Trinity Feature: DSL Configuration

Reference Guide Appendix

Sales Office: **+1 (301) 975-1000**
Technical Support: **+1 (301) 975-1007**
E-mail: **support@patton.com**
WWW: **www.patton.com**

Part Number: **07MTRINDSL-APD, Rev. C**
Revised: **February 24, 2012**

Patton Electronics Company, Inc.
7622 Rickenbacker Drive
Gaithersburg, MD 20879 USA
tel: +1 (301) 975-1000
fax: +1 (301) 869-9293
support: +1 (301) 975-1007
web: www.patton.com
e-mail: support@patton.com

Notice
The information in this document is subject to change without notice. Patton Electronics assumes no liability for errors that may appear in this document.

The software described in this document is furnished under a license and may be used or copied only in accordance with the terms of such license.

Appendix DSL Configuration

Chapter contents

Overview

This chapter describes how to configure DSL settings. Some models with the Trinity platform offer a G.SHDSL port on the back of the device. Each DSL interface is capped with a PPP interface that is routed or bridged out an Ethernet interface or another WAN service. In this way, the device is a DSL Access Multiplexer or DSLAM.

Note The menu, commands, and features for your model may vary slightly from what is shown in this manual. Some models may not include all of the features mentioned. Refer to the model's *User Manual*, available online at **www.patton.com/manuals**, to see which features are available.

Configuration Overview

When the unit boots, it creates Data Channels for each DSL interface (i.e. dsl0, dsl1, ..., dsl23). Data Channels are automatically available to bind to PPP interfaces. See the PPP Configuration chapter in the *TrinityAE Administrator's Reference Guide* (available online at **www.patton.com/manuals/Trinity-arg.pdf**) for details on how to configure PPP.

The unit allows each DSL interface to be configured independently with the following settings: bandwidth, terminal type, annex, and link state. G.SHDSL defines bandwidth (speed) in terms of 64kbps increments called timeslots. There is a minimum of 3 (192kbps) and a max of 36 (2.3Mbps). It also defines two annexes which are the frequency spectrum used to transmit data. The spectrum for Annex A relates directly to the spectrum used for T1 and Annex B relates directly to E1. The final configuration value is link state, which can be up or down. When the link is up, the DSL interface will attempt to establish a DSL connection regardless of whether it is physically connected or not. When the link is down, the DSL will not attempt to establish nor will it respond to attempts to establish a DSL connection.

When linking, the unit will always attempt to use G.Handshake to negotiate line speed; this cannot be disabled. In CO mode, the configured bandwidth is the max possible bandwidth, but it could negotiate a lower value if the signal to noise ratio is to high. In CPE mode, the configured bandwidth is ignored.

To configure DSL through the WMI,
see the section "Web Management Interface (WMI)" on page 5.

To configure DSL through the CLI,
see the section "Command Line Interface (CLI)" on page 7.

Web Management Interface (WMI)

To access the G.SHDSL Management page, click on **Interface Configuration** > **DSL** from the main menu on the left of the screen.

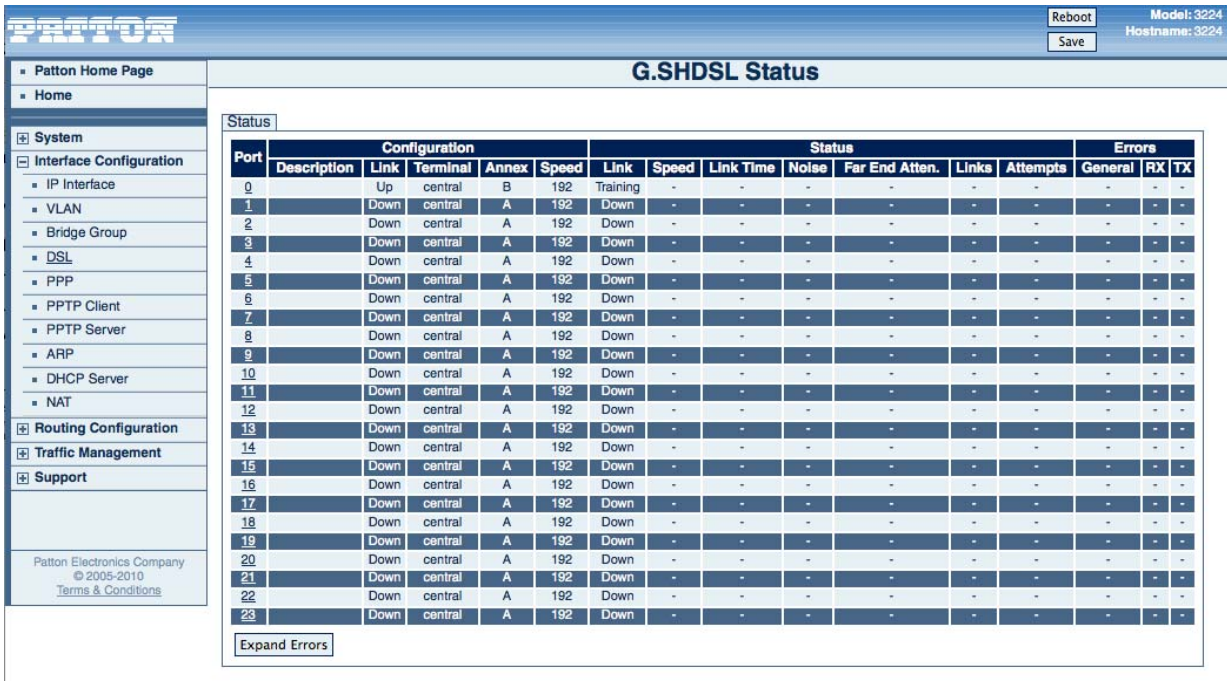

Figure 1. G.SHDSL Management main page

Configure DSL Ports

To configure a DSL port:

1. Click on the port number in the **G.SHDSL Status** table. The **G.SHDSL Port Management** page displays.

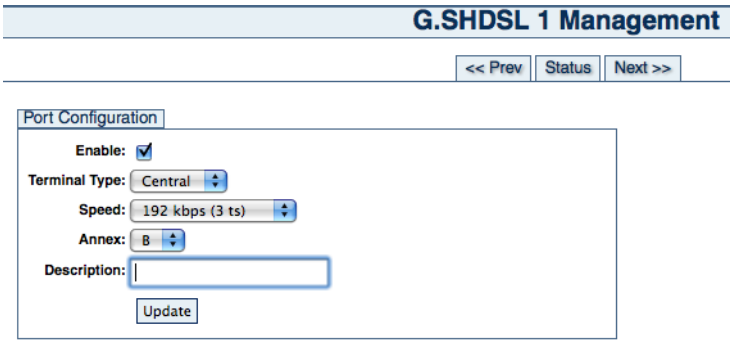

Figure 2. G.SHDSL Port Configuration

2. Select the **Enable** checkbox to begin training the link.
3. From the **Terminal Type** drop-down menu, set the DSL as CO (**Central**) or CPE (**Remote**).
4. Select the desired speed value (including timeslots) from the **Speed** drop-down menu.

5. Select **A** or **B** from the **Annex** drop-down menu.
6. Enter a **Description** for the port (optional).
7. Click **Update**.

> **Note** A DSL port cannot be configured while it is bound to a PPP interface.

Manage DSL Ports and PPP Interfaces

To manage DSL ports and PPP interfaces, click on **PPP** in the main navigation menu on the left side of the screen. Then, select the PPP interface to manage. DSL ports display as PPP devices.

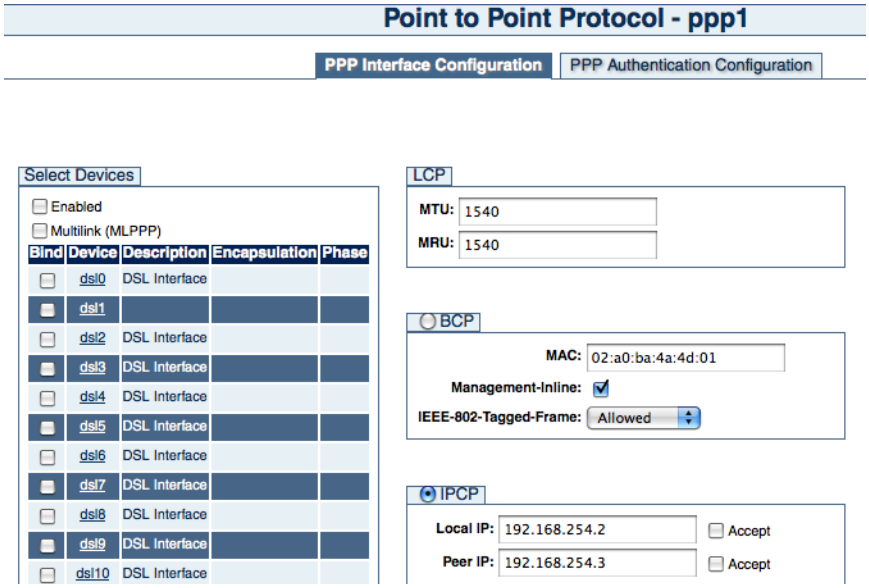

Figure 3. DSL Ports and PPP

To bind a DSL port to a PPP interface:

1. On the PPP interface page, select the **Enabled** checkbox in the **Select Devices** section.
2. If you want to bind multiple ports, select the **Multilink (MLPPP)** checkbox.
3. Select the **Bind** checkbox for the desired DSL port(s).
4. Click **Update** to enable your changes.

To unbind a DSL port from a PPP interface:

1. On the PPP interface page, deselect the **Enabled** checkbox in the **Select Devices** section.
2. Deselect the **Bind** checkbox for the desired DSL port(s).
3. Click **Update** to enable your changes.

> **Note** For more detailed information on PPP, refer to the *PPP Configuration* chapter in the *TrinityAE Administrator's Reference Guide* (available online at **www.patton.com/manuals/Trinity-arg.pdf**).

Command Line Interface (CLI)

Table 1. DSL - CLI Commands

	Step	Explanation
1	**Trinity#configure**	Enter configure mode.
2	**Trinity[config]#interface dsl <number>**	Enter the configuration mode for dsl number, where number is between 0 and 23.
3	**Trinity[dsl-0]# set {annex {a|b}|timeslot <number>|type {central|remote}}**	Sets various attributes of the DSL.
	set annex {a|b}	Sets the annex to A or B.
	set timeslot <number>	Sets the number of timeslots to use. Valid values are 3-36.
	set type {central|remote}	Sets the DSL to CO (central) or CPE (remote).
4	**Trinity[dsl-0]# [no] shutdown**	Enables or Disables a DSL interface.

Viewing Statistical Information

The following statistical information is available for each DSL. The information can be acquired via the **show interface dsl** [**<number>**] command or via the **show** command while configuring the DSL interface.

Note Statistics are only accurate when the DSL is linked.

- DSL link state as configured vs. DSL link state in reality
- Number of links vs. Number of attempts to link
- Noise on the line in 0.5dB increments
- Far End Attenuation in 0.5dB increments
- Link up-time
- Terminal type as configured (CO or CPE)
- Speed/timeslots as negotiated
- Speed/timeslots as configured (only shown if different from negotiated value)
- Annex as configured (A or B)
- General Errors
  - Loss Of Signal errors
  - Cyclic Redundancy Check errors
  - Digital Phased Locked Loop errors

- Rx Errors
  - Full buffer errors
  - Empty buffer errors
  - Buffer Slip errors
- Tx Errors
  - Full buffer errors
  - Empty buffer errors
  - Buffer Slip errors
  - Number of Stuff Bits injected

DSL Configuration Example

```
Trinity[dsl-4]# show
DSL 4 is up, link is up
        4 links in 10 attempts
        20.0dB noise, 0.0dB far end atten.
        Link active for 5 seconds
        Terminal type is central (CO)
        Speed is 1024kbps (16 timeslots)
                configured as 2304kbps (36 timeslots)
        Annex is A
        General Errors
                5 LOS, 4 CRC, 0 DPLL
        Rx Errors
                1 full, 0 empty
                0 slip
        Tx Errors
                0 full, 0 empty
                0 slip, 0 stuff bits
```