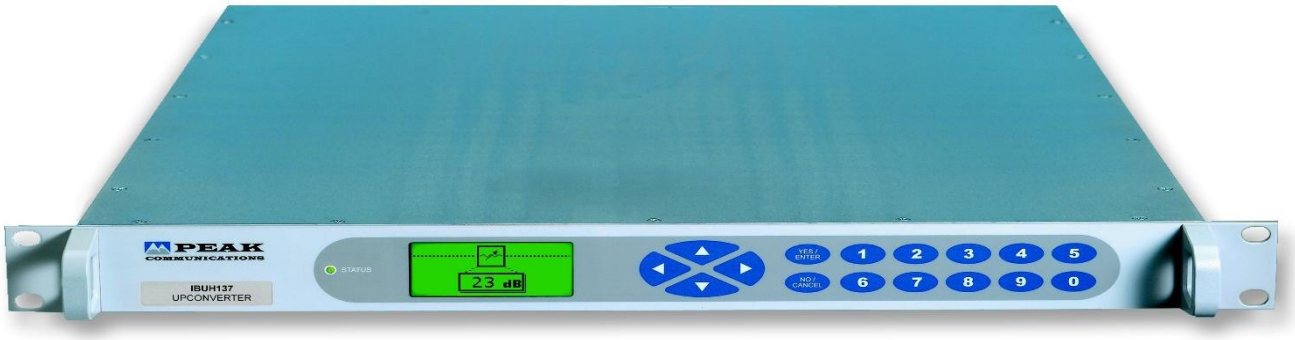
IBUH(Ka) Series

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



High Grade Single-Range Up Converter Products;

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

High Grade Multi-Range Up Converter Products;

IBUH3007	L-Band (950-1950MHz max.) to Ka-Band (27.50-30.00GHz) 3 ranges
IBUH4005	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 and attenuation 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; 27.5-28.5, 28.3-29.1 & 29.0-30.0GHz
IBUH4005	27.5-31.0GHz, with the following internal ranges; 27.5-28.5, 28.3-29.1, 29.0-30.0 & 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 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 ±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

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	-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: 2nd 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 ±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 ±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	5×10^{-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 50^0C

High stability (Option 8)

Allan deviation	3×10^{-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 50^0C

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

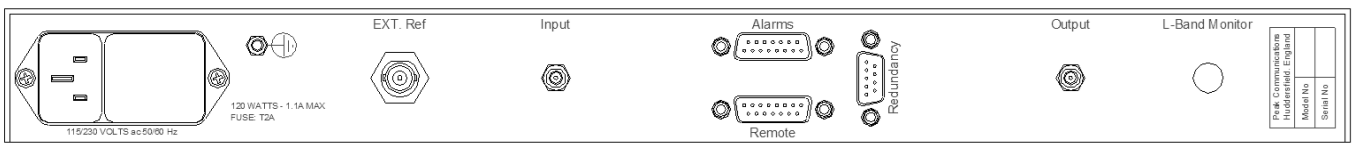
Remote control	RS232/ 485 port
Option 9;	Ethernet; embedded web server & SNMP network management support
Redundancy	CANBUS® interface for N+1 system In-built 1+1 & 2+1 controller
Discrete 'alarms interface'	LO lock failure PSU failure Amplifier Failure

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)
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)



PEAK COMMUNICATIONS

Peak Communications reserves the right to alter the specifications of this equipment without prior notice. IBUH(Ka)series-120626.
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