

PBU(A) Series

Single-Range, Remote Mounted Block UpConverters



The **PBU(A) Series** remote mounted, Block UpConverter units from Peak Communications are designed to be fully compatible with a wide range of L-Band modulators and frequency converters. This high grade range of **PBU** outdoor units will accept the L-band output of a **P7000 Series UpConverter** or modem and provide the frequency conversion to SHF bands.

The **PBU(A) Series** 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.







The unit will automatically detect when an external 10MHz locking signal is applied, alternatively the unit will automatically switch to the stable internal 10MHz reference signal.

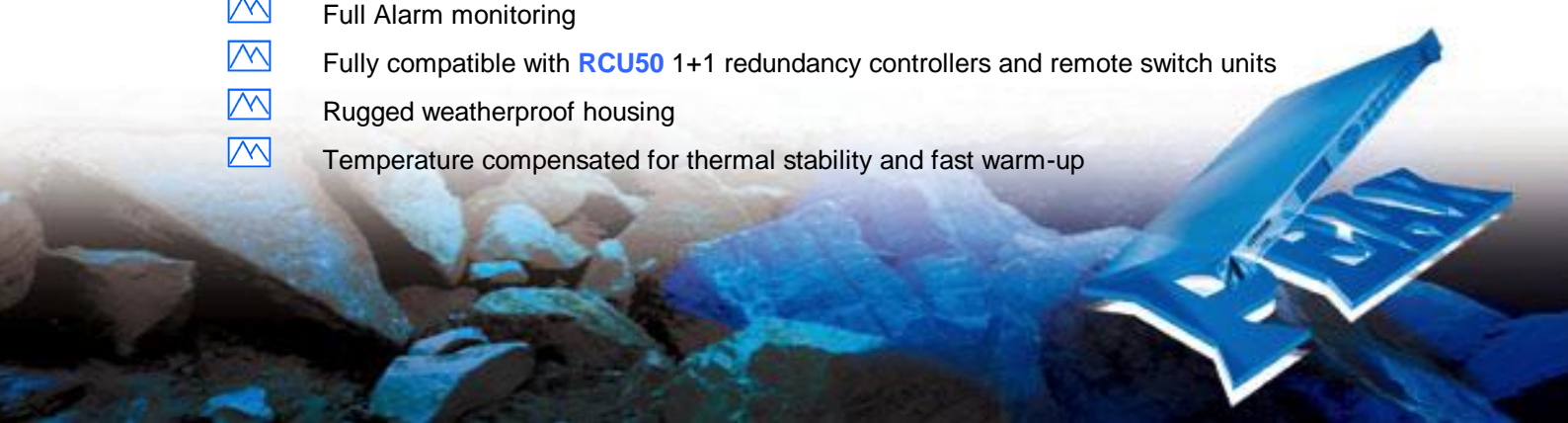
High Grade UpConverter units;

PBU600	C-Band (5.85-6.425GHz)
PBU665	Extended C-Band (5.85-6.65GHz)
PBU6725	Super Extended C-Band (5.85-6.725GHz)
PBU7025	INSAT C-Band (6.70-7.025GHz)
PBU710	INSAT C-Band (6.70-7.10GHz)
PBU790	X-Band (7.90-8.40GHz)
PBU1275	Ku-Band (12.75-13.50GHz)
PBU130	Ku-Band (13.00-13.75GHz)
PBU137	Ku-Band (13.75-14.50GHz)
PBU140	Ku-Band (14.00-14.50GHz)
PBU180	DBS-Band (17.30-18.10GHz)
PBU184	DBS-Band (17.30-18.40GHz)

For other non-standard frequency requirements, please contact the factory.
 For multi-range Block UpConverters please see PBU(B) series datasheet.
 For equivalent rack mount units, please see IBU(A) & IBUH(A) series datasheets.

Peak Features

-  Automatic Internal and External Reference locking
-  High stability, low ripple and excellent phase noise, using PDRO technology
-  Full Alarm monitoring
-  Fully compatible with **RCU50** 1+1 redundancy controllers and remote switch units
-  Rugged weatherproof housing
-  Temperature compensated for thermal stability and fast warm-up



PBU(A) series – Typical Specification

SHF Output

Frequency	
PBU600	5.85-6.425GHz
PBU665	5.85-6.65GHz
PBU6725	5.85-6.725GHz
PBU7025	6.70-7.025GHz
PBU710	6.70-7.10GHz
PBU790	7.90-8.40GHz
PBU1275	12.75-13.5GHz
PBU130	13.0-13.75GHz
PBU137	13.75-14.5GHz
PBU140	14.0-14.5GHz
PBU180	17.3-18.1GHz
PBU184	17.3-18.4GHz
Connection	N-type (f), 50Ω
Return loss	>18dB
1dB GCP	+8dBm

L-Band Input

Frequency	
PBU600	950-1525MHz
PBU665	950-1750MHz
PBU6725	950-1825MHz
PBU7025	950-1275MHz
PBU710	950-1350MHz
PBU790	950-1450MHz
PBU1275	950-1700MHz
PBU130	950-1700MHz
PBU137	950-1700MHz
PBU140	950-1450MHz
PBU180	950-1750MHz
PBU184	950-2050MHz
Connector	N-type (f), 50Ω
Return loss	>15dB

RF Performance

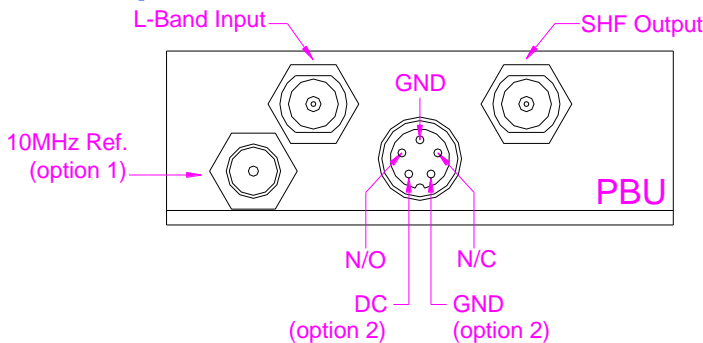
Note: for PBU180, PBU184 phase noise & spurious performance please consult the factory.

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

Transfer Characteristics

Conversion gain	17dB ±1dB at band centre
Gain stability	±0.5dB from 0 to 40°C (-0.026dB per +°C)
Gain flatness	±1dB full band (±1.5dB for PBU184) ±0.5dB across any 40MHz in band

Connector panel view



External Reference Input

Frequency	10MHz
Connection	Fed in on L-band cable separate TNC (f), 50Ω input
Option 1;	
Level	0dBm ±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	<±5 x 10 ⁻⁸ (0 to +60°C)
Ageing	<±5 x 10 ⁻⁹ per day

Mechanical

Width	123mm (4.85")
Height	172mm (6.8"), plus connections & mounting flanges
Depth	48mm (1.89")
Construction	Die-cast Aluminium, IP66 rated
Weight	1.4kgs (3lbs) approx

Environmental

Operating temp	-25°C to +70°C
EMC	EN 55022 part B & EN 50082-1
Safety	EN 60950

Power Supply

Voltage	+16.5 to +35VDC
Current	500mA max (PBU180); 600mA max)
Connection	Fed in on L-band cable
Option 2a;	Fed in on 5-pin control interface connection.
Option 2b;	Fed in on the 5-pin control interface connection as well as the L-Band cable)

Control Interface

Alarms	Summary alarm contacts
Option 5;	Removal of 'Ext Ref lock' alarm
Note;	External reference 'lock' alarm is included in the summary alarm as standard, this can be removed if an external reference is not being provided
Option 7;	Bi- coloured LED for '10MHz lock' and 'DC power' status indication
Connection	5-pin circular weatherproof (mating part supplied)

Options

- 1) Separate external 10MHz reference input (using a TNC connector), replacing the L-band feed system.
- 2a) DC input connection wired to 5-pin control interface connector, replacing the L-band feed system.
- 2b) DC input connection wired to the 5-pin 'alarms' connector, as well as the standard DC feed system via the L-Band cable.
- 5) Removal of Ext. Ref. 'lock' alarm from summary alarm.
- 7) Bi-coloured Ext. Ref. 'lock' and 'DC power' status indication



Peak Communications reserves the right to alter the specifications of this equipment without prior notice. PBU(A)series-250112.

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