IBU(Ka) Series

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

High Grade Single & Multi-Channel UpConverter Products;

IBU1970	L-Band (950-1450MHz) to Ka-Band (19.70-20.20GHz)
IBU2750	L-Band (950-1950MHz) to Ka-Band (27.50-28.50GHz)
IBU2830	L-Band (950-1750MHz) to Ka-Band (28.30-29.10GHz)
IBU2850	L-Band (950-1950MHz) to Ka-Band (28.50-29.50GHz)
IBU2900	L-Band (950-1950MHz) to Ka-Band (29.00-30.00GHz)
IBU2960	L-Band (950-1550MHz) to Ka-Band (29.60-30.20GHz)
IBU3100	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
- 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: 2nd 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	5×10^{-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	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)
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)*

PEAK COMMUNICATIONS

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