

## IBU(B) Series

### Multi-Range, Rack Mounted Block UpConverters.



#### High Grade UpConverter Products;

<b>IBU2000</b>	L-Band (950-1950MHz) to Ku-Band (12.75-14.50GHz), 2 range.
<b>IBU3000</b>	L-Band (950-1700MHz) to Ku-Band (12.75-14.50GHz), 3 range.
<b>IBU3003</b>	L-Band (950-1700MHz) to Dual-Band (C, Ku-Band), 2 range.
<b>IBU3004</b>	L-Band (950-1700MHz) to Tri-Band (C, X, Ku-Band), 3 range.

[For other non-standard frequency requirements, please contact the factory.](#)

[For single-range Block UpConverters please see IBU\(A\) series datasheet.](#)

[For equivalent units with full user interface, remote control and digital attenuation, please see IBUH\(B\) series datasheet.](#)






[For equivalent remote mount units, please see PBU\(B\) series datasheet.](#)

The 19 inch 1U rack mounted **IBU(B) 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(B) series** of units are mains powered and are constructed of high grade components to give the ultimate performance. They utilise Externally Phase Locked Dielectric Resonator Oscillators (XPDRos) and are far superior in stability and phase noise to Voltage Controlled Oscillators (VCOs), as commonly used in other BUC designs.

These Multi-range converters are offered as standard with internal range switching and a single input and output connection. Range selection is performed manually from the front panel.

#### 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
-  Integral Test Loop Translator option available for TX signal path monitoring
-  Fully compatible with **RCU100/ RCU200 series** 1+1/ 2+1 redundancy controllers and **RCU1001 series** for N+1 redundancy units
-  L-Band monitor, RF Mute and Fibre Optic L-Band interface options available



## IBU(B) series - Typical Specification

### SHF Output

Frequency	12.75-13.75GHz, 13.75-14.5GHz.
<b>IBU2000</b>	12.75-13.50GHz, 13.00-13.75GHz, 13.75-14.5GHz.
<b>IBU3000</b>	12.75-13.50GHz, 13.00-13.75GHz, 13.75-14.5GHz.
<b>IBU3003</b>	Dual-Band; C-Band 5.85-6.425GHz, Ku-Band 13.75-14.5GHz.
<b>IBU3004</b>	Tri-Band; C-Band 5.85-6.425GHz, X-Band 7.90-8.40GHz, Ku-Band 13.75-14.5GHz.
Connector	50Ω, SMA (Option 1a; N-Type)
Return loss	>15dB
1dB GCP	+8dBm (Option 5; +18dBm)

### L-Band Input

Frequency	950 up to 1950MHz, dependent upon model
Connector	50Ω, SMA (Option 1b; N-Type) (Option 3; 75Ω, BNC)
Return loss	>15dB

### Transfer Characteristics

Conversion gain	17dB ±1dB at band centre (Option 4; 27dB ±1dB)
Gain stability	±0.5dB from 0 to 40°C
Gain flatness	±1dB across each sub-band (±1.5dB if bandwidth >800MHz) ±1.5dB across full Ku-band ±0.5dB across any 40MHz in band. dependant on model
LO Frequency	dependant on model

### Manual Attenuation (Option 10)

Attenuation range	30dB nominal
Control	Continuously variable from front panel

### RF Performance

LO Phase noise (typical with good phase noise ext. 10MHz ref)	-55dBc/Hz at 10Hz -75dBc/Hz at 100Hz -92dBc/Hz at 1kHz -100dBc/Hz at 10kHz -107dBc/Hz at 100kHz -125dBc/Hz at 1MHz
Harmonics Spurious	Better than -50dBc <-80dBm (in band non-carrier related) <-75dBc (in band carrier related)
3rd Order Intercept LO leakage	>+18dBm (standard unit) -80dBm (always out of band)

### L-Band Monitor (Option 2)

Connector	Option 2a; 50Ω, SMA on rear panel (other types available)
Connector	Option 2b; 50Ω, SMA on front panel
Level	-20dBc ±3dB

### RF Mute (Option 13)

Isolation	60dB min.
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### Internal Reference Stability

Stability	<1 x 10 <sup>-10</sup> per second
Temp. Stability	<±5 x 10 <sup>-8</sup> (0 to +50°C)
Ageing	<±5 x 10 <sup>-9</sup> per day

### High stability (Option 8)

Stability	<2 x 10 <sup>-12</sup> over 1s, <2 x 10 <sup>-10</sup> per day
Ageing	<2 x 10 <sup>-8</sup> per year
Temp. stability	<2 x 10 <sup>-9</sup> over 0 to 50°C

### External Reference Input

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

### Mechanical

Width	19" standard rack mount
Height	1U (1.75")
Depth	~400mm (15.7"), plus connectors
Construction	Aluminium chassis
Weight	4.5kgs (10lbs)

### Environmental

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

### Power Supply

Voltage	115/230VAC±10%, selectable, Linear power supply
Frequency	50/60Hz
Power	50 Watts max.

### Control System Interface

Alarms	LO lock fail PSU fail Amplifier fail
Controls	Mute input (Option 13)

### Options

- 1a) N-Type (f) SHF Interface connection
- 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)
- 3) 75Ω interface at L-band (6dB gain loss)
- 4) Extra 10db increase in gain, to +27dB
- 5) 1dB GCP increase to +18dBm (includes extra 10dB Gain option)
- 6) Fibre optic L-band interface connection
- 8) High Stability Internal reference option
- 10a) Manual Variable Attenuator, 0-30dB, at L-band
- 11) Separate inputs & outputs for independent operation.
- 13) RF mute option

Note: 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. IBU(B)series-281209.

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