Q&A

Dial Backup for Dedicated T1 Circuits using the ATLAS

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A:

Introduction

This technical support note describes how to configure the ATLAS 550/800^{PLUS}/810^{PLUS}/830/890 for ISDN dial backup of a dedicated T1 circuit. The ATLAS 550/800^{PLUS}/810^{PLUS}/830/890 can be configured to either originate or answer an ISDN call when a failure condition is detected on the T1.

Before You Begin

This application requires an ATLAS 800^{PLUS}/810^{PLUS} with firmware revision F.02 or later, and an ATLAS 550 must have firmware revision B.01 or later. Please note that an ATLAS 800 (Part Number 1200180L1 or 1200227L1) does not have the capability of dial backup for dedicated circuits. A V.35Nx module (Part Number 1200184L1) or USSI module (Part Number 4200261L1, 4200261L2 or 4200261L3) will need to be installed in the ATLAS 800^{Plus}. A V.35Nx module (Part Number 1200311L1) will need to be installed in the ATLAS 550. If bonding of B-channels is required for the application, the IMUX module (Part Number 1200262L1 for ATLAS 800^{PLUS}/810^{PLUS}, 1200326L1 for ATLAS 550) will also need to be installed.

How Dial Backup Works

The ATLAS 550/800^{PLUS}/810^{PLUS} will either originate or answer a dial backup call upon detection of a network failure or network/data failure on the T1. A network failure is any physical layer T1 failure, such as red alarm or loss of signal. A network/data failure is detected when the ATLAS no longer receives keep-alive responses over the 8K inband channel. The network/data criteria for dial backup can only be used when configured to monitor the inband channel. For the purposes of this technical note, the network diagram

in Figure 1 will be used as an example (Note: In this example, the TSU 120 has a NxDBU module installed. This document does not detail how to configure the TSU or the ISU.)

Dedicated Dial Backup Example Network

Figure 1
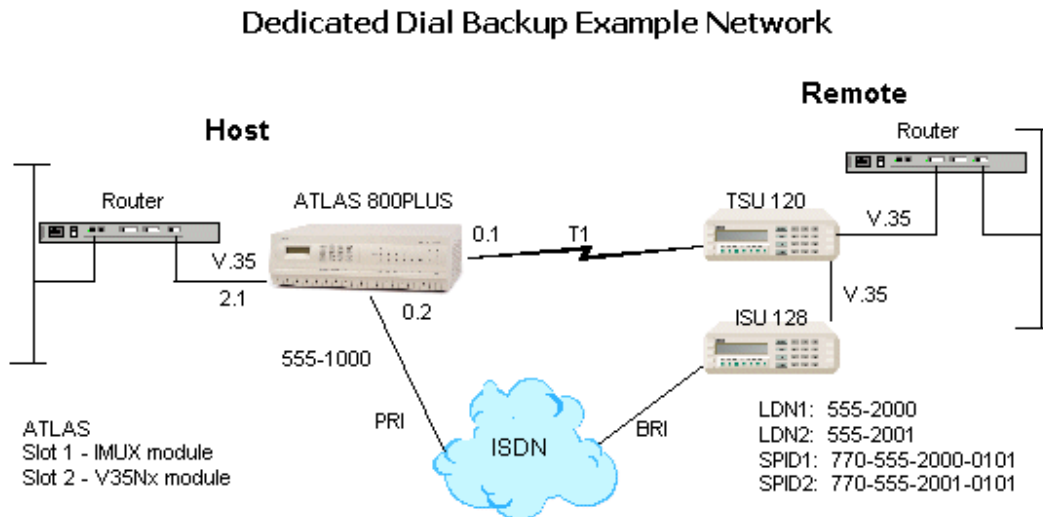
Configuring the Dedicated Map

1. Telnet into the ATLAS (or connect directly through the Control/Chain In port) and go to **Dedicated Maps**, **Create/Edit Maps**, then **Connects**. In **FROM Slt** and **Port**, press enter and select the appropriate V.35Nx module and port number. **NOTE:** It is important for this application that the V.35Nx endpoint be placed in the **FROM Slt** column and not the **TO Slt** column position.
2. In **TO Slt** and **Prt/PEP**, press enter and select the T1/PRI module and port number to which the V.35Nx should be cross-connected.
3. Press enter on **From Config** and another menu will be displayed. Press enter on **DSO Rate** and select the T1 DS0 channel rate, either 56K or 64K. Press escape to return to the **Connects** menu.
4. Press enter on **To Config** and another menu will be displayed. Press enter on **DS0 Selection** and enter the range of channels to be mapped on that T1; for example, channels one through eighteen would be represented as 1-18. Press escape to return to the **Connects** menu. Figure 2 shows how the **Connects** menu should appear once configured.
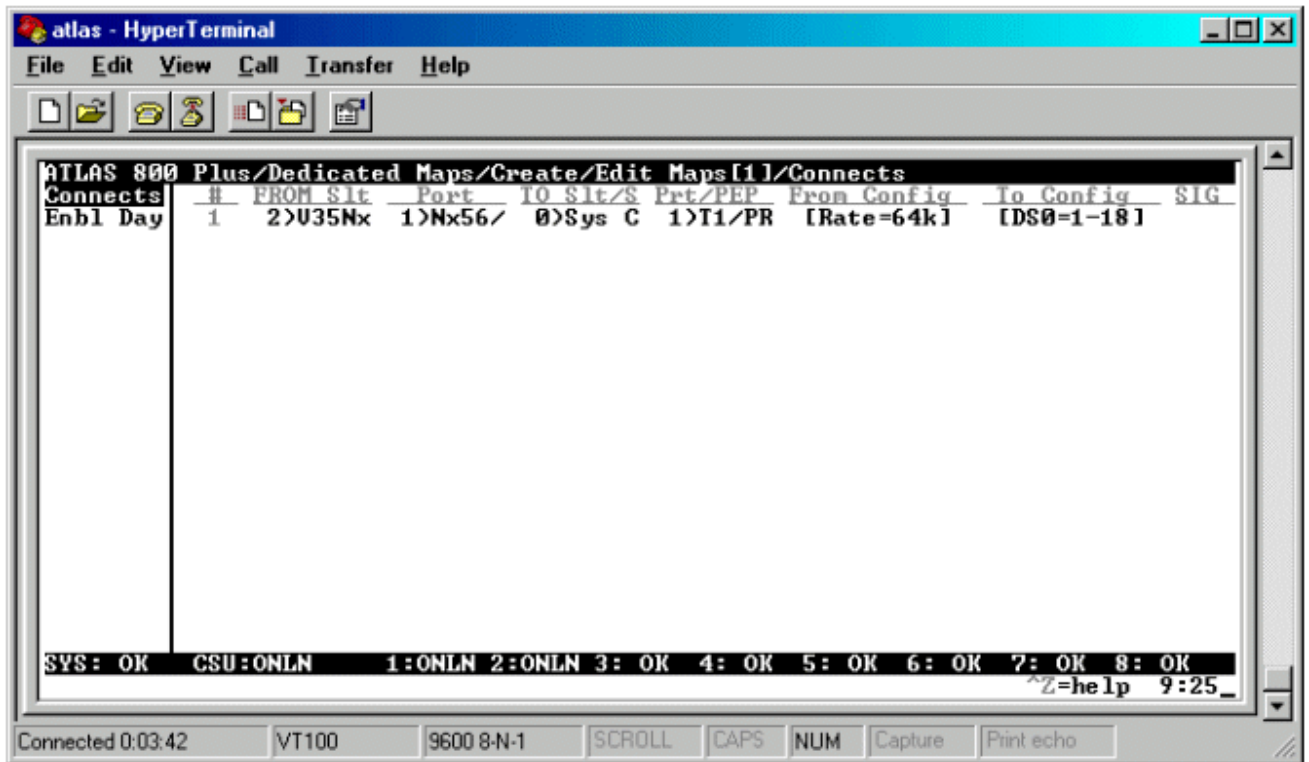
Figure 2

Configuring the Dial Backup

1. From the main menu (press 'H' to return to the main menu from anywhere) go to **Dial Plan**, **Network Term** and enter on the **Slot** and **Port** options to select the appropriate module and port. This will be the primary T1 coming from the telephone company. (For more information on when to use **Network Term** versus **User Term**, see the ATLAS FAQs.) Figure 3 shows the Dial Plan entry for a PRI connected to slot 0, port 1.
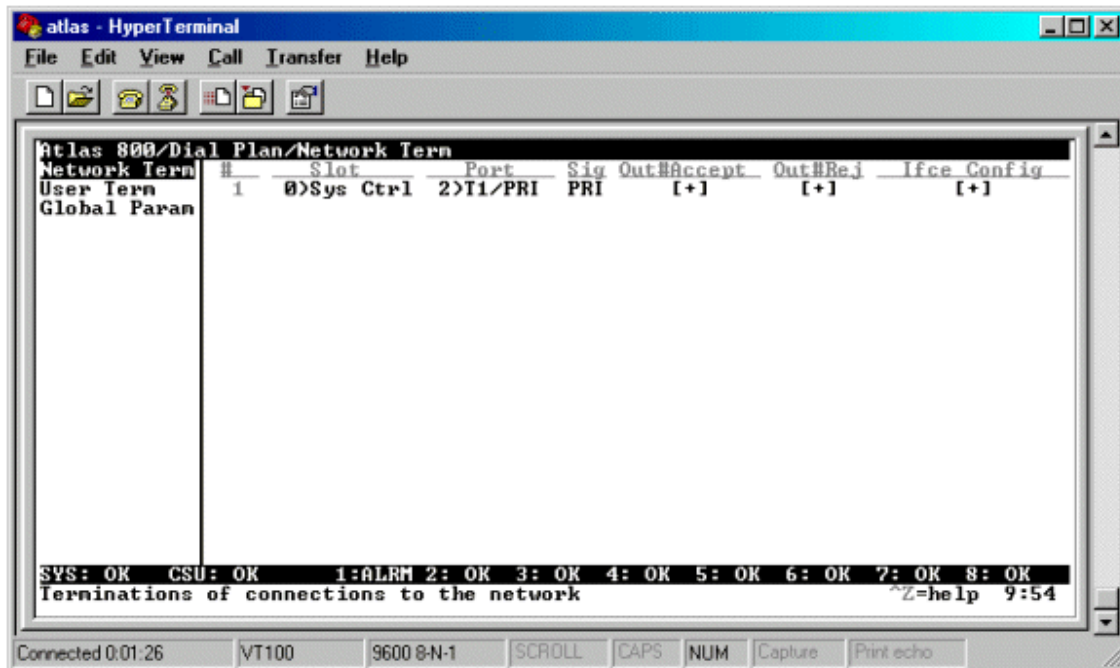
Figure 3

2. Next, you will set up the backup entry in the **User Term**. Use the arrows on your keyboard to navigate the cursor to the **User Term** and press enter. For the **Slot** field, you will select **CKT Backup**. The **Port** field will only allow you to select V.35 or USSI ports that were entered on the **FROM Slt** field in the **Dedicated Map**. Select the appropriate port that you wish to use. This is the port that will be backed up if a failure occurs on the T1. Figure 4 shows the entry for the **Circuit Backup**.
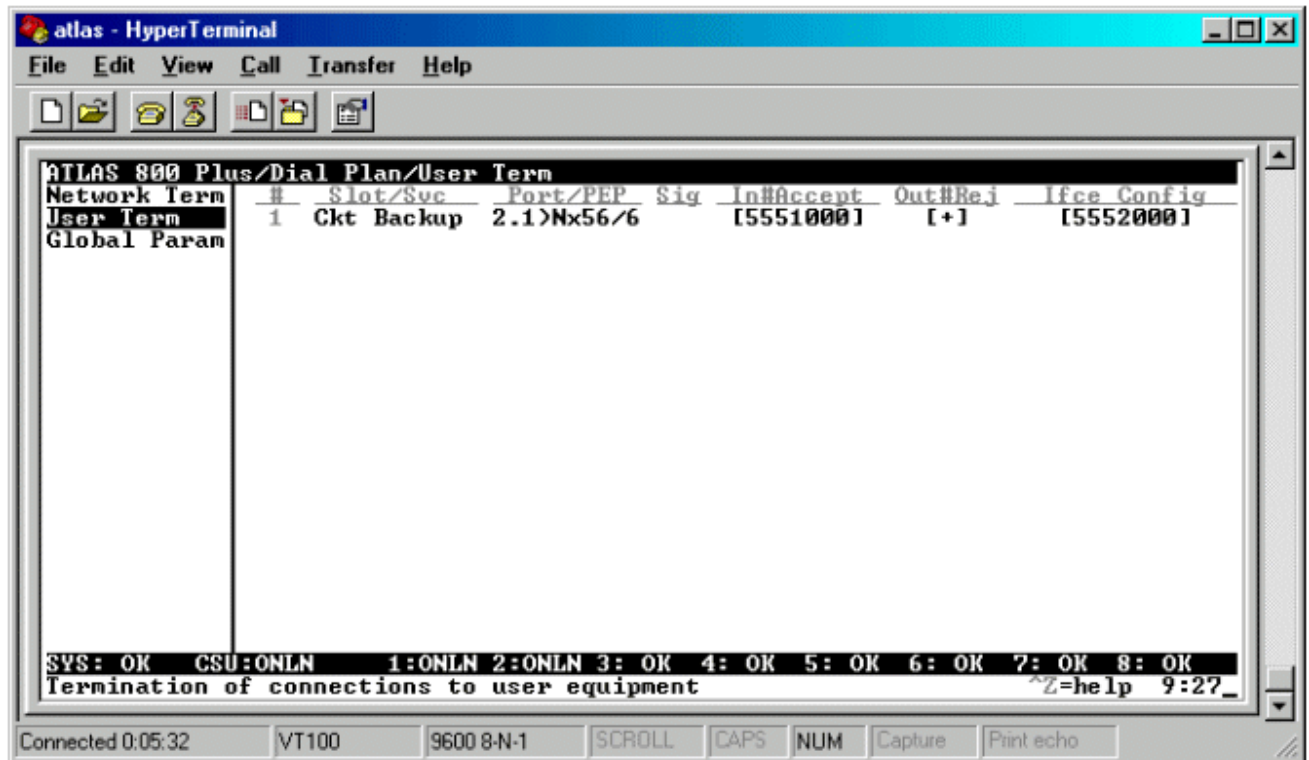
Figure 4

3. The next step is to configure the **Ifce Cfg** options. These include the DBU parameters. Navigate to the **Ifce Cfg** option and press enter. This will take you to a different screen. The following options are available here.

    o **Originate/Answer**: If you wish for the ATLAS to be the originate side, you should set this option to Originate. The other choices are Answer or Answer Always.

    o **Outgoing Call Type**: Your choices are Digital 64 or Digital 56 and should be set according to the type call you are trying to make.

    o **Source ID**: The source ID should remain at 0 unless you have specified a source ID elsewhere in the programming.

    o **Outdial Number**: This field should contain the number you want the ATLAS to dial to go into backup.

    o **Force Mode**: Options are Auto, Forced or Disable. This option should be left at Auto unless you want to either force DBU all the time, or disable DBU to never be active.

    o **Backup Criteria**: Options are Net/Data Fail, Net Fail or Manual.

    Net/Data Fail: DBU is initiated when either the network fails (possible causes include Red, Yellow, Blue, or LOS alarms) or when the Nx56/64 module detects a loss of data transitions on the V.35 interface. If Net/Data Fail is selected, the V.35 Nx **INBAND** option must be *ON*. The remote TSU **INBAND** option must also be enabled.

    Net Fail: DBU is initiated when there is a network failure. Possible causes include LOS, RED, Yellow, or Blue alarms.

Manual: The ATLAS will never initiate DBU until it is manually set to do so.

- o **Restore Criteria**: Manual Only is the only option available when **Backup Criteria** is set for **NET/DATA FAIL**. When **Backup Criteria** is set to **NET FAIL**, then **NET SUCCESS** may be selected so that data is automatically switched back to the main circuit when the network alarm clears.
- o **Startup Delay**: Length of time (in seconds) that determines how long to wait before implementing the DBU capabilities after being configured.
- o **Backup Delay**: Length of time (in seconds) that determines how long the T1 must be in a fail state before dial backup will take affect.
- o **Restore Delay**: Length of time (in seconds) that determines how long the main circuit must be restored before the DBU will switch off.
- o **Max Number of Retries**: Options are None, 3, 10, and Unlimited. This is the number of times the ATLAS will redial if first DBU connection fails.
- o **Redial Timer**: Length of time (in seconds) that determines how long to wait before retry.
- o **Enable Schedule**: This option will take you to a different screen where you can configure times that you will allow (or not allow) the ATLAS to go into DBU mode.
- o **Test Call**: Options include Hourly, Daily, Weekly, Bi-Weekly, or manual only. The ATLAS can be set to automatically place a DBU test call at any one of these times. If you do not wish for the ATLAS to use this feature, select Manual Only.
- o **Min DS0s**: Specifies the minimum number of DS0s to use for DBU. This option should be set to 1 unless you are trying to place a bonded call. Bonding requires that the IMUX module be installed in the ATLAS.
- o **Max DS0s**: Specifies the maximum number of DS0s to use for DBU. The valid range for this field is 1-32.

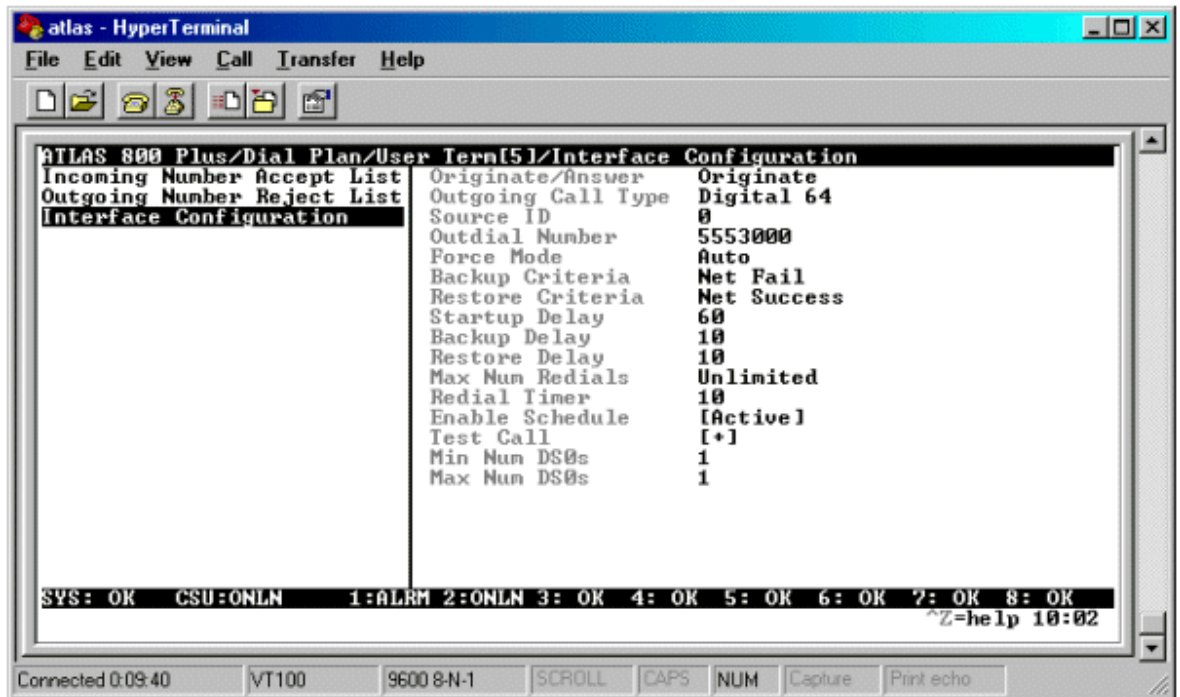The **Ifce Cfg** options will resemble Figure 5 when set for Originate:

Figure 5

When the ATLAS is configured for Answer, the option list under **Ifce Cfg** is abbreviated because some of the options are no longer applicable. Your screen will look similar to Figure 6:
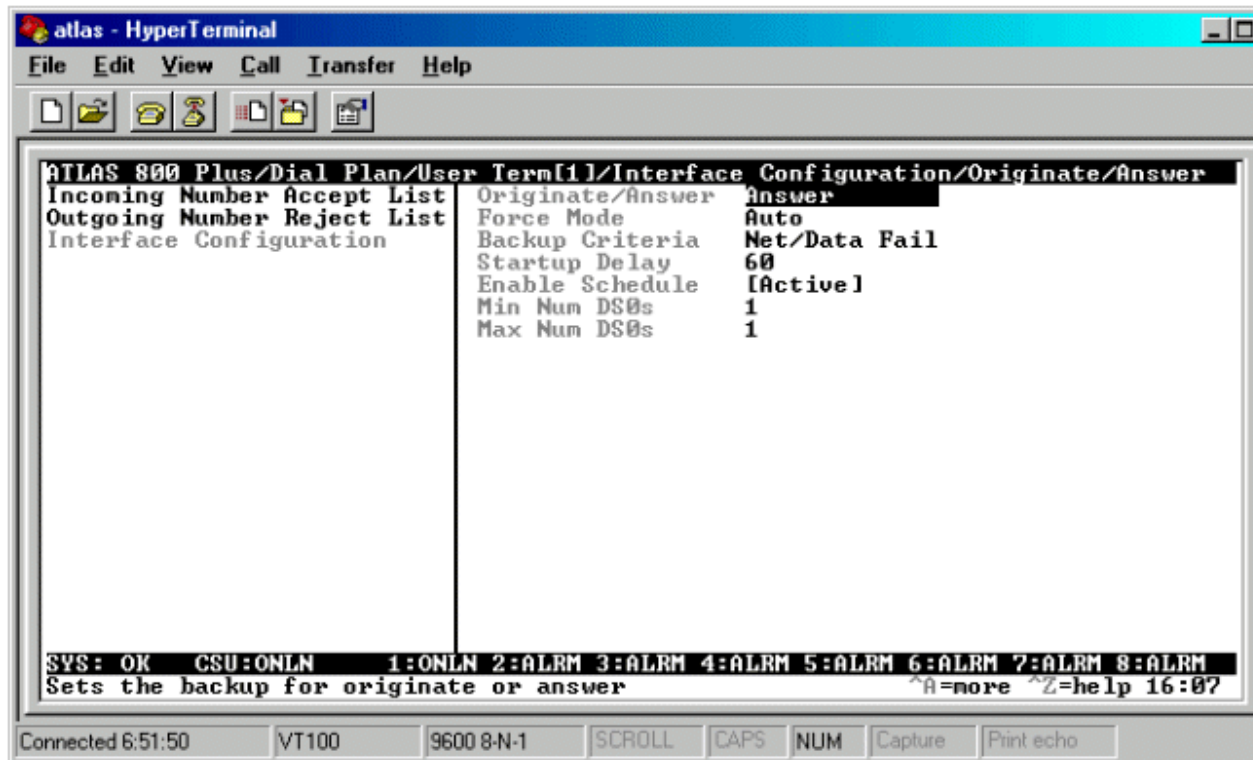
Figure 6

Circuit Status

It is possible to monitor the status of the dial backup circuit. From the main menu, select **Circuit Status**. The **From** column shows the circuits that have been configured for backup. The **Man** field allows the user to manually force backup (FB), or restore the circuit to regular (FR). The **Line Status** shows the status of the backup line. Possible values and descriptions of these values can be viewed by highlighting the entry and pressing **ctrl-a** for the help screen. Figure 7 shows the **Circuit Status** screen and Figure 8 shows the **Circuit Status** screen with the help menus:
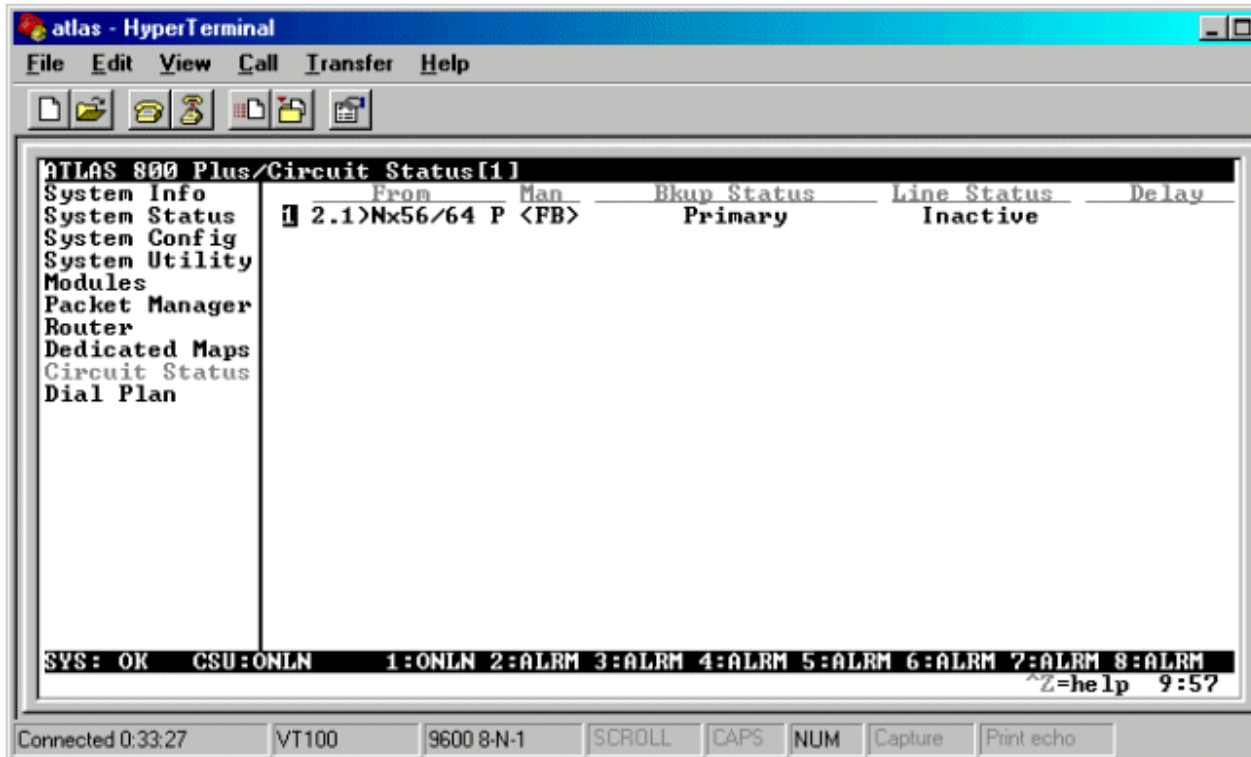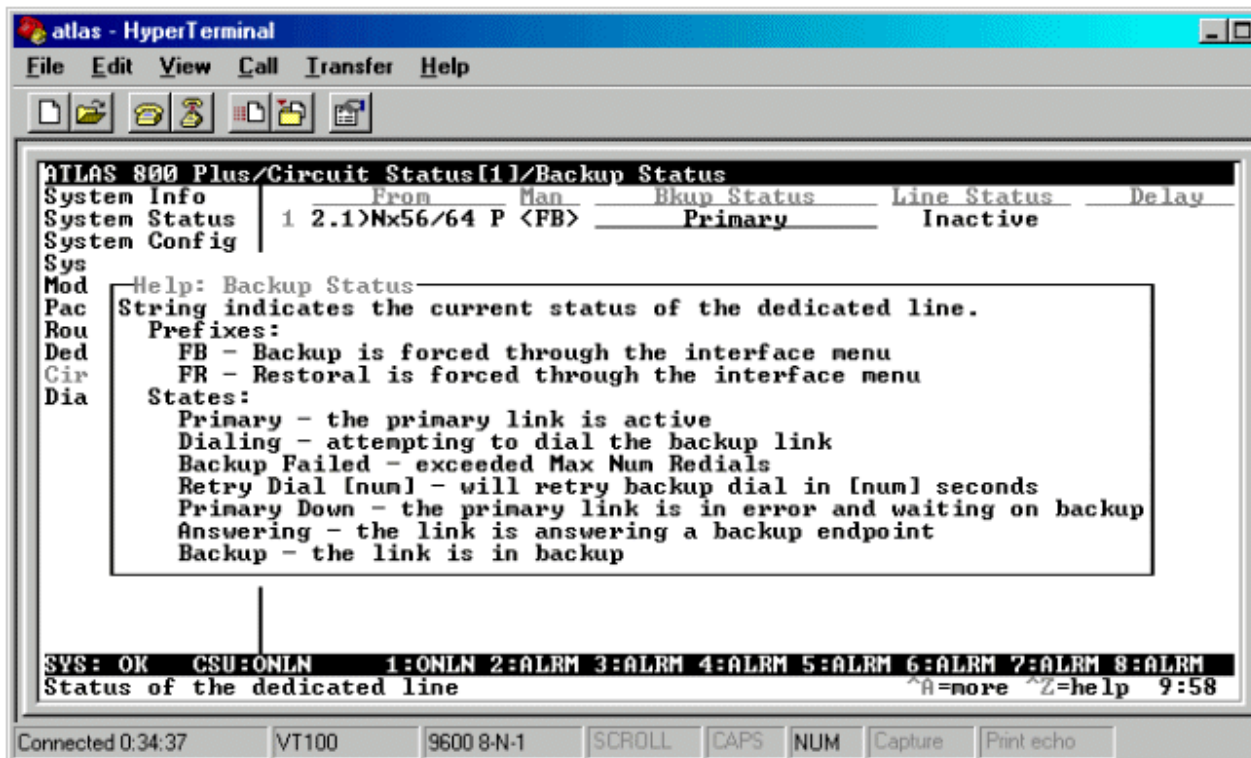
Figure 7

Figure 8

Important Things to Note and Troubleshooting Tips

o Remember that the ATLAS 800^{PLUS}/810^{PLUS} requires firmware revision F.02 or higher. The ATLAS 550 requires firmware revision B.01 or higher.
o If you are using an Adtran TSU product with dial backup at the remote end, disable the 'Pattern Verify' option, as the ATLAS does not support this feature.
o If you are doing Bonding, remember that the ATLAS will NOT fall back to a single channel if it is not able to bond. You must manually set the **MIN/MAX DS0s** option to the number of channels you are trying to connect.
o If the ATLAS will not allow you to select a port to backup on the **User Term** menu, go to the **Dedicated Map** menus and make sure that the V.35Nx port is listed in the **FROM Slt** field.
o You may highlight any field on the ATLAS configuration screen and press **ctrl-a**. If a help menu is available, a text box will appear on your screen explaining possible options for the highlighted screen.

Sample Configuration Files

The sample configuration files (see below) are examples of the application described in this note. These files may not contain all the configuration options needed for your specific application and are not meant to be used as a working configuration for a live network.

WARNING: Loading these sample configuration files will overwrite any existing configuration on your ATLAS product.

NOTE: Prior to loading a configuration file to the ATLAS, disengage any modules currently installed in the ATLAS. The configuration file may contain modules configured in certain slots which conflicts with modules installed in your ATLAS. If a configuration file is loaded onto an ATLAS in which the configured modules do conflict with installed modules, then the portion of the configuration relating to those modules ports will not be loaded.

Download the configuration

22. Download the appropriate configuration bundle below according to which ATLAS product you have.

ATLAS 800^{PLUS} ddbu800p.exe
ATLAS 810^{PLUS} ddbu810p.exe
ATLAS 550   ddbu550.exe

23.
24. Save the executable file to an empty folder on your PC's hard drive.
25. Browse the folder where the file is saved. Execute the file by double clicking on it.

26. The configuration file and a readme.txt file will be automatically extracted to the **c:\adtnutil** folder on your computer.
27. Please refer to the readme.txt file for full instructions on downloading the configuration file to the ATLAS unit.