

## IBUH(Ka) Series

**Ka-Band, Single & Multi-Range, Rack Mount Block Up Converters with full user interface and remote control**



### High Grade Single-Range Up Converter Products;

|                 |                                                  |
|-----------------|--------------------------------------------------|
| <b>IBUH1970</b> | L-Band (950-1450MHz) to Ka-Band (19.70-20.20GHz) |
| <b>IBUH2750</b> | L-Band (950-1950MHz) to Ka-Band (27.50-28.50GHz) |
| <b>IBUH2830</b> | L-Band (950-1750MHz) to Ka-Band (28.30-29.10GHz) |
| <b>IBUH2850</b> | L-Band (950-1950MHz) to Ka-Band (28.50-29.50GHz) |
| <b>IBUH2900</b> | L-Band (950-1950MHz) to Ka-Band (29.00-30.00GHz) |
| <b>IBUH2960</b> | L-Band (950-1550MHz) to Ka-Band (29.60-30.20GHz) |
| <b>IBUH3100</b> | L-Band (950-1950MHz) to Ka-Band (30.00-31.00GHz) |

### High Grade Multi-Range Up Converter Products;

|                 |                                                                |
|-----------------|----------------------------------------------------------------|
| <b>IBUH3007</b> | L-Band (950-1950MHz max.) to Ka-Band (27.50-30.00GHz) 3 ranges |
| <b>IBUH4005</b> | L-Band (950-1950MHz max.) to Ka-Band (27.50-31.00GHz) 4 ranges |

For other non-standard frequency requirements and multi-channel units, please contact the factory.

For equivalent lower cost BUC units without the full user interface please see IBU(Ka) series datasheet.

For equivalent remote mount units, please see PBU(Ka) series datasheet.

The 19-inch 1U rack mounted **IBUH(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 **IBUH(Ka) series** of units are mains powered and are constructed of high grade components to give the ultimate performance.

For redundancy the **IBUH(Ka)** uses a simple CANBUS® interface and has an integral redundancy controller for 1+1 & 2+1 operation (for use with external **T1000HH(Ka)**, **T2000HH(Ka)** switch units), also compatible with the **RCUH100/ RCUH200 series** 1+1/ 2+1 redundancy controllers. For N+1 systems the **RCU1002(Ka) series** is offered.

The unit incorporates a graphics display module, membrane keyboard and features a clear and intuitive control and configuration menu fully utilising the unique graphics display. With optional input power monitoring 'built-in test' enhancement features, compression warning alarms and attenuation control, this product series offers the user the ultimate in controllability.

**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
-  10MHz external reference fitted as standard with automatic internal reference back-up
-  Optional input signal power detector with user settable input & 'compression alarm' threshold levels
-  Integral 1+1 & 2+1 CANBUS® redundancy control & N+1 switch system available
-  L-Band monitor, attenuation and fibre optic L-Band interface options available
-  Electronically variable attenuator option for both local & remote control of gain
-  Available in dual, triple & quad-channel versions



## IBUH(Ka) Series - Typical Specification

### SHF Output

#### Frequency

|          |                                                                                                     |
|----------|-----------------------------------------------------------------------------------------------------|
| IBUH1970 | 19.7-20.2GHz                                                                                        |
| IBUH2750 | 27.5-28.5GHz                                                                                        |
| IBUH2830 | 28.3-29.1GHz                                                                                        |
| IBUH2850 | 28.5-29.5GHz                                                                                        |
| IBUH2900 | 29.0-30.0GHz                                                                                        |
| IBUH2960 | 29.6-30.2GHz                                                                                        |
| IBUH3100 | 30.0-31.0GHz                                                                                        |
| IBUH3007 | 27.5-30.0GHz, with the following internal ranges;<br>27.5-28.5, 28.3-29.1 & 29.0-30.0GHz            |
| IBUH4005 | 27.5-31.0GHz, with the following internal ranges;<br>27.5-28.5, 28.3-29.1, 29.0-30.0 & 30.0-31.0GHz |

#### Connector

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

#### Return loss

18dB

#### 1dB GCP

+8dBm

### L-Band Input

#### Frequency

950 up to 1950MHz, 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  $\pm$ 1dB at band centre

#### Gain stability

$\pm$ 0.75dB from 0 to 50°C

#### Gain flatness

$\pm$ 1dB full band ( $\pm$ 1.5dB for bandwidths  $\geq$ 800MHz)

$\pm$ 0.5dB across any 40MHz in-band

dependant on model

#### LO frequency

### Electronically Variable L-Band Attenuation (Option 10)

#### Attenuation range

30dB nominal

#### Step size

#### Option 10a;

0.5dB

#### Option 10b;

0.1dB

#### Control

Local & remote

### RF Performance

#### LO phase noise

-45dBc/Hz at 10Hz

(typical with good

phase noise

ext. 10MHz ref)

-65dBc/Hz at 100Hz

-95dBc/Hz at 1kHz

-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

#### 3rd order intercept

>+18dBm

#### LO leakage

-70dBm (always out of band)

### L-Band Monitor (Option 2)

#### Front or rear panel mounted

#### Connector

50Ω, SMA (f)

Note: other connector styles available, please consult the factory

#### Level

-20dBc  $\pm$ 3dB

### Input Power Detector & Alarms (Option 14)

#### Detection range

0 to -50dBm

#### Display

Actual input and calculated output power, graphical via front panel and available via remote control

#### Low input power Alarm

User settable via front panel interface

#### Compression Alarm

Automatic 'preset' warning alarm for input/output compression point. User settable via front panel interface

### External Reference Input (with automatic detection)

#### Frequency

10MHz

#### Connector

50Ω, BNC (f)

#### Level

0dBm  $\pm$ 5dB

#### Required phase noise

better than 50dBc/Hz of output phase noise

#### Locking delay

<5 min to stabilise from cold

### Internal Back-up Reference Stability

#### Allan deviation

$5 \times 10^{-11}$  over 1s

#### Ageing

< $5 \times 10^{-9}$  per day, < $5 \times 10^{-7}$  per year

#### Temp stability

< $5 \times 10^{-8}$  over 0 to 50°C

### High stability (Option 8)

#### Allan deviation

$3 \times 10^{-12}$  over 1s

#### Ageing

< $2 \times 10^{-10}$  per day, < $2 \times 10^{-8}$  per year

#### Temp stability

< $3 \times 10^{-9}$  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

4-6kgs (9-13lbs) 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. (single-range)

75 Watts max. (multi-range)

#### Option 7;

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

### Control System Interface

#### Remote control

RS232/ 485 port

#### Option 9;

Ethernet; embedded web server & SNMP network management support

#### Redundancy

CANBUS<sup>®</sup> interface for N+1 system

In-built 1+1 & 2+1 controller

#### Discrete 'alarms

LO lock failure

interface'

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

9) Ethernet interface with embedded web server & SNMP

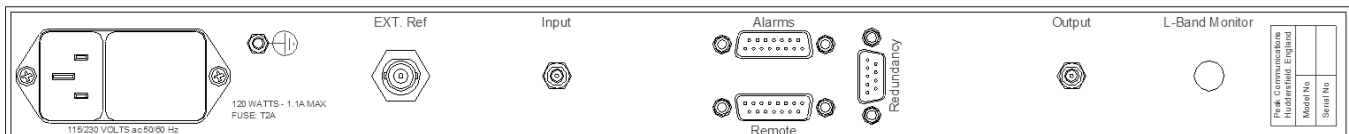
10a) Attenuator with local & remote control, 30dB stepped 0.5dB

10b) Attenuator with local & remote control, 30dB stepped 0.1dB

14) Input signal power detector and alarms

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

## Rear panel view (sample)



## ESATCOM INC.

3628 Francis Lewis Blvd.

Flushing, NY 11358

[www.esatcom.com](http://www.esatcom.com)

Tel: 718.799.0084

Email: [sales@esatcom.com](mailto:sales@esatcom.com)