition of options can modify the typical specification, for details please consult the factory

## Rear panel View


PEAK COMMUNICATIONS


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