

## IBU(Ka) Series

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



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

|                |                                                  |
|----------------|--------------------------------------------------|
| <b>IBU1970</b> | L-Band (950-1450MHz) to Ka-Band (19.70-20.20GHz) |
| <b>IBU2750</b> | L-Band (950-1950MHz) to Ka-Band (27.50-28.50GHz) |
| <b>IBU2830</b> | L-Band (950-1750MHz) to Ka-Band (28.30-29.10GHz) |
| <b>IBU2850</b> | L-Band (950-1950MHz) to Ka-Band (28.50-29.50GHz) |
| <b>IBU2900</b> | L-Band (950-1950MHz) to Ka-Band (29.00-30.00GHz) |
| <b>IBU2960</b> | L-Band (950-1550MHz) to Ka-Band (29.60-30.20GHz) |
| <b>IBU3100</b> | L-Band (950-1950MHz) 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 up converter units from Peak Communications are designed to take the output of an up converter 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 the **RCU1001(Ka) series** is offered.

The unit has a highly stable internal reference source and will automatically detect and lock to an external 10MHz signal, when applied.

### Peak Features

-  High stability, low ripple and excellent phase noise, using PDRO technology
-  10MHz external reference 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 | 27.5-28.5GHz |
| IBU2830 | 28.3-29.1GHz |
| IBU2850 | 28.5-29.5GHz |
| 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

18dB

1dB GCP

+8dBm

### L-Band Input

#### Frequency

950 up to 2050MHz, model dependant

Connector

SMA (f), 50Ω

Option 1b;

N-Type (f), 50Ω

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

Return loss

18dB

### Transfer Characteristics

Conversion gain

17dB ±1dB at band centre

Gain stability

±0.75dB from 0 to 50°C

Gain flatness

±1dB full band (±1.5dB for bandwidths ≥800MHz)

±0.5dB across any 40MHz in-band

LO frequency

dependant on model

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

Attenuation range

30dB nominal

Control

Continuously variable from front panel

Note; can degrade gain flatness performance

### RF Performance

LO phase noise

-45dBc/Hz at 10Hz

(typical with good

-65dBc/Hz at 100Hz

phase noise

-95dBc/Hz at 1kHz

ext. 10MHz ref)

-100dBc/Hz at 10kHz

-100dBc/Hz at 100kHz

-115dBc/Hz at 1MHz

Spurious

<-70dBm (in-band non-carrier related)

<-65dBc (in-band carrier related)

Note; 2<sup>nd</sup> harmonic of IF (2xIF) at -50dBc@0dBm output, if in-band

LO leakage

-70dBm (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

### External Reference Input (with automatic detection)

Frequency

10MHz (5MHz factory settable)

Connector

BNC (f), 50Ω

Level

0dBm ±5dB

Required phase noise

better than 50dBc/Hz of output phase noise

Locking delay

<2 minutes to stabilise from cold

### Internal Back-up Reference Stability

Allan deviation

5 x 10<sup>-11</sup> over 1s

Ageing

<5 x 10<sup>-9</sup> per day, <5 x 10<sup>-7</sup> per year

Temp stability

<5 x 10<sup>-8</sup> over 0 to 50°C

### High stability (Option 8)

Allan deviation

3 x 10<sup>-12</sup> over 1s

Ageing

<2 x 10<sup>-10</sup> per day, <2 x 10<sup>-8</sup> per year

Temp stability

<3 x 10<sup>-9</sup> over 0 to 50°C

### 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 & 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.

Option 7;

Redundant PSU; provides a 1+1 redundant power supply configuration with separate prime power inputs

### Control System Interface

Alarms

LO lock failure

PSU failure

Amplifier failure

### 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

7) Redundant power supplies

8) High stability internal reference option

10) 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 (sample)



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