DBU200(Ka)

Dual, ‘Hot-swap’, Ka-Band Block Converter with optional 1+1 Redundancy

The 19-inch 1U rack mounted **DBU200(Ka)** chassis unit is designed to accept any mix of two of the converter modules shown below. Modules can be inserted/ replaced in the **DBU200(Ka)** unit from the rear without the need to remove power or disturb the other channel in any way.

The **DBU200(Ka)** chassis units are mains powered (redundant power supplies as standard) and are constructed of high-grade components to give the ultimate stability, ripple and phase noise performance.

The **DBU200(Ka)** unit is available with optional integral 1+1 redundancy switching and control for use when two identical modules are used.

The unit has a highly stable internal reference source and will automatically detect and lock to an external 10MHz signal, when applied.

High Grade Converter Modules;

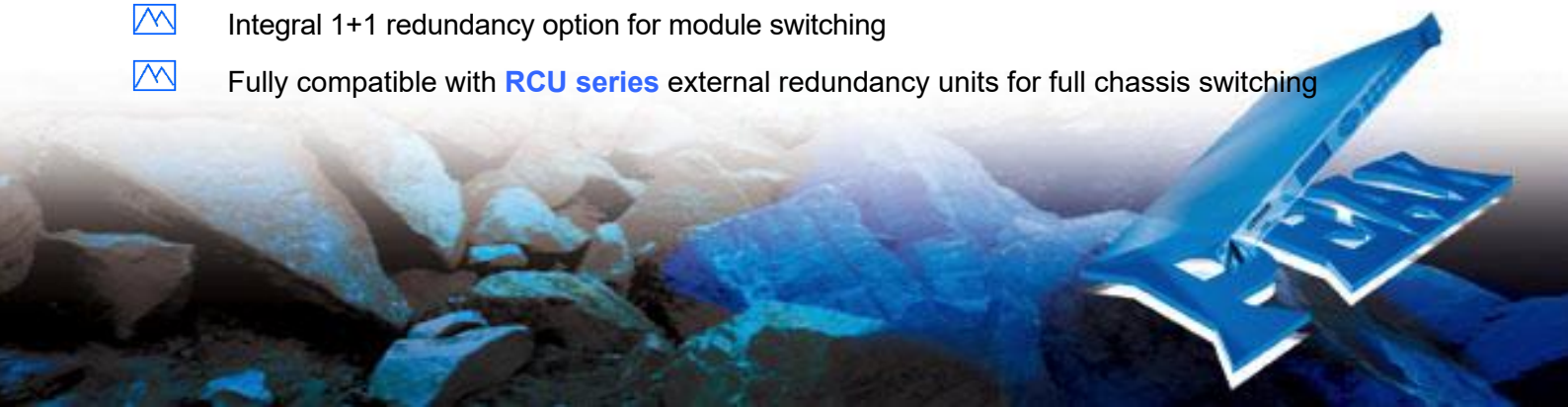
BUC Module	L-Band input	Ka-Band Output (GHz)
MBU1970	950-1450	19.7-20.2 (Rx)
MBU2750	950-1950	27.5-28.5
MBU2830	950-1750	28.3-29.1
MBU2850	950-1950	28.5-29.5
MBU2900	950-1950	29.0-30.0
MBU2960	950-1550	29.6-30.2
MBU3100	950-1950	30.0-31.0

If the converter module that you require is not shown, please contact us with your frequency requirements and we will be pleased to consider adding it to our range.

BDC Module	Ka-Band input (GHz)	L-Band out (MHz)
Standard Rx band coverage		
MBD1770	17.7-18.7	950-1950
MBD1820	18.2-19.2	950-1950
MBD1870	18.7-19.7	950-1950
MBD1890	18.9-19.6	950-1650
MBD1920	19.2-20.2	950-1950
MBD1950	19.5-20.2	950-1650
MBD1970	19.7-20.2	950-1450
MBD2020	20.2-21.2	950-1950
MBD2140	21.4-22.0	950-1550
Tx band coverage for ground test & ranging applications (consult factory with any specific filtering requirements);		
MBD2750	27.5-28.5	950-1950
MBD2830	28.3-29.1	950-1750
MBD2850	28.5-29.5	950-1950
MBD2900	29.0-30.0	950-1950
MBD2950	29.5-30.0	950-1450
MBD3100	30.0-31.0	950-1950

Peak Features

- High stability, low ripple and excellent phase noise
- 10MHz external reference fitted as standard with automatic internal reference back-up
- Full Alarm monitoring
- Redundant power supplies with dual mains input
- Integral 1+1 redundancy option for module switching
- Fully compatible with **RCU series** external redundancy units for full chassis switching



DBU200(Ka) Chassis - Typical Specification

External Reference Input (with automatic detection)

Frequency	10MHz (5MHz factory settable)
Level	0dBm ±5dB
Connector	BNC (f), 50Ω
Locking delay	<2 min to stabilise from cold

Internal Back-up Reference Stability

Allan deviation	5 x 10^{-11} over 1s
Ageing	<5 x 10^{-9} per day, <5 x 10^{-7} per year
Temp stability	<5 x 10^{-8} over 0 to 50^{0}C

Mechanical

Width	19" standard rack mountable
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 (2off in redundant configuration)

Voltage	90-264VAC
Option 10;	48VDC
Frequency	47-63Hz
Total power	50 Watts max.

Control System Interface

Local interface	Front panel key switches (for option 6b)
Remote control	RS232/ RS485 port
Option 9;	Ethernet; embedded web server & SNMP network management support.
Alarms	LO lock failure
	PSU failure
	Amplifier failure

Integral 1+1 'Module' Redundancy (Option 6b)

Switch type	Rated to 31GHz
Switching speed	<150ms from fault to switch completion
Switch isolation	>50dB typical input to output
Option 13;	'chassis mute' facility with 70dB isolation
RF cables	Includes high grade rear panel links.

Notes: The connection to the internal redundancy circuitry is made via RF links on the rear panel, this allows for by-pass wiring should the need arise. High grade co-axial linking cables are provided.

DBU200(Ka) Options

6b) Integral 1+1 redundancy module switching
9) Ethernet interface with embedded web server & SNMP, replaces RS232/485 port
10) 48VDC prime power supply
13) Output 'chassis mute' facility (only available with option 6b)

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

MBU/MBD Modules - Typical Specification

SHF Interface

Connector	K-Type (f), 50Ω or 2.92mm (f)
Return loss	18dB

L-Band Interface

Connector	SMA (f), 50Ω
Option 1b;	N-Type (f), 50Ω
Return loss	18dB

Transfer Characteristics (MBU)

Conversion gain	17dB ±1dB at band centre
1dB output GCP	+8dBm
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

Transfer Characteristics (MBD)

Conversion gain	30dB ±1dB at band centre
RF input power	-20dBm max
1dB output GCP	+8dBm
Gain stability	±1dB from 0 to 50°C
Gain flatness	±1dB full band (±1.5dB for bandwidths ≥800MHz)
	±0.5dB across any 40MHz in-band

RF Performance

LO Phase noise (typ. with good phase noise ext. ref.)

offset	MBU	MBD
@10Hz	-45dBc/Hz	-35dBc/Hz
@100Hz	-65dBc/Hz	-70dBc/Hz
@1kHz	-95dBc/Hz	-90dBc/Hz
@10kHz	-100dBc/Hz	-95dBc/Hz
@100kHz	-100dBc/Hz	-100dBc/Hz
@1MHz	-115dBc/Hz	-115dBc/Hz

Spurious (MBU)	<-70dBm (in band non-carrier related)
	<-65dBc (in band carrier related)
Spurious (MBD)	<-65dBm (in band non-carrier related)
	<-60dBc (in band carrier related)

Note: 2nd harmonic of IF (2xIF) at -50dBc@0dBm output, if in-band

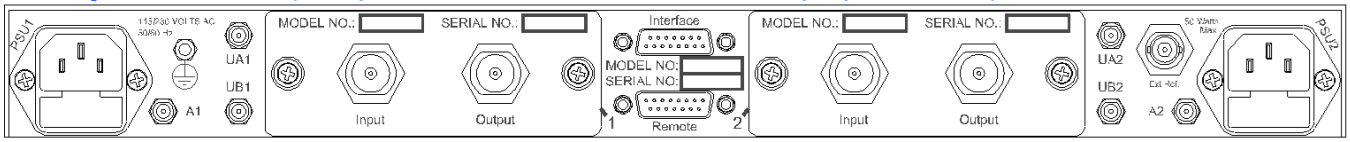
LO leakage	-70dBm (always out of band)
3rd order intercept	>+18dBm (standard unit)

MBU/MBD Options

1b) N-Type L-Band connector

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

Rear panel view (sample, shown with 1+1 redundancy option fitted)



PEAK COMMUNICATIONS

Peak Communications reserves the right to alter the specifications of this equipment without prior notice. DBU200(Ka)-120626.
Peak Communications Ltd., Unit 1, The Woodvale Centre, Woodvale Road, Brighouse, West Yorkshire, HD6 4AB, U.K.
Tel; +44 (0)1484 714200 email; sales@peakcom.co.uk web; www.peakcom.co.uk