Installation and Operating Handbook

PBU2000 Block Up Converter
Cover Options: 10a, 11

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Preface

The Peak Communications PBU2000 Installation and Operating Handbook provides information on installation and use of the PBU2000 unit.

This manual is of a technical nature and is intended for technicians, engineers and service personal.

The main body of the manual takes the user through the unit and its uses. The appendices include, generic overall dimensioning information (with mounting).

Customer Care

Contact the Peak Communications support department for:

- Product operation, application support or training requests

- Information for returning or upgrading a product

- Comments or suggestions on any supplied literature

Contact Information:

<div align="center">

Peak Communications Ltd.
Unit 1, The Woodvale Centre
Woodvale Road
Brighouse
West Yorkshire
HD6 4AB
England

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Tel.: +44 (0) 1484 714200   E-mail *support@peakcom.co.uk*
Fax.: +44 (0) 1484 723666   Via our website *www.peakcom.co.uk*

To return a Peak Communications product for repair:

1. Contact the Peak Communications support department and request a Return Material Authorisation (RMA) number.

2. You will be required to provide to our support representative the model number, serial number and a detailed description of the problem.

3. To prevent any damage to the product during shipment we recommend that the unit is returned in its original packaging or if this is not available the packaging used must be of an equal standard.

4. Return the product back to Peak Communications and advise shipment details to sales representative for tracking purposes. (Any shipping charges should be prepaid)

Product Compliance

Safety

To ensure safety of the operator the PBU2000 series of units have been designed to comply with the following safety standard;

EN 60950: Safety of information technology equipment, including electrical business machines.

Operation of the equipment in a non standard manner will invalidate compliance to this standard. The equipment MUST BE OPERATED WITH ITS LID ON AT ALL TIMES. If it is necessary to remove the lid for any purpose then it is essential that the lid is fitted back correctly before normal operation.

DEPENDANT UPON UNIT TYPE, DANGEROUS VOLTAGES MAY BE PRESENT AROUND THE POWER SUPPLY AND PRECAUTIONS MUST BE TAKEN.

THE EQUIPMENT IS MEANT TO BE OPERATED BY TRAINED PERSONNEL ONLY.

EMC

The PBU2000 units have been designed to comply with the following standards;

Emissions

EN 55022 Class B: Limits and methods of measurement of radio interference characteristics of Information Technology Equipment.

Immunity

EN 50082 Part 1: Generic immunity standard, part 1: Domestic, commercial and light industrial environment.

Damage to the chassis, controls or interfaces will invalidate compliance; please contact the factory under these circumstances for advice on continued operation. Interfaces to the PBU2000 series of units must be made with suitably screened connectors and double screened coaxial cable. Data cables must be double screened.

Section 1

Unit Description

The PBU2000 incorporates two fixed block up conversion stages along with microprocessor control and monitoring of internal functions. Switching between the bands is accomplished via. one of the interfaces. If option 11 is supplied, then both band outputs are available simultaneously.

Remote control is available from the front panel connections, RS232/RS485 and ethernet, as well as via the local wired interface. The internal oscillator is fed from an internal reference, which can also be locked to an externally provided 10MHz reference frequency to ensure the system is stable and the changeover from one PBU2000 converter to another, minimises traffic interruption.

1.1 Specification

Please refer to the PBU2000 datasheet for the current standard performance, or contact technical support for specific technical enquiries.

1.2 Chassis

The unit is housed in a sealed die cast aluminium box. See Appendix A for the dimensions details.

1.3 Mounting

The unit comes with two mounting options:

Flat surface
Two small brackets are supplied for fixing of the unit to a flat surface. The brackets need to be screwed to the unit's underside in the appropriate place.

Pole
A kit to mount the unit to a circular pole is supplied.

See Appendix A for details.

1.4 Connections

Figure 1.1 shows a connector view.

Breather
Immersion proof breather.

Fuse
The main DC power supply fuse, bulkhead mounting 20mm x 5mm 2 Amp removable by turning.

Power / Remote / Alarms
16 Way male circular on the chassis with connections as shown in table 1.2. The cable must be rated to cope with 2 Amp continuous use. The alarm contacts are from a dry contact relay, the ratings of which are shown in table 1.3
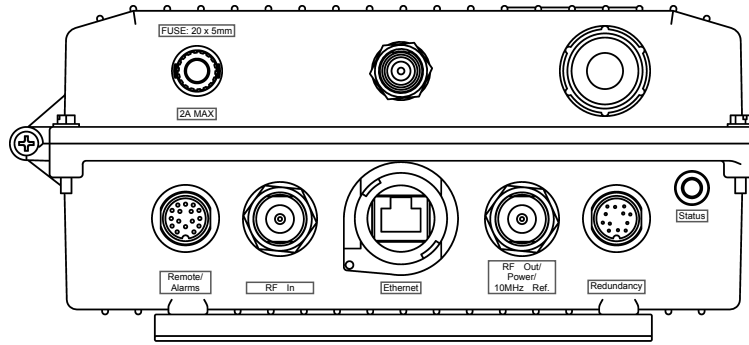
Figure 1.1: Connector view

The wired interface pins allow simple band selection of the PBU2000 by shorting the wired interface pins to Ground table 1.5 shows the pin requirements for the selectable bands.

Redundancy

12 Way circular connector on the chassis with connections as shown in table 1.4. The 'Ethernet reset' pin, when shorted to Ground will flash the main unit LED for $\approx$ 5 seconds, after this time the unit will restart with the static Ethernet IP settings as shown in table 1.1.

⚠ Note that the ethernet reset pins must not be connected to any pin other than ground or permanent damage will occur.

Table 1.1: Ethernet reset settings

Parameter	Setting
IP address	192.168.0.2
Subnet Mask	255.255.255.000
Gateway	192.168.0.1

Ethernet

Sealed RJ45 connector, the cover of which must remain in place to keep the IP rating when not in use.

RF In

N-Type connector.

RF Out

N-Type connector.

EXT. Ref

TNC connector, input at 10MHz $\pm$ 3dBm.

Peak Communications Ltd.   **PBU2000**

Table 1.2: Power / Remote / Alarms pinout
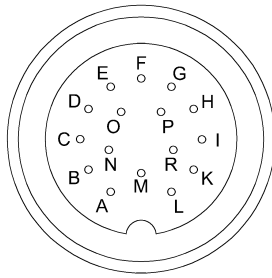
16 Way male circular

Pin Number	Function
A	Chassis Ground
B	RS232 Rx
C	RS232 Tx
D	RS485 Tx +
E	RS485 Tx -
F	RS485 Rx -
G	RS485 Rx +
H	Wired interface 1
I	Wired interface 2
K	Wired interface enable
L	Not used
M	Alarm N/C
N	Alarm common
O	Alarm N/O
P	Chassis Ground
R	DC supply (+27V to +36V DC)

Table 1.4: Redundancy pinout
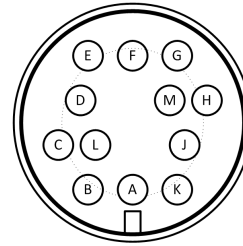
12 Way circular connector

Pin Number	Function
A	CAN Bus™ low
B	Ground
C	Power A
D	Power B
E	Ground
F	CAN Bus™ high
G	Tellback A
H	Tellback B
J	Not used
K	Not used
L	Not used
M	Ethernet reset

Table 1.3: Relay ratings

Parameter	Rating
Switch voltage (max.)	100V
Switch current (max.)	0.5A
Switch power (max.)	10W
Contact resistance	0.2Ω
Operate / release	0.5mS

Table 1.5: Wired interface control

Wired interface enable	Wired interface 1	Wired interface 2	Band selected
Open circuit	Short to Ground or Open circuit	Short to Ground or Open circuit	Previously selected or remotely set
Short to Ground	Open circuit	Open circuit	Band 1
Short to Ground	Open circuit	Short to Ground	Band 1
Short to Ground	Short to Ground	Open circuit	Band 2
Short to Ground	Short to Ground	Short to Ground	Band 2

1.5   Status LED

The status LED, shows the status of the PBU2000 unit. Table 1.6 shows the different LED colours and their associated status meaning.

Table 1.6: Status LED

Colour	Status
Amber	OK and Offline
Green	OK and Online
Red	Summary alarm

Section 2

Operation

Customer supplied DC at +27V to +36V DC is internally fused to 2 Amp and internally re-regulated to supply required voltages to the RF and supervisory circuitry. A form C summary alarm connection is available for monitoring the PBU2000 unit via an M&C system.

Attach the feed wire carrying the RF signal to the socket marked 'RF In'. Output of the unit is a N-Type socket marked 'RF Out'. Check out all cables for shorts before connecting and ensure the connections are weatherproofed. DC must not be introduced to the RF input or output connectors.

The selection of the internal band is done via one of the enabled interfaces.

Care must be taken when starting the units from cold, as sufficient time must be allowed for the OCXO to stabilise before introducing an external reference. A suggested, suitable, time is 5 minutes from cold, if this warm up period is not allowed for, alarms can occur.

Section 3

Redundancy

This section gives a basic overview of the redundancy system with regards to this PBU2000 unit.

The PBU2000 unit interface with the Peak CAN bus™ redundancy system for 1 for 1, 1 for 2 and 1 for N redundancy systems.

3.1   1 for 1 Redundancy

For 1 for 1 switched redundant operation, a pair of PBU2000 units are required along with an T1000HR(Ka) (or equivalent) for redundancy applications. In use, the redundancy type on the PBU2000 units is set to 1 for 1, one unit is set to identifier 'A' and the other to identifier 'B'. The T1000HR(Ka) units are connected to the PBU2000 'redundancy' connectors with the supplied cables, the units will self detect and automatically set one unit to online and the other to standby / offline.

When an alarm is detected in the online unit, the this will result in the configuration of the online unit being adopted by the standby and then the standby will be switched to the RF path, becoming the online unit.

The standby unit can be made to go online by the changeover option via one of the remote interfaces.

3.2   1 for 2 Redundancy

For 2 for 1 switched redundant operation a trio of PBU2000 units are required along with an T2000HR(Ka) (or equivalent) for redundancy applications. In use, the redundancy type on the PBU2000 units is set to 2+1, one unit is set to identifier 'A', the second to identifier 'B' and the third to 'Standby'. The T2000HR(Ka) units are connected to the 'redundancy' connectors with the supplied cables and the units self detect. A changeover will be caused by an alarm detected in an online unit or changeover, via a remote interface has been initiated, this will result in the configuration of the online unit being adopted by the standby unit and then the standby will be switched to the RF path, becoming an online unit. Priority can be set on paths A and B, so that if there is a second failure the higher priority path will remain operational, if both units are set to priority 1 then this function will be ignored. A larger priority number equates to a higher priority.

3.3   1 for N Redundancy

For 3+1 to 8+1 switched redundant operation the RCU1000 series of redundancy units are available (see appropriate data sheet for specification).

Section 4

Remote Control

This section describes the various ways it is possible to monitor and control the PBU2000 unit.

4.1   Serial Communications RS232 / RS485

The PBU2000 unit is capable of being controlled remotely using the P7xxx protocol format as described in section 4.2, through the RS232 / 485 connection, the baudrate of which is variable and is setup via one of the remote control interfaces.

4.2 P7xxx Protocol

The PBU2000 transmits and receives data serially in an asynchronous format using the ASCII character set (includes the extended ASCII set). The serial data consists of message frames composed of the following message characters:

STX, number of bytes, unit address, instruction number, message body, checksum, ETX.

All characters are compulsory except for the message body. The presence of a message body is determined by the message type (instruction number). The total number of message characters in a message frame may range from a minimum of 6 to a maximum of 255. All messages to and from the unit follow the protocol, as described in table 4.1, with a character format of 8 data bits, one stop bit, no parity, baud rate selectable. Note that all numeric values are shown as decimal unless otherwise stated.

Table 4.1: P7xxx protocol

Message byte no.	Set value / example	Length (bytes)	Description
1	02	1	STX Start of message character #02
2	n	1	Number of bytes Character defining how many characters are in the message including the STX & ETX parts
3	32	1	Unit address Address ranges from character 001 to 255 (decimal)
4	21	1	Instruction number Used to specify the type of message to or from the unit
...	. . .	...	Message body This is an optional set of data that is used in conjunction with the instruction type. It can be 0 bytes in length upwards, all subject to the instruction number
n-1	?	1	Checksum The checksum is used to verify the accuracy of the message frame. The checksum is defined as the summation of all the bytes in the message, beginning with the 3rd byte (Unit address) and extending through the body of the message, ending with the last byte before the checksum. The total of the bytes is then ANDed with 255 so that the checksum is truncated to a single byte
n	03	1	ETX End of transmission character #03

4.2.1 Device

This group of remote messages allow the user to monitor and control the various modifiable parts for the PBU2000 unit. In order for the unit to accept changes made via the remote control it must be placed in REMOTE mode.

   If the unit doesn't have any band attenuation options fitted, then the attenuation sections in these messages are missing.

Table 4.2: Device instruction list

To unit	From unit	Description
20		Device status request
	21	Device status response
22		Device change request

4.2.1.1   Instruction 20 (Device status request)

Table 4.3: Device status request message format (instruction 20)

Message byte no.	Set value / example	Length (bytes)	Description
1	02	1	STX
2	7	1	Number of bytes
3	32	1	Unit address
4	20	1	Instruction number
5	'B'	1	Block up converter
6	?	1	Checksum
7	03	1	ETX

4.2.1.2 Instruction 21 (Device status response)

Table 4.4: Device status response message format (instruction 21)

Message byte no.	Set value / example	Length (bytes)	Description
1	02	1	STX
2	17	1	Number of bytes
3	32	1	Unit address
4	21	1	Instruction number
5	'B'	1	Block up converter
6	'+115 = 11.5dB'	4	Band 1 / Main attenuation in 0.1dB steps. Attenuator only capable of 0.5dB steps.
10	'+115 = 11.5dB'	4	Band 2 attenuation in 0.1dB steps. Attenuator only capable of 0.5dB steps.
14	'1'	1	The actual band of the unit: '1' - Band 1 '2' - Band 2 '?' - Unknown band, due to failed coaxial switch
15	'1'	1	The wanted band of the unit: '1' - Band 1 '2' - Band 2 This shows the wanted band of the unit, under normal conditions this will be the same as the actual band.
16	?	1	Checksum
17	03	1	ETX

4.2.1.3 Instruction 22 (Device change request)

Table 4.5: Device change request message format (instruction 22)

Message byte no.	Set value / example	Length (bytes)	Description
1	02	1	STX
2	16	1	Number of bytes
3	32	1	Unit address
4	22	1	Instruction number
5	'B'	1	Block up converter
6	'+115 = 11.5dB'	4	Band 1 Attenuation in 0.1dB steps. Attenuator only capable of 0.5dB steps.
10	'+115 = 11.5dB'	4	Band 2 Attenuation in 0.1dB steps. Attenuator only capable of 0.5dB steps.
14	'1'	1	The wanted band of the unit: '1' - Band 1 '2' - Band 2
15	?	1	Checksum
16	03	1	ETX

4.2.2   Remote / Local

This message allows the user to change between remote / local modes on the PBU2000. When in local mode all statuses can be asked for from the unit, however the unit must be in remote mode to allow configuration changes to be accepted.

Table 4.6: Remote / local instruction list

To unit	From unit	Description
24		Remote / local change request

4.2.2.1 Instruction 24 (Remote / Local Change Request)

Table 4.7: Remote / Local Change Request message format (instruction 24)

Message byte no.	Set value / example	Length (bytes)	Description
1	02	1	STX
2	7	1	Number of bytes
3	32	1	Unit address
4	24	1	Instruction number
5	'R'	1	Remote / local mode 'R' = Remote 'L' = Local
6	?	1	Checksum
7	03	1	ETX

4.2.3 Unit

This group of remote messages allow the user to monitor the unit/main status part of the PBU2000 unit.

Table 4.8: Unit instruction list

To unit	From unit	Description
40		Unit status request
	41	Unit status response

4.2.3.1 Instruction 40 (Unit status request)

Table 4.9: Unit status request message format (instruction 40)

Message byte no.	Set value / example	Length (bytes)	Description
1	02	1	STX
2	6	1	Number of bytes
3	32	1	Unit address
4	40	1	Instruction number
5	?	1	Checksum
6	03	1	ETX

4.2.3.2 Instruction 41 (Unit status request response)

Table 4.10: Unit status request response message format (instruction 41)

Message byte no.	Set value / example	Length (bytes)	Description
1	`02`	1	STX
2	`68`	1	Number of bytes
3	`32`	1	Unit address
4	`41`	1	Instruction number
5	`'PBU2000'`	27	Type of unit this is: PBU2000
32	`'01234'`	5	Serial number
37	`'0112.34'`	7	Software version number
44	`'0'`	1	Summary alarm '0' = Ok '1' = Fault
45	`'0'`	1	PLO 1 fault '0' = Ok '1' = Fault
46	`'0'`	1	PLO 2 fault '0' = Ok '1' = Fault
47	`'OK'`	17	OK string, says whether the unit is OK or NOT OK
64	`'1'`	1	1:1 status '0' = Offline '1' = Online
65	`'1'`	1	Remote mode '0' = Local '1' = Remote
66	`'0'`	1	External reference On/Off '0' = Off '1' = On
67	?	1	Checksum
68	`03`	1	ETX

4.2.4   Redundancy

This group of remote messages allow the user to monitor and control the redundancy parts of the PBU2000 unit. Not all the PBU2000 unit's redundancy parameters are changeable via the remote control as they are too hardware/setup related for it to be of any use to do so. Unlike some other configuration messages, the unit does not have to be in remote mode for these messages to take affect.

Table 4.11: Redundancy instruction list

To unit	From unit	Description
45		Redundancy status request
	46	Redundancy status response
47		Redundancy change request

4.2.4.1 Instruction 45 (Redundancy status request)

Table 4.12: Redundancy status request message format (instruction 45)

Message byte no.	Set value / example	Length (bytes)	Description
1	02	1	STX
2	6	1	Number of bytes
3	32	1	Unit address
4	45	1	Instruction number
5	?	1	Checksum
6	03	1	ETX

4.2.4.2 Instruction 46 (Redundancy status response)

Table 4.13: Redundancy status response message format (instruction 46)

Message byte no.	Set value / example	Length (bytes)	Description
1	02	1	STX
2	13	1	Number of bytes
3	32	1	Unit address
4	46	1	Instruction number
5	'1'	1	Redundancy type configuration '1' = 1:1 '2' = 1:2 'N' = 1:n
6	'M'	1	Redundancy mode 'M' = Manual 'A' = Auto
7	'0'	1	Online status '0' = Offline '1' = Online
8	'A'	1	Unit identifier 'A' or 'B' when in 1:1 configuration 'A', 'B' or 'S' when in 1:2 configuration 'A' .. 'H' or 'S' when in 1:n configuration
9	'1'	1	Unit priority 'X' when in 1 for 1 configuration or if units are selected as standby '1' or '2' when in 1 for 2 configuration '1' .. '8' when in 1 for n configuration
10	'A'	1	Unit online 'A' or 'B' when in 1 for 1 configuration 'A' or 'B' or 'S' when in 1 for 2 configuration and the unit selected as standby otherwise 'X' '@' means no redundant controller attached, unit online not known.
11	'1'	1	Coax switch position '1' or '2', '0' means no redundant controller attached, position not known. Used for 1:1 and 1:2 configurations, irrelevant in 1 for N configuration
12	?	1	Checksum
13	03	1	ETX

4.2.4.3 Instruction 47 (Redundancy change request)

When a unit is in a 1 for 1 configuration all the parameters can be modified apart from the unit priority, however the 'unit to go online' parameter can only be modified when in manual mode and it is being changed on the currently offline unit.

When a unit is in a 1 for 2 configuration if the unit is selected as standby, then all the parameters can be modified apart from the unit priority. However, if the unit is selected as either A or B, then only the priority can be changed for that particular unit.

Table 4.14: Redundancy change request message format (instruction 47)

Message byte no.	Set value / example	Length (bytes)	Description
1	02	1	STX
2	9	1	Number of bytes
3	32	1	Unit address
4	47	1	Instruction number
5	'M'	1	Redundancy mode 'M' = Manual 'A' = Auto
6	'A'	1	Unit to go online 'A' or 'B' when in 1 for 1 configuration 'A' or 'B' or 'S' when in 1 for 2 configuration N/A when in 1 for n configuration
7	'1'	1	Unit priority 'X' when in 1 for 1 configuration or if units are selected as standby '1' or '2' when in 1 for 2 configuration '1' .. '8' when in 1 for n configuration
8	?	1	Checksum
9	03	1	ETX

4.2.5 Serial Communications Settings

Due to the lack of a front panel on the PBU2000 series of converters it is possible to change their address, baudrate and whether they use RS232 or RS485 communications via a serial message. The PBU2000 will change its serial configuration only if all the settings are valid in the message.

Table 4.15: Serial communications settings instruction list

To unit	From unit	Description
26		Serial communications settings change request

4.2.5.1   Instruction 26 (Serial Communications Settings Change Request)

Table 4.16: Serial Communications Settings Change Request message format (instruction 26)

Message byte no.	Set value / example	Length (bytes)	Description
1	02	1	STX
2	9	1	Number of bytes
3	32	1	Unit address
4	26	1	Instruction number
5	'2'	1	RS232/RS485 selection '2' = RS232 '4' = RS485
6	43	1	Address Valid character range is 1 to 255(incl.)
7	'5'	1	Baudrate '1' = 300 '2' = 1200 '3' = 2400 '4' = 4800 '5' = 9600 '6' = 19200
8	?	1	Checksum
9	03	1	ETX

4.2.6   Ethernet Settings

This group of remote messages allow the user to monitor and control the ethernet settings of the PBU2000 unit. Unlike most other messages these messages consist of a Instruction and a subInstruction. The unit also does not have to be in remote mode for these messages to take affect. Care should be taken when using these messages as it is possible to put the unit in a state that one wasn't necessarily expecting.

Table 4.17: Ethernet Settings instruction list

To unit	From unit	Description
4 - '1'		Ethernet settings status request
	5 - '1'	Ethernet settings status response
	6 - '1'	Ethernet settings change request

4.2.6.1 Instruction 4, Sub Instruction '1' (Ethernet Status Request)

Table 4.18: Ethernet Status Request message format (instruction 4, sub instruction '1')

Message byte no.	Set value / example	Length (bytes)	Description
1	02	1	STX
2	7	1	Number of bytes
3	32	1	Unit address
4	4	1	Instruction number
5	'1'	1	Sub instruction
6	?	1	Checksum
7	03	1	ETX

4.2.6.2 Instruction 5, Sub Instruction '1' (Ethernet Status Response)

Table 4.19: Ethernet Status Response message format (instruction 5, sub instruction '1')

Message byte no.	Set value / example	Length (bytes)	Description
1	02	1	STX
2	74	1	Number of bytes
3	32	1	Unit address
4	5	1	Instruction number
5	'1'	1	Sub instruction
6	'1'	1	DHCP '0' = Disabled '1' = Enabled
7	'_'	1	Separator character
8	'192.168.000.025'	15	IPv4 address
23	'_'	1	Separator character
24	'255.255.255.000'	15	Subnet mask
39	'_'	1	Separator character
40	'192.168.000.010'	15	Gateway mask
55	'_'	1	Separator character
56	'1'	1	SNMP '0' = Disabled '1' = Enabled
57	'_'	1	Separator character
58	'192.168.000.032'	15	SNMP trap address
73	?	1	Checksum
74	03	1	ETX

4.2.6.3 Instruction 6, Sub Instruction '1' (Ethernet Change Request)

This message is sent to the unit, when the host computer wishes to change the Ethernet settings of the PBU2000 unit. The unit does not need to be in remote mode for this to be achieved.

Table 4.20: Ethernet Change Request message format (instruction 6, sub instruction '1')

Message byte no.	Set value / example	Length (bytes)	Description
1	02	1	STX
2	74	1	Number of bytes
3	32	1	Unit address
4	6	1	Instruction number
5	'1'	1	Sub instruction
6	'1'	1	DHCP '0' = Disabled '1' = Enabled
7	'_'	1	Separator character
8	'192.168.000.025'	15	IPv4 address
23	'_'	1	Separator character
24	'255.255.255.000'	15	Subnet mask
39	'_'	1	Separator character
40	'192.168.000.010'	15	Gateway mask
55	'_'	1	Separator character
56	'1'	1	SNMP '0' = Disabled '1' = Enabled
57	'_'	1	Separator character
58	'192.168.000.032'	15	SNMP trap address
73	?	1	Checksum
74	03	1	ETX

4.2.7 TCP Port Settings

This group of remote messages allow the user to monitor and control the TCP port settings of the PBU2000 unit. Unlike most other messages these messages consist of a Instruction and a subInstruction. The unit also does not have to be in remote mode for these messages to take affect. Care should be taken when using these messages as it is possible to put the unit in a state that one wasn't necessarily expecting.

Table 4.21: TCP Port Settings instruction list

To unit	From unit	Description
4 - '2'		TCP port settings status request
	5 - '2'	TCP port settings status response
	6 - '2'	TCP port settings change request

4.2.7.1   Instruction 4, Sub Instruction '2' (TCP Port Status Request)

Table 4.22: TCP Port Status Request message format (instruction 4, sub instruction '2')

Message byte no.	Set value / example	Length (bytes)	Description
1	02	1	STX
2	7	1	Number of bytes
3	32	1	Unit address
4	4	1	Instruction number
5	'2'	1	Sub instruction
6	?	1	Checksum
7	03	1	ETX

4.2.7.2 Instruction 5, Sub Instruction '2' (TCP Port Status Response)

Table 4.23: TCP Port Status Response message format (instruction 5, sub instruction '2')

Message byte no.	Set value / example	Length (bytes)	Description
1	02	1	STX
2	18	1	Number of bytes
3	32	1	Unit address
4	5	1	Instruction number
5	'2'	1	Sub instruction
6	'04000'	5	TCP port number
11	'.'	1	Separator character
12	'00010'	5	TCP socket timeout in seconds
17	?	1	Checksum
18	03	1	ETX

4.2.7.3   Instruction 6, Sub Instruction '2' (TCP Port Change Request)

This message is sent to the unit, when the host computer wishes to change the TCP Port settings of the PBU2000 unit. The unit does not need to be in remote mode for this to be achieved.

Table 4.24: TCP Port Change Request message format (instruction 6, sub instruction '2')

Message byte no.	Set value / example	Length (bytes)	Description
1	02	1	STX
2	18	1	Number of bytes
3	32	1	Unit address
4	6	1	Instruction number
5	'2'	1	Sub instruction
6	'04000'	5	TCP port number
11	'.'	1	Separator character
12	'00010'	5	TCP socket timeout in seconds
17	?	1	Checksum
18	03	1	ETX

4.3   Ethernet

If the PBU2000 unit has been fitted with the Ethernet option the unit can be controlled via its in built web server, TCP or SNMP.

Due to a lack of front panel on these units, it is not possible to display the IP address and other Ethernet settings to the user easily. In order to discover the IP address and other Ethernet settings, initially only, the ethernet discovery windows programme needs to be run. This software is available from the Peak Communications website. When run it lists the units on the network, and allows the user to view and modify, if necessary, the Ethernet settings to suit the user's network, see figure 4.1.
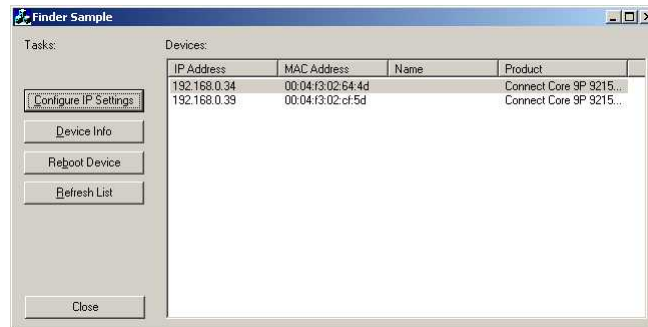

Figure 4.1: Ethernet discovery

The 'Configure IP Settings' button brings up the window as shown in figure 4.2. This allows the changing of the Ethernet settings, the password is "PEAKpass123", it is case sensitive.

> ⚠ The PBU2000 units do leave the factory in DHCP mode, as such they need to be setup via a DHCP network. If this isn't available then it is possible to force the unit onto a static IP address, see the Ethernet Reset pin's details on page 2.
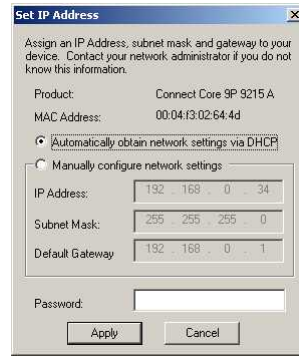
Figure 4.2: Configure IP settings window

4.3.1 Webserver

The webpage used to control the PBU2000 unit is essentially split into two screens, Status and Configure. Each one accessible via the links part way down the screen. The webpage is displayed by entering the PBU2000 unit's IP address into a normal web browser. Figure 4.3 shows a typical web page view, note this may not represent this particular unit.
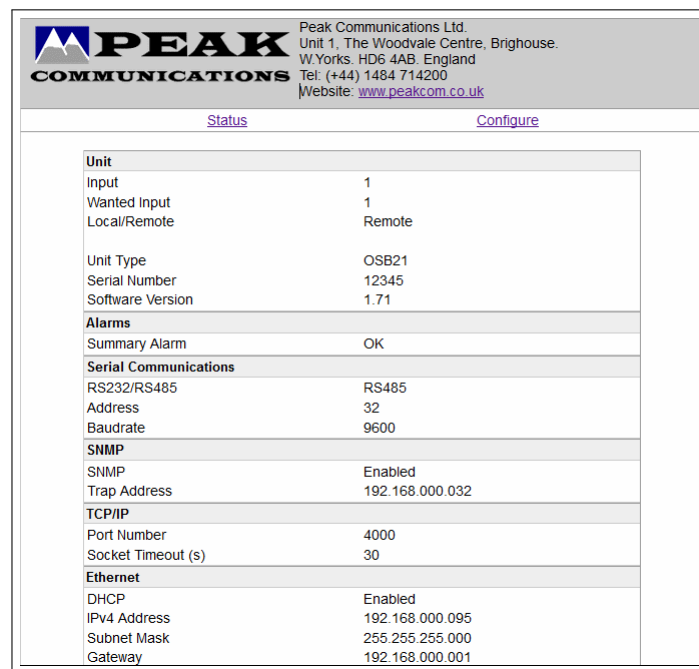

Figure 4.3: Typical webpage status screen

4.3.2 TCP

The PBU2000 unit can be controlled via TCP, this involves sending the normal RS232 / 485 commands to the unit through a TCP port. The TCP port to be used is set by the user via one of the remote control interfaces. The remote control protocol that can be used with the unit is shown in section 4.2.

4.3.3 SNMP

The PBU2000 units can be controlled via SNMP via the built-in SNMP (Simple Network Management Protocol) agent software. It supports SNMP Trap, RFC1155, 1157, 1212, 1213, 1901 & 1906, as well as the Peak MIBS. The MIBS necessary for this are available from the Peak Communications website. Please refer to the Peak-Agents.MIB file, as this shows which of the MIBS available are used for this PBU2000 unit.

Appendix A

Mounting Drawings

POLE MOUNTING KIT (SUPPLIED)
FOR Ø1 ¾" POLE

7.00

POLE MOUNTING HOLES

306.00
286.00

20.00

R3.00

52.00
112.00
227.00 MAX

MAX CONNECTOR LENGTH 25.00

105.00 MAX

ALL DIMENSION IN MM