

# LanBand Quickstart Guide V3.2

© 2012 Patapsco Designs Ltd



Patapsco is now a Transition Networks company.

Patapsco has recently been acquired by Communications Systems, Inc. (CSI) and is now a part of Transition Networks, Inc., a subsidiary of CSI. The high-quality, reliable Transition Networks' brand of products is now combined with the world class portfolio of telecommunications and data communications products from Patapsco Communications.

You can be assured that the same quality and support from both organizations will continue. Please contact either Transition Networks or Patapsco Communications for sales, support and product information.

**Patapsco Communications**  
The Passfield Oak, Passfield, Near Liphook,  
Hampshire  
GU30 7RL UK

**Tel:** +44 (0) 1428 752900  
**Fax:** +44 (0) 1428 752901  
**Email:** [info@patapsco.co.uk](mailto:info@patapsco.co.uk)  
**Web Site:** [www.patapsco.co.uk](http://www.patapsco.co.uk)

**Transition Networks**  
10900 Red Circle Drive  
Minnetonka  
MN 55343 USA

**Tel:** 952- 941-7600 or 1-800-526-9267  
**Fax:** 952-941-2322  
**Email:** [info@transition.com](mailto:info@transition.com)  
**Web Site:** [www.transition.com](http://www.transition.com)

All rights reserved. No parts of this work may be reproduced in any form or by any means - graphic, electronic, or mechanical, including photocopying, recording, taping, or information storage and retrieval systems - without the written permission of the publisher.

Products that are referred to in this document may be either trademarks and/or registered trademarks of the respective owners. The publisher and the author make no claim to these trademarks.

While every precaution has been taken in the preparation of this document, the publisher and the author assume no responsibility for errors or omissions, or for damages resulting from the use of information contained in this document or from the use of programs and source code that may accompany it. In no event shall the publisher and the author be liable for any loss of profit or any other commercial damage caused or alleged to have been caused directly or indirectly by this document.

Printed: March 2012 in UK

# Table of Contents

<b>1. Introduction</b>	<b>3</b>
1.1 Transition Networks - Patapsco.....	3
1.2 Safety warnings.....	3
<b>2. Getting Started</b>	<b>3</b>
2.1 Rack Mounting Instructions.....	4
2.2 Accessories.....	4
2.3 Optional Accessories.....	4
2.4 Making Connections.....	5
2.5 Installing DbManager.....	5
<b>3. Configuring LanBand</b>	<b>5</b>
3.1 Connecting to LanBand.....	6
3.2 Notes on configuring LanBand.....	7
3.3 Device Settings.....	7
3.4 Clock Sources.....	7
3.5 PRI Ports.....	8
3.6 BRI Ports.....	8
3.7 Configuring Routing Profiles.....	8
3.8 Link Configuration.....	10
3.9 Using Groups.....	10
3.10 Finishing Configuration.....	10
3.11 More Resources.....	11

# 1. Introduction

This document is a basic guide for configuring a new Patapsco LanBand. A full User Manual for configuring all settings on the unit is supplied on the DbManager Installation Disk. Patapsco offers an optional Pre-Configuration Service and optional Telephone Support Agreements at minimal cost. Information on these options can be found in the Support document on the DbManager installation disk.

## 1.1. Transition Networks - Patapsco

Patapsco LanBand products allow the delivery of synchronous ISDN services across Local Area Networks. The product range covers both ISDN PRI and BRI applications. ISDN Voice, data and video services are managed and delivered across a LAN with connection to outside PSTN services.

## 1.2. Safety warnings



**Caution:** Danger of electric shock. The device may be connected to mains voltages. Switch to power-off state before working on the device.



**Caution:** Danger of electrostatic discharge. Electronic components are sensitive to electrostatic discharges that might damage the device. Protect the device from electrostatic discharges by wearing an electrostatic wristband.



**Caution:** Interruption of data transmission. Data transmission will be interrupted during any work on the transmission line and/or deactivation of the power supply. Make sure that that any work will only be carried out on inactive lines (without data transmission) or during quiet times to reduce interference to live systems.



**Caution:** Danger of damage to devices or service interruption. Access by unauthorized third persons may cause damage to devices and/or interrupt services. Make sure that subracks are only installed in lockable locations.



**Caution:** Danger of overvoltage. During faults, dangerous unprotected voltages may be present. Ensure sufficient grounding of the housings, i.e. by connecting the grounding contact.






- Safety requirements are not fulfilled unless this equipment is connected to a wall socket outlet with a protective earth (PE) contact.
- The power cord used to connect this equipment must be HAR marked and fitted with an IEC320 connector and an ASTA approved moulded plug.
- There are no user serviceable parts in this equipment. All servicing and repair tasks must be undertaken by qualified service personnel.
- Isolation from mains power is achieved by the removal of the main power cord.

# 2. Getting Started

This section will describe how to make the physical connections between LanBand and the other system devices, and install the Patapsco management application, DbManager.

## 2.1. Rack Mounting Instructions

The Rack Mounting Kit is comprised of the following:

Photo	Description	Quantity
	<b>L-Bracket</b>	<b>2</b>
	<b>Long Patapsco case screw</b>	<b>4</b>
	<b>Cage Nut</b>	<b>4</b>
	<b>washer</b>	<b>4</b>
	<b>Rack Mount Screw</b>	<b>4</b>

All Patapsco units can be mounted in a standard 19" rack housing. To allow units to fit into a 19" rack, a Rack Mounting Kit must be purchased for the unit (s). There are various rack mounting options depending on the size of the unit ordered. The following guide will explain how to use the Rack Mounting Kit with Patapsco units.

1. Remove the four short screws near the front or rear panel on the left and right hand sides of the Patapsco unit. The unit can be mounted with the front panel facing forward or with the ports facing forward as required.
2. Fit one of the **L-Brackets** to the side of the unit. The four small fixing holes allow the unit to protrude forward or sit further back depending on the desired position of the unit. The bracket may also face forwards or backwards depending on the desired position of the unit.
3. Fix the **L-Bracket** in place using the **Long Patapsco case screws**.
4. Fix the second **L-Bracket** to the other side of the case in the same way.
5. Put the **Rack Mount screws** through the **Rack Mount washers**.
6. Offer the unit up to the rack and fix it in place using the **Rack Mount Screws** and **Rack Mount cage nuts**.

## 2.2. Accessories

The following accessories are supplied with all Patapsco units:

Item	Description			
DbManager CD	Installable DbManager application, technical documents and manuals			
Controller Cable	Management cable. Connects to LanBand's Terminal port	Cable Spec		
		RJ12		DB9S
		<b>Pin</b>	<b>Function</b>	<b>Pin</b>
		1	Rx	3
		2	Tx	2
		3	Gnd	5
IEC Mains Cable	Connects LanBand to the mains supply			

## 2.3. Optional Accessories

The following items can be ordered from Patapsco, or will be supplied with some units depending on the nature of the device.

- ISDN Cables -** Cables to connect the Patapsco device to a CPE or network. Please see the full manual for cable specs on all Patapsco cables
- Rack Mounting Kit -** All Patapsco units can be mounted in a 19" rack using this kit

## 2.4. Making Connections

First, connect the ISDN cables to LanBand followed by the Terminal Port management cable (if required), LAN Port cable and lastly the Mains cable. If the unit has a DC power supply connection, use the screw terminals to connect the DC power source.



**Warning:** The -48VDC power terminals are marked **0V**, **-48V**, and **GND**. Patapsco -48VDC products are designed for use with negative voltage DC supplies, and therefore expect the positive voltage to be connected to the **0V** terminal, and the negative connected to **-48V**. Please be sure about the polarity of this connection before connecting power to the terminals. Units which have a positive +24VDC power source will be marked **+24VDC**, **0V** and **GND** respectively. Please ensure that the positive connection is made on the **+24VDC** terminal.

## 2.5. Installing DbManager

DbManager is required in order to monitor and manage Patapsco devices. Management can be made using the Terminal (serial) port, or using TCP/IP over a LAN or WAN. DbManager is installed using the CD provided with Patapsco equipment.

1. Insert the DbManager Installation Disk into the drive of the PC which will be used for management of LanBand.
2. InstallShield Wizard will start up. Follow the steps to install DbManager.
3. Serial Number – Enter the Serial Number on the case of the DbMgr Disk.



**Info:** DbManager is supplied as a 'Lite' version by default. This allows configuration and monitoring of devices, but only allows configuration of a single device node and a single user account. To use DbManager in 'Lite' mode, do not enter a serial number during installation. Please see the full DbManager User Manual for more information on configuring and using DbManager.



**Warning:** If an older version of DbManager is already installed on the management PC, it is necessary to update to the version supplied on the new DbManager CD. This can be done by consulting the 'Upgrade' folder on the DbManager CD. The 'readme.txt' file explains how to upgrade to the new DbManager without reinstalling the program.

## 3. Configuring LanBand

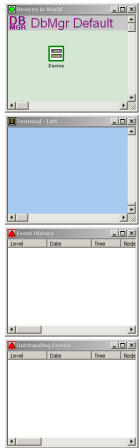
Follow these steps to connect to LanBand with DbManager and configure the unit for use.

Configuration of LanBand is carried out by setting up DbManager to make a management connection, and then setting up the elements of LanBand in this order:

<b>Device Settings</b> -	The unit-specific settings of the LanBand such as the <b>IP Address</b> and <b>Identifier</b>
<b>Clock Sources</b> -	configure which interface LanBand is to take synchronisation clock from or network, or recovered clock from another LanBand
<b>ISDN Ports</b> -	Each ISDN port can be individually configured with the correct settings to interface with another device or network
<b>Link Configuration</b> -	Configure settings to carry ISDN channels across a PSN between LanBand units
<b>Call Routing</b> -	Configure routes for the traffic LanBand will pass between connected devices and networks

## 3.1. Connecting to LanBand

1. Start up the DbManager Application
2. Login as **Super User** (no password required)
3. Four windows will be displayed:



### Map

A network map showing Nodes and Links between Patapsco devices

### Terminal

A view of the communications between DbMgr and LanBand

### Event History

All events which occur while connected to LanBand

### Outstanding Events

Current events

4. Select **View** → **Properties** → **Terminal** from the DbMgr toolbar.
5. Choose the COM port which is in use. Leave the **Serial Port Rate** at the default setting of 19200bps. Click **OK**.
6. Select the **Devices in World** window and double click the **Device** node
7. The **Connected to Device** window should appear, showing the front and rear panels of LanBand. If it does not, check the COM port settings and re-try



**Warning:** If management via the Terminal port is not possible, it could be that the management PC has another application running which uses the COM ports of the PC. Even when some programs which use the COM ports are closed down, other programs cannot access the COM ports. Rebooting the PC is required in order to release the COM ports so that DbManager can use them.

If the PC and LanBand are connected to the same LAN, management is possible using TCP/IP. All Patapsco products use the default IP settings:

<b>IP Address</b>	192.168.0.1
<b>Subnet Mask</b>	255.255.0.0
<b>Gateway</b>	0.0.0.0

To configure DbManager to access LanBand using TCP/IP, please follow these steps:

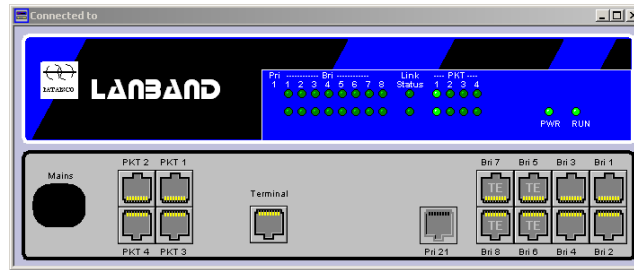
1. Select **View** → **Properties** → **Terminal** → **Device IP Addresses** from the DbMgr toolbar
2. 192.168.0.1 should already be configured. If using another IP address, add it to the list using the **Add** button
3. Click **OK** → **OK**
4. Select the **Devices in World** window and double click the Device node
5. The Connected to Device window should appear, showing the front and rear panels of LanBand

The Device node can be made to connect to other IP addresses configured in the **Device IP Addresses** list by right-clicking the node, selecting **Properties** and choosing an IP address from the **IP List**.



**Info:** TCP/IP management requires TCP port 3001 (dec) to be open between the management PC and LanBand. Any switches, hubs or routers must be configured to allow communication on this port in order to manage LanBand via TCP/IP.

A successful management connection will open up the **Connected to Device** window:



## 3.2. Notes on configuring LanBand

### Uploading

Changes to config can be made on each window and saved using the **OK** key when exiting each window. When happy with the configuration, it must be uploaded to LanBand for the new settings to come into effect.


To upload, go to **File → Upload** and wait until the progress bar completes.

### Saving Files

Configuration files can be saved in order to backup settings or copy settings across to another unit. Once configuration has been uploaded, go to **File → Save File** and choose a location to save the file to. The file extension of any saved config files is **.dbc**

### Loading Files

Once connected to a unit, an existing configuration file can be loaded to the device. Go to **File → Open File** and navigate to the saved file. Click **Open**. Now the file must be uploaded to LanBand. Go to **File → Upload** and wait until the progress bar completes.

 **Warning:** When loading existing configuration files to a unit, please ensure that the correct configuration files are used for the unit type in use. LanBand configuration files are not compatible with other Patapsco platforms.

## 3.3. Device Settings

This menu controls unit-specific features of the LanBand such as the IP Address, Identifier, Serial Number, Configuration Number, Time & Date and Event Reporting. These features are all fully explained in the LanBand User Manual on the DbManager Installation Disk.

## 3.4. Clock Sources

LanBand must be configured to either receive clock from an ISDN interface, a connection to another LanBand or generate clock internally. Different priorities can be set for each port, so if one port is unavailable, LanBand will clock from the next available port in the Clock Source hierarchy.

1. Select **Clock Sources** from the **Terminal** port menu.
2. Enter a digit to mark the priority of each ISDN port and the internal clock. **0** will denote the highest priority Clock Source and **19** will denote the lowest. Ports which are not to be used for clocking can have their values left at 19.
3. Click **OK** to save the setting.



**Warning:** Clock Sources must be configured correctly to ensure error-free operation when LanBand is connected to any other clock-locked system or network. Please consult the full LanBand manual if unsure how to configure Clock Sources.

### 3.5. PRI Ports

There are two LEDs for each PRI port, and the LED states are as follows:

Top LED on -	Layer 1 and 2 established
Top LED flashing -	Layer 1 established, trying to synchronize with Layer 2
Bottom LED on -	Calls active on interface

1. Click on an enabled PRI port.
2. The configuration settings for the port are displayed.
3. Configure the settings as required for the port.
4. Click **OK** to save the settings.

### 3.6. BRI Ports

There are two LEDs for each BRI port, and the LED states are as follows:

Top LED on -	Calls active on B channel number 1
Bottom LED on -	Calls active on B channel number 2
LEDs off -	No calls active on interface

1. Click on an enabled BRI port.
2. The configuration settings for the port are displayed.
3. Configure the settings as required for the port
4. Click **OK** to save the settings.



**Note:** Each block of 4 BRI ports can be switched to TE mode (if the switchable BRI option is taken). Switching a single port to TE mode will change the whole block to TE. The setting must then be uploaded, LanBand must be rebooted and a crossover cable must be used in order to use the port in TE mode.

### 3.7. Configuring Routing Profiles

It is strongly recommended that you draw a simple diagram showing the LanBand, its ISDN ports in use, the DDI numbers, and any local devices and the number ranges used to access them. An example is shown below.



This example requires that the LanBands route calls as follows:

1. Route calls from the **PSTN** to the **ISDN Phone**
2. Route calls from the **ISDN Phone** to the **PSTN**

All of these actions can be catered for using Call Routing Profiles. A Call Routing Profile is used to direct traffic from one port or group of ports to another, or to a Logical Link. A Routing Profile has many options to control how calls are routed, but in this case and in most applications the Routing Profile will consist of the following elements:

## Name, Source, Destination

Click on the **Terminal** port and select **Call Routing** from the Drop-Down menu to configure routing profiles for LanBand.

1. The Call Routing Profiles List is displayed. This will show all Routing Profile details when they are configured.
2. Select **Add Profile** and choose **Add Routing Profile**.
3. Name the profile and tick the **Enable** check-box.
4. Move the **SOURCE PORTS** radio button to **Select** and enter a source for incoming calls. A source can be designated by entering a port number, port and channel number or by using a **Group** of ports and/or channels:

<b>To use a port:</b>	Enter the port number (e.g. <b>21</b> for PRI 21, <b>1</b> for BRI 1)
<b>To use a port and channel:</b>	Enter the port number followed by a full stop and then the channel number (e.g. <b>21.1</b> for PRI 21 channel 1, <b>1.1</b> for BRI 1 channel 1)
<b>To use a Group:</b>	Configure a group and select it from the Drop-Down menu (see 5.2 for instructions on configuring a group)
<b>To use a Logical Link:</b>	Enter the Logical Link number ( <b>101</b> for Logical Link 101, <b>164</b> for Logical Link 164)

5. Move the **DESTINATION PORTS** radio button to **Select**, and enter a destination for calls in the same way as the **SOURCE PORTS**
6. Select the **Incoming Numbers** tab to choose numbers which Liberator will use to route the calls.



**Note:** If no Incoming Numbers are configured (\*/\*), LanBand will route all calls received on the Source ports to the Destination ports, regardless of the DDI, CLI or SubAddress numbers of the call.

7. The DDI Listing defaults to \*/\* which represents any number and any SubAddress (Number/SubAddress).
8. Double click the \*/\* to edit the number values. An entry of **\*1234/\*** would route any call with a DDI ending in 1234 with any SubAddress. Right-clicking an existing entry will present more options.
9. Enter a CLI value if required. This is entered in the same way as the DDI. The default value; **\*** will route calls with any CLI.



**Note:** More routing options may be used to configure complex routing profiles. These are all explained in the LanBand manual on the DbManager installation disk.

10. Click **OK** on the two active windows and the new routing profile will appear in the Call Routing Profiles List.
11. Click **Exit** to return to the Connected to Device window.

## Prioritizing Routing Profiles

The **Call Routing Profiles List** shows all configured Call Routing Profiles in order of priority. These priorities can be rearranged to allow diverse routing possibilities. When LanBand receives a call, it will check each profile in order from the top of the list for any routing parameters matching those of the call. It will route the call based on the first matching profile.

1. Select **Call Routing** from the **Terminal** port Drop-Down menu.
2. All configured routing profiles are displayed.
3. Right click on a profile in the Type column to display options. The profile can be promoted or demoted in the priority list. There are also options to edit and delete the profile.

This table shows the profiles which would be required to carry out the call routing shown in the diagram above:

Profile Number	Profile Name	Source	Primary Destination	DDIs
0	PSTN to ISDN Phone	21	101	*/*
1	ISDN Phone to PSTN	101	21	*/*

LanBand 1 will route any calls from the PSTN to LanBand 2 via its Logical Link 101, and any calls from LanBand 2 to the PSTN. LanBand 2 will have the following routing configuration:

Profile Number	Profile Name	Source	Primary Destination	DDIs
0	ISDN Phone to PSTN	101	1	*/*
1	PSTN to ISDN Phone	1	101	*/*

Calls can now be passed between the two LanBands.

### 3.8. Link Configuration

The Link Configuration option is used to configure **Logical Links** between LanBand units. Each Logical Link can carry up to 32 ISDN channels.

Packet Addresses

Local: 10 . 1 . 1 . 190

Remote: 10 . 1 . 1 . 191

1. Click on **Link Configuration**
2. Select the first Logical Link; **LL101**
3. Tick the **Enable** tickbox
3. Enter the IP address of the remote LanBand



**Note:** Each Logical Link can be configured with many settings for transport across a Packet Switched Network. All of these options are described in the LanBand User Manual. The above settings are all that is required to get a Logical Link running initially. A pair of LanBands working in a system should have identical Logical Link settings in order to pass traffic across a PSN.

### 3.9. Using Groups

When more than one port needs to be configured as a source or destination for calls, a Group of ports can be set.

1. Select **Add Group** from the **Add Routing Profile** screen.
2. The **Group Configuration** screen is displayed.
3. Name the Group you wish to configure.



**Note:** The names of any Routing Profiles, Groups and Identifiers must not contain the following characters: < > ~

4. Use the **All** and **None** buttons to add blocks of PRI and BRI ports to the Group, or select individual channels from each port by using the tick-boxes.
5. Click **OK** to save the group.
6. The new Group will now appear in the **SOURCE** and **DESTINATION** drop-down menus. Select this Group from the drop-down to use it in a Call Routing Profile.

### 3.10. Finishing Configuration



**Note:** Please remember to **Upload** when configuration of LanBand is complete. To upload, go to **File → Upload** and wait until the progress bar completes.

## 3.11. More Resources

All Patapsco products and the DbManager application have their own User Manuals which can be found in the 'Documents & Manuals' folder on the DbManager installation disk. Please consult these manuals for more detailed information on any aspect of using Patapsco products. All documentation can also be obtained by registering at the Patapsco website:

[http://www.patapsco.co.uk/Top\\_Level/LogIn\\_Register.asp](http://www.patapsco.co.uk/Top_Level/LogIn_Register.asp)

For help with a specific problem, please click on the **On-Line Help** icon on the website, or email a request to [support@patapsco.co.uk](mailto:support@patapsco.co.uk)