

PBD(B) Series

Multi-Range, Remote Mount, Block DownConverters



High Grade Block DownConverter Products;

PBD2000	Ku-Band (10.95-12.75GHz) to L-Band (950-2000MHz max), 2 range.
PBD2001	Ku-Band (10.70-12.75GHz) to L-Band (950-2000MHz max), 2 range.
PBD3000-2	Ku-Band (10.95-11.70+12.25-12.75GHz) to L-Band (950-1700MHz max), 2 range.

For other non-standard frequency requirements, please contact the factory.
For single-range Block DownConverters please see PBD(A) series datasheet.
For equivalent rack mount units, please see IBD(B) & IBDH(B) series datasheets.

The remote mounted **PBD(B) series** of Multi-range Block Frequency DownConverter 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 DownConverter.







The **PBD(B) series** of units are DC powered and are constructed of high grade components to give the ultimate performance. They utilise Externally Phase Locked Dielectric Resonator Oscillators (XPDRos) and are far superior in stability and phase noise to Voltage Controlled Oscillators (VCOs), as commonly used in other BUC designs.

These Multi-range converters are offered with internal range switching and a single input and output connection. Range selection is performed via remote control.

For control, the unit incorporates a serial communications interface as standard and an optional Ethernet interface that supports control from a web-page or SNMP network management system. The **FPC100** is also offered which is a standard 19" rack mount control unit that can interface with up to three **PBD(B)** units plus the 1+1 or 2+1 redundancy systems.

For redundancy, the **PBD(B)** uses a simple CANBUS® interface and has an integral redundancy controller for 1+1 & 2+1 operation (for use with external **R1000HR**, **R2000HR** switch units).

Peak Features

-  High stability, low ripple and excellent phase noise, using PDRO technology
-  10MHz External Reference option fitted as standard with automatic internal reference back-up
-  Full Alarm monitoring
-  Integral 1+1 & 2+1 CANBUS® redundancy control & external switch units available
-  Full remote control including optional Ethernet with embedded web server and SNMP NMS
-  Compact weatherproof design



PBD(B) series - Typical Specification

SHF Input

Frequency	
PBD2000	10.95-11.70, 11.70-12.75GHz
PBD2001	10.70-11.75, 11.70-12.75GHz
PBD3000-2	10.95-11.70, 12.25-12.75GHz
Connector	N-Type (f), 50Ohms
Return loss	>18dB

L-Band Output

Frequency	950-1700 or 950-2000MHz, dependent upon model
Spectrum Sense	Non inverting
Connector	N-Type (f), 50Ohms
Return loss	>15dB
1dB GCP	+8dBm

Transfer Characteristics

Conversion gain	30dB \pm 1dB at band centre
Gain stability	\pm 0.5dB from 0 to 50°C
Gain flatness	\pm 1dB across each sub-band (\pm 1.5dB if bandwidth >800MHz) \pm 1.5dB across full Ku-band \pm 0.5dB across any 40MHz in band.
LO Frequency	dependant on model

Typical RF Performance

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 -107dBc/Hz at 100kHz -125dBc/Hz at 1MHz
Harmonics Spurious	Better than -50dBc <-80dBm (in band non-carrier related) <-75dBc (in band carrier related)
3rd Order Intercept	>+18dBm
LO leakage	<-80dBm (always out of band)



Connector panel view (sample)

External Reference Input

Frequency	10MHz
Connection	50Ω, TNC(f)
Level	0dBm \pm 3dB
Required phase noise	Better than 50dBc/Hz of output Phase Noise
Locking delay	<2 minutes to stabilise from cold

Internal back-up reference

Stability	<1 x 10 ⁻¹⁰ per second
Temp. Stability	< \pm 5 x 10 ⁻⁸ (0 to +50°C)
Ageing	< \pm 5 x 10 ⁻⁹ per day

Mechanical

Dimensions	290 x 230 x 95mm (11.4 x 9.1 x 3.7inch)
Construction	Diecast Aluminium, Weatherproof
Weight	Approx. 4kgs (9lbs)

Environmental

Operating temp.	-10°C to +50°C (less Solar gain)
EMC	EN55022 part B & EN50082-1
Safety	EN60950

Power supply

Voltage	36VDC
Power	35 Watts max.
Connection	circular weatherproof (mating part supplied)
Option 4a;	DC input via the L-Band interface.
Option 4b;	DC input via the L-Band interface as well as wired to the power/alarms connector.

Control System

Alarms	Summary failure relay (form C).
Remote Control	RS232/ 485 port. Ethernet option; Embedded web server & SNMP network management support (option 9).
Redundancy	CANBUS® interface & in-built 1+1 & 2+1 controller.
'Local' Range Switching (Option 3)	Local interface for discrete signal control of range switching.

Options

- 3) Local interface providing discrete signal control of range switching.
- 4a) DC input feed via the L-Band interface.
- 4b) DC input feed via the L-Band interface, as well as wired to the 5-pin 'alarms' connector.
- 9) Ethernet interface with embedded web server & SNMP.

Notes; Other 'PBD' options do not apply to these products.
The addition of Options can modify the typical specification, for details please consult the factory.

