DBUH200

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

The 19-inch 1RU rack mounted **DBUH200** chassis unit is designed to accept any mix of two of the converter modules shown below. Modules can be inserted/ replaced in the **DBUH200** unit from the rear without the need to remove power or disturb the other channel in any way.

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 **DBUH200** 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 **DBUH200** 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 (MHz)	SHF output (GHz)
MBUH600	950-1525	5.85-6.425 (C)
MBUH665	950-1750	5.85-6.65 (extended C)
MBUH6725	950-1825	5.85-6.725 (super extended C)
MBUH7025	950-1275	6.70-7.025 (INSAT C)
MBUH7025B	950-1250	6.725-7.025 (INSAT C)
MBUH710	950-1350	6.70-7.10 (INSAT C)
MBUH790	950-1450	7.90-8.40 (X)
MBUH1275	950-1700	12.75-13.50 (low Ku)
MBUH1275B	950-1950	12.75-13.75 (low Ku)
MBUH130	950-1700	13.00-13.75 (low Ku)
MBUH137	950-1700	13.75-14.50 (extended Ku)
MBUH140	950-1450	14.00-14.50 (Ku)
MBUH145	950-1250	14.50-14.80 (high Ku)
MBUH148	950-2000	13.75-14.80 (wide Ku)
MBUH180	950-1750	17.30-18.10 (DBS)
MBUH184	950-2050	17.30-18.40 (extended DBS)

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

BDC Module	SHF input (GHz)	L-Band out (MHz)
Standard Rx band coverage		
MBDH420	3.40-4.20 (C)	1750-950*
MBDH450	4.50-4.80 (INDSAT C)	950-1250
MBDH725	7.25-7.75 (X)	950-1450
MBDH1070	10.70-11.70 (low Ku)	950-1950
MBDH1095	10.95-11.70 (low Ku)	950-1700
MBDH1120	11.20-11.70 (mid Ku)	950-1450
MBDH1145	11.45-12.20 (mid Ku)	950-1700
MBDH1170	11.70-12.20 (mid Ku)	950-1450
MBDH1171	11.70-12.75 (high Ku)	950-2000
MBDH1225	12.25-12.75 (high Ku)	950-1450
* Inverted output spectrum		
Tx band coverage for ground test & ranging applications		
MBDH600	5.850-6.425 (C)	950-1525
MBDH665	5.85-6.65 (extended C)	950-1750
MBDH6725	5.85-6.725 (extended C)	950-1825
MBDH7025	6.70-7.025 (INSAT C)	950-1275
MBDH7025B	6.725-7.025 (INSAT C)	950-1250
MBDH790	7.9-8.4 (X)	950-1450
MBDH1275	12.75-13.75 (low Ku)	950-1950
MBDH140	14.0-14.5 (Ku-Band)	950-1450
MBDH137	13.75-14.50 (extended Ku)	950-1700
MBDH148	13.75-14.80 (extended Ku)	950-2000
MBDH180	17.30-18.10 (DBS)	950-1750
MBDH184	17.30-18.40 (Full DBS)	950-2050

Peak Features

- 10MHz external reference fitted as standard with automatic internal reference back-up
- High stability, low ripple and excellent phase noise
- Supports variable attenuator and ‘chassis mute’ options
- Integral 1+1 redundancy option for module switching
- Redundant power supplies with dual mains input
- Full alarm monitoring

DBUH200 Chassis - Typical Specification

External Reference Input (with automatic detection)

Frequency	10MHz (5MHz factory settable)
Level	0dBm ±5dB
Connector	50Ω, BNC (f)
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 mount
Height	1U (1.75")
Depth	568mm (22.4"), plus connectors
Construction	Aluminium chassis
Weight	Approx. 9kgs (20lbs)

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	Graphics display & keypad
Remote control	RS232/ 485 port
Option 9;	Ethernet; embedded web server & SNMP network management support
Alarms	PSU fail, Amplifier current detection

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

Connections	SMA (f), 50Ω
Switch type	Rated to 18GHz
Switching speed	<150ms (from fault to switch completion)
Switch isolation	>60dB input to output
Option 13;	'chassis mute' facility with 80dB isolation
RF cables	Includes high grade rear panel links

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

DBUH Options

6) 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 6)

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

MBUH/MBDH Modules - Typical Specification

SHF Interface

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

L-Band Interface

Connector	50Ω, SMA (f)
Option 1b;	50Ω, N-Type (f)
Return loss	>15dB

Transfer Characteristics

Conversion gain	30dB ±1dB at band centre (MBD) 17dB ±1dB at band centre (MBU)
Option 4;	27dB ±1dB at band centre (MBU)
Option 4b;	40dB ±1dB at band centre (MBD)
Option 7a;	Adjustment; 30dB range, 0.5dB steps (L-Band only)
RF input power	-25dBm max (MBD)
Output 1dB GCP	+8dBm
Option 5;	+18dBm (MBU)
Gain stability	±0.5dB from 0 to 40°C
Gain flatness	±1dB full band (±1.5dB if bandwidth >800MHz) ±0.5dB across any 40MHz in band

RF Performance

Note: For MBU180, MBU184 spurious, harmonic and LO leakage performance please consult the factory.

LO phase noise (typical with good phase noise ext. 10MHz ref.)	-55dBc/Hz at 10Hz -75dBc/Hz at 100Hz -92dBc/Hz at 1kHz -100dBc/Hz at 10kHz -105dBc/Hz at 100kHz -125dBc/Hz at 1MHz

Note: See table below for band specific typical performance (BUC only).

Spurious	<-80dBm (in band non-carrier related) <-75dBc (in band carrier related)

Note: C-Band BDC ranges specified as <-65dBc at input -40dBm.

3rd order intercept	>+18dBm (standard unit)
LO leakage	<-80dBm (always out of band)

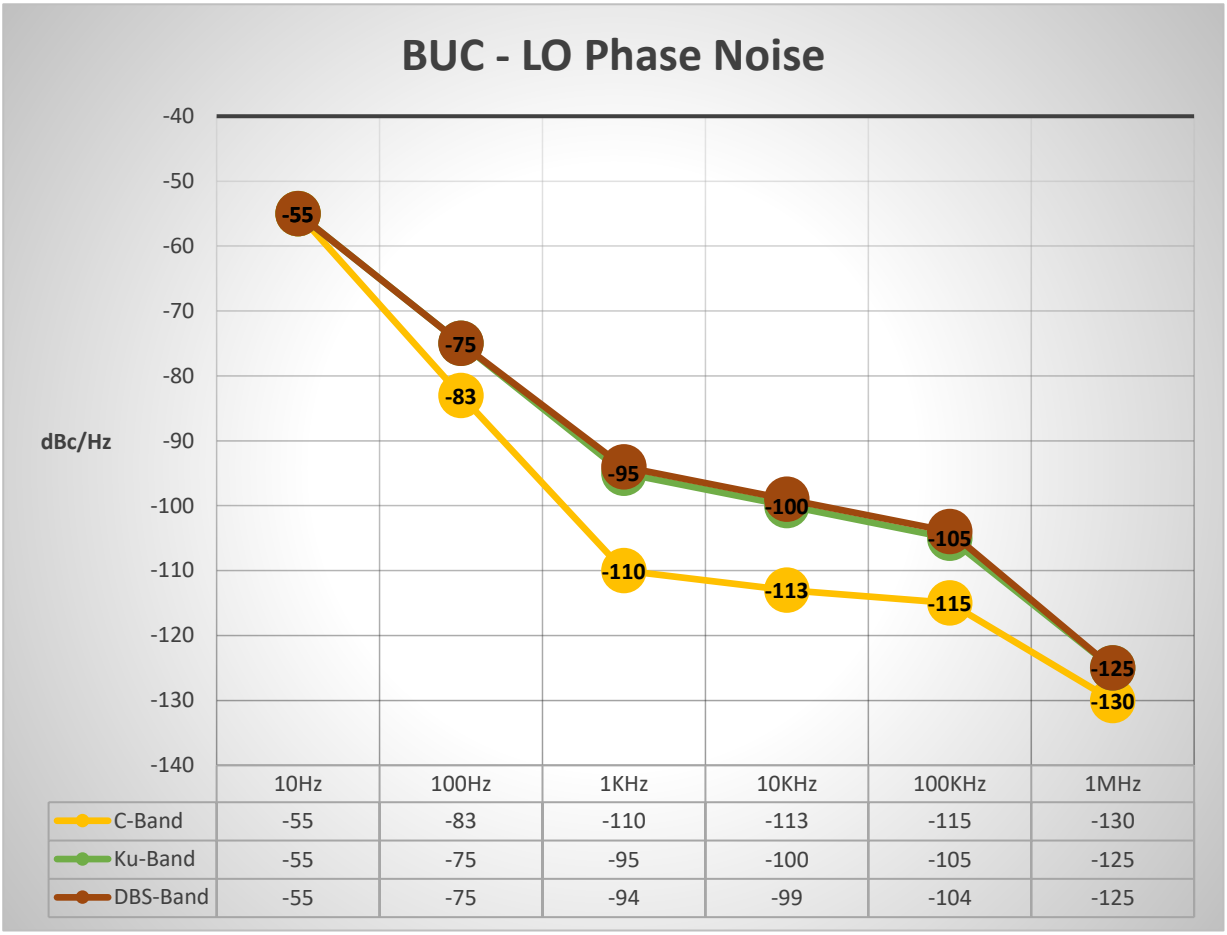
Monitor Ports (Option 2)

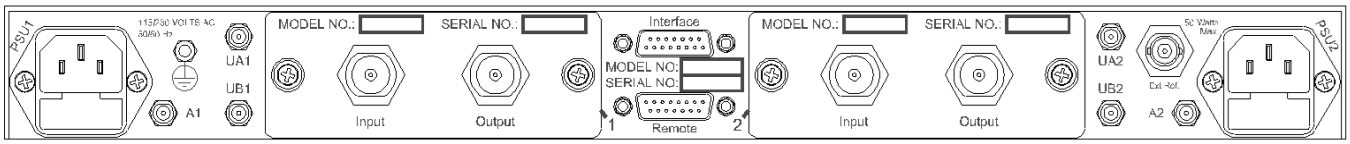
Option 2a;	L-Band monitor
Option 2c;	SHF monitor
Connector	SMA (f), 50Ω, on rear panel
Level	-20dBc ±3dB

MBUH/ MBDH Options

1a) N-Type SHF connector
1b) N-Type L-Band connector
2a) -20dBc L-Band monitor on rear panel
2c) -20dBc SHF monitor on rear panel
4) MBU 10dB increase in gain
4b) MBD 10dB increase in gain
5) MBU 1dB GCP increase to +18dBm (includes extra 10dB gain option)
7a) Variable attenuation, 30dB range, 0.5dB steps, L-Band

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



	10Hz	100Hz	1KHz	10KHz	100KHz	1MHz
C-Band	-55	-83	-110	-113	-115	-130
Ku-Band	-55	-75	-95	-100	-105	-125
DBS-Band	-55	-75	-94	-99	-104	-125

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