IBDH(Ka) Series

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

High Grade Single-Range Down Converter Products;

IBDH1770	Ka-Band (17.70-18.70GHz) to L-Band (950-1950MHz)
IBDH1820	Ka-Band (18.20-19.20GHz) to L-Band (950-1950MHz)
IBDH1870	Ka-Band (18.70-19.70GHz) to L-Band (950-1950MHz)
IBDH1890	Ka-Band (18.90-19.60GHz) to L-Band (950-1650MHz)
IBDH1920	Ka-Band (19.20-20.20GHz) to L-Band (950-1950MHz)
IBDH1950	Ka-Band (19.50-20.20GHz) to L-Band (950-1650MHz)
IBDH1970	Ka-Band (19.70-20.20GHz) to L-Band (950-1450MHz)
IBDH2020	Ka-Band (20.20-21.20GHz) to L-Band (950-1950MHz)
IBDH2140	Ka-Band (21.40-22.00GHz) to L-Band (950-1550MHz)
IBDH2950	Ka-Band (29.50-30.00GHz) to L-Band (950-1450MHz)

High Grade Multi-Range Down Converter Products;

IBDH4005, 5b Ka-Band (17.70-21.20GHz) to L-Band (950-1950MHz max.) 4 ranges

For other 'non-standard' frequency requirements or multi-channel units, please contact the factory.
For equivalent lower cost BDC units without the full user interface please see IBD(Ka) series datasheet.
For equivalent remote mount units, please see PBD(Ka) series datasheet.

The 19-inch 1U rack mounted **IBDH(Ka) series** of block frequency down converter units from Peak Communications are designed to take the incoming SHF signal and produce an output at L-Band that is suitable for direct connection to an L-band demodulator or for further conversion typically by a **P7001** synthesised down converter.

The **IBDH(Ka) series** of units are mains powered and are constructed of high grade components to give the ultimate performance.

For redundancy the **IBDH(Ka)** uses a simple CANBUS® interface and has an integral redundancy controller for 1+1 & 2+1 operation (for use with external **R1000HH(Ka)**, **R2000HH(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.

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
- Electronically variable attenuator option for both local & remote control of gain
- Integral 1+1 & 2+1 CANBUS® redundancy control & N+1 switch systems available
- L-Band monitor and fibre optic L-Band interface options available
- Available in dual, triple & quad-channel versions

IBDH(Ka) Series - Typical Specification

SHF Input

Frequency

IBDH1770	17.7-18.7GHz
IBDH1820	18.2-19.2GHz
IBDH1870	18.7-19.7GHz
IBDH1890	18.9-19.6GHz
IBDH1920	19.2-20.2GHz
IBDH1950	19.5-20.2GHz
IBDH1970	19.7-20.2GHz
IBDH2020	20.2-21.2GHz
IBDH2140	21.4-22.0GHz
IBDH2950	29.5-30.0GHz
IBDH4005	17.7-21.1GHz, with the following internal ranges; 17.7-18.2, 18.2-19.2, 19.2-20.2 & 20.2-21.2GHz
IBDH4005b	17.7-21.1GHz, with the following internal ranges; 17.7-18.7, 18.7-19.7, 19.7-20.2 & 20.2-21.2GHz

Connector K-Type (f), 50 Ω or 2.92mm (f)

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

Return loss >14dB

RF input power -20dBm max

L-Band Output

Frequency 950 up to 2000MHz, depending on model

Connector SMA (f), 50Ω

Option 1b; N-Type (f), 50Ω

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

Return loss >15dB

1dB GCP +8dBm

Transfer Characteristics

Conversion gain 30dB ±1dB at band centre

Gain stability ±1dB over temperature range

Gain flatness ±1dB full band (±1.5dB for bandwidths ≥800MHz)
±0.5dB across any 40MHz in-band

Noise figure 7dB max

Electronically Variable L-Band Attenuation (Option 10)

Attenuation range 30dB nominal

Step size

Option 10a; 0.5dB

Option 10b; 0.1dB

Control Local & remote

Typical RF Performance

LO phase noise (typical with good phase noise ext. 10MHz ref)
-35dBc/Hz at 10Hz
-70dBc/Hz at 100Hz
-90dBc/Hz at 1kHz
-95dBc/Hz at 10kHz
-100dBc/Hz at 100kHz
-115dBc/Hz at 1MHz

Spurious <-65dBm (in-band non-carrier related)
<-60dBc (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

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

External Reference Input (with automatic detection)

Frequency 10MHz (5MHz factory settable)

Connector 50Ω, BNC (f)

Level 0dBm ±5dB

Required phase noise to be better than 50dBc/Hz of output phase noise

Locking delay <5 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^{0}C

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^{0}C

Mechanical

Width 19" standard rack mountable

Height 1U (1.75")

Depth ~400mm (15.7"), plus

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

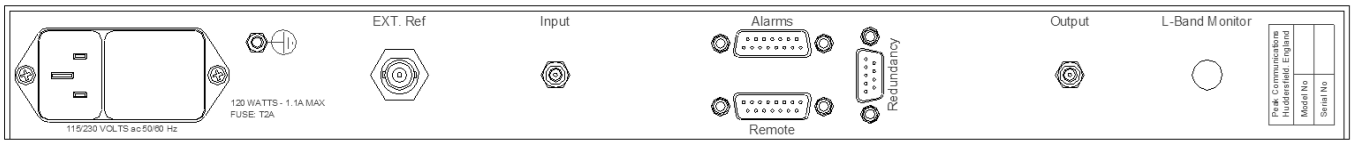
Alarms LO lock failure
PSU failure

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

Notes; 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. IBDH(Ka)series-070322.
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