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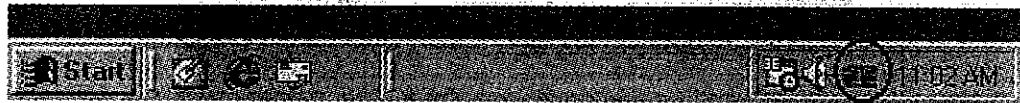
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## Chapter 5 User's Guide to the ADSL Modem Icon Utility

The Modem Icon Utility will allow the user to monitor the ADSL modem's connection and ATM/ADSL states, setup the PVC values, and run a few diagnostics tests.

### Getting Started

Before proceeding forward, please make sure that the modem has been installed correctly. Contact your network administrator if help is required. The Modem Icon Utility is displayed as an icon on the task bar of the windows desktop screen. As shown below.



### Using the Modem Icon

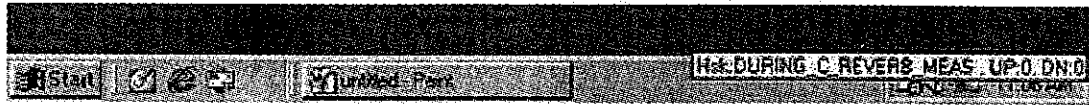
The Modem Icon serves two purposes:

1. To display the modem status
2. To allow the user to monitor the ADSL modem.

### Modem Status

The Modem Icon consists of two lights side by side. These lights are used to display the state of the modem. The left light signifies data is being transmitted whereas the right light signifies information is being received. The state of the modem can be determined as follows:

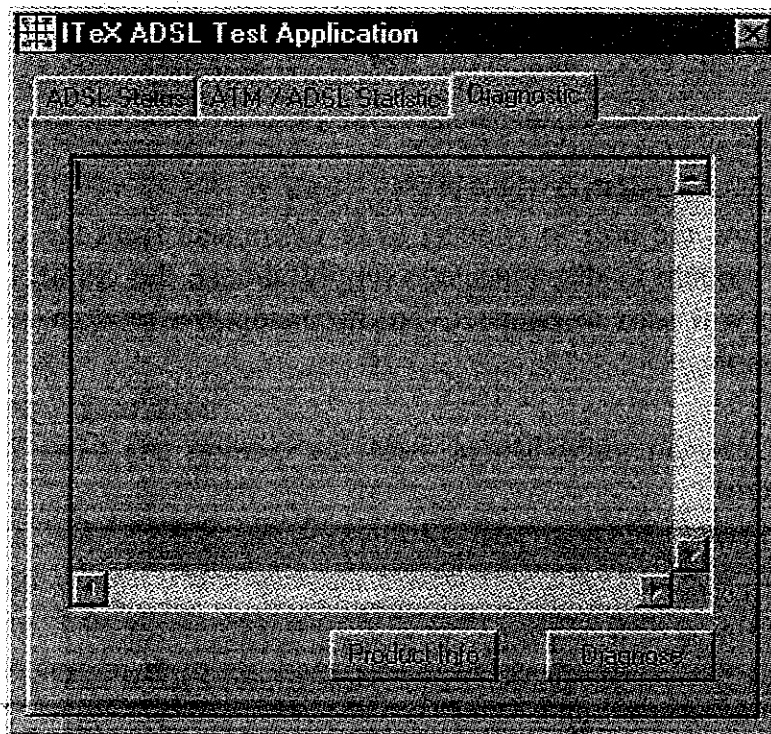
Code	Description
Red, Red	No signal
Black/Yellow or Yellow/Blk flashing	Modem is connecting
Green, Black	Modem is transmitting data
Black, Green	Modem is receiving data
Green, Green	Modem is transmitting and receiving data
Black, Black	Modem is idle, connected
Ø	Modem is disconnected, or a problem exists



Placing the mouse cursor on the Modem Icon will show a summary of the modems status by displaying the modem's state, upstream line rate and downstream line rate.

## Monitoring the ADSL Modem

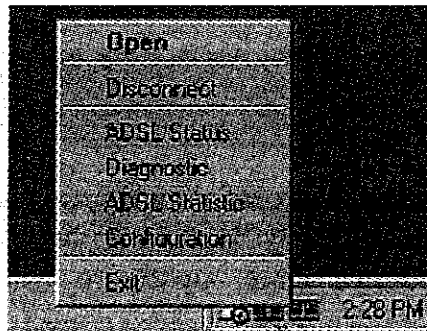
### ADSL Test Application



Pointing to the Modem Icon, and clicking on the left mouse button will display the ADSL Test Application window. From this windows, the user will be able to run Diagnostics, review the ADSL modem status and view the ATM/ADSL Statistics. For a more detailed explanation of each window, turn to the appropriate section in this manual for each menu.

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## Modem Icon Menu



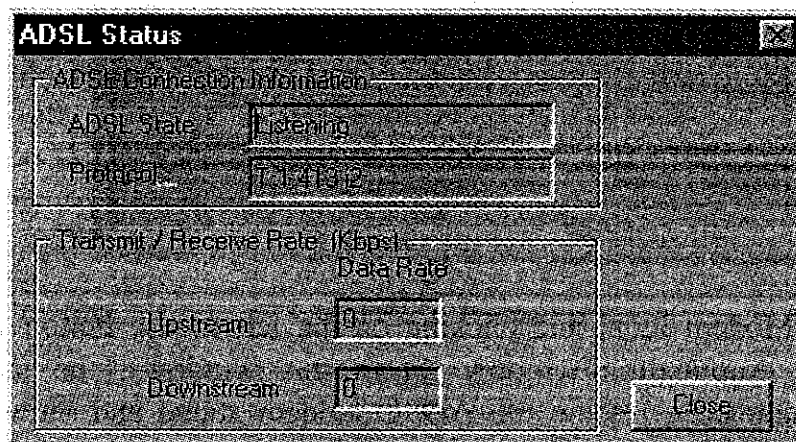
Pointing to the Modem Icon and clicking on the right mouse button will display the Modem Icon options window. From this window, the user will be able to:

- a. "Disconnect" the modem from or "Connect" the modem to the central office equipment;
- b. Run a diagnostic test to test the modem;
- c. Monitor the ADSL modem status;
- d. Monitor various ADSL statistics;
- e. configure the PVC values for RFC1577 and RFC1483.

## Connecting and Disconnecting the ADSL Modem

This option will allow the user to connect to or disconnect from the central office equipment. If the modem is disconnected, simply choose the connect option and the ADSL modem will start to connect. To disconnect the modem, simply select the disconnect option.

## ADSL Status Menu



The ADSL Status menu allows the user to monitor the ADSL connection as well as monitor the transmit and receive line rates.

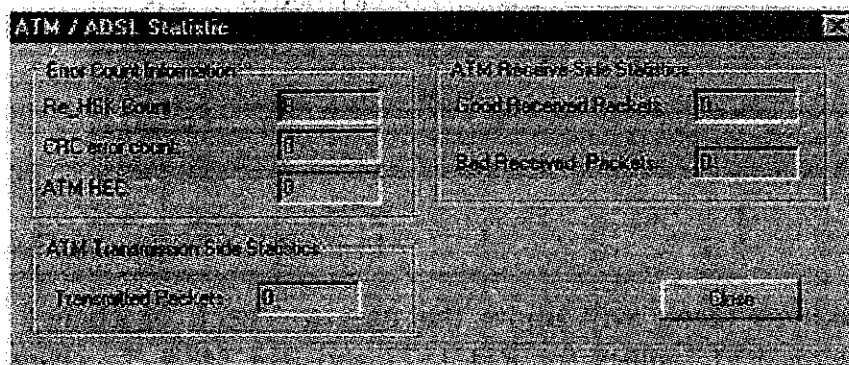
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ADSL State - displays the current status of the modem. These states are: Connected, Connecting, and Disconnected.

Protocol - The protocol section displays which ADSL standard is being used.

Transmit/Receive Rate - In the Transmit and Receive section, the user will be able to see what kind of line rate is being achieved for both upstream and downstream line rates.

### ADSL Statistics Menu



From this menu, the user will be able to see Error Count Information, ATM Transmission statistics and ATM Receive statistics.

#### Error Count Information

Re\_HSK Count - The number of times handshaking has occurred.

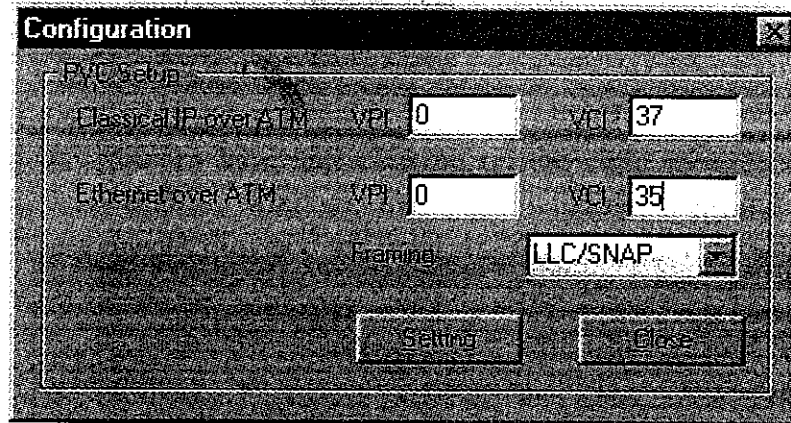
CRC error count - The number of cyclic redundancy check (CRC) errors accumulated during showtime. The count will be reset to zero after the next handshaking. During showtime, the receiver keeps checking the CRC check sum for each received superframe. If there is a mismatch between the received check sum and the locally calculated check sum, a CRC error has occurred.

ATM HEC - The number of ATM header error check (HEC) errors accumulated during showtime. The count will be reset to zero after the next handshaking. After entering showtime, the ATM TC layer at the receiver will undergo a cell delineation hunting process by finding the header of each received ATM cell. After successfully finding the cell delineation, the ATM TC layer will keep checking the HEC check sum for each received ATM cell. If there is a mismatch between the received check sum and the locally calculated check sum, an ATM HEC error has occurred.

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ATM Transmission Side Statistics - displays the number of packets transmitted.  
ATM Receive Side Statistics - displays the number of good and bad packets received.

### Configuration Menu



The Configuration menu will allow the user to check or change the ADSL network modems PVC values for RFC1577 and RFC1483. To change the PVC values, simply select one of the RFC protocols, enter the VPI and VCI values, and then click on the PVC Setting button. Click Yes when asked to reboot the system. Click on the Close button to close the configuration window.

## Specifications

### ADSL Modem Card Connectors

The ADSL Modem cards has two connectors:

- \* PCI Connector that connects to an open PCI slot in your PC
- \* ADSL Connector that uses an RJ-11 telephone tip / ring connector (pin 3 is ring, pin 4 is tip)

### Data Transfer Rates

#### ADSL Full Data Rates

Bit Rate per Constellation Size (kb/s)							
Symbol Rate (kbauds)	256 uncoded	256	128	64	32	16	8
136 w/o RS	1088	952	816	680	544	408	272
136 with RS	1024	896	768	640	512	384	256
340 with RS	2560	2240	1920	1600	1280	960	640
680 with RS	5120	4480	F/A	3200	F/A	1920	F/A
952 with RS	7168	6272	F/A	4480	F/A	2688	F/A

**Table 1: Downstream Channel Bit Rate per Constellation Size (kb/s)**

Bit Rate per Constellation Size (kb/s)								
Symbol Rate (kbauds)	256 uncoded	256	128	64	32	16	8	8ER
136	1088	952	816*	680	544*	408	272*	90.6*
68	544*	476*	408*	340*	272*	204*	136*	45.3*
17	136**	119**	102**	85**	68**	51**	34**	11.3**

\* Future availability with 680 and 952 kbauds downstream symbol rates

\*\* only available for 136 kbauds downstream

**Table 2: Upstream Channel Bit Rate per Constellation Size (kb/s)**

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### ANSI T1.413 Data Rates

Data rates for DMT mode are partitioned at 32 kb/s increments for both the upstream and downstream data rates adhering to the T1.413 Issue 2 Standard. The downstream data rates extend from 32 kb/s to 8.192 Mb/s. The upstream data rates extend from 32 kb/s to 640 kb/s.

Bit Rate (kb/s)		
	min	max
Downstream	32	8192
Upstream	32	640

**Table 3: ANSI T1.413 Payload Bit Rates**

### G.992.2 Data Rates

Data rates for G.992.2 mode are likewise partitioned at 32kb/s increments. The downstream data rates extend from 64 kb/s to 1.536 Mb/s. The upstream data rates extend from 32 kb/s to 512 kb/s.

Bit Rate (kb/s)		
	min	max
Downstream	64	1536
Upstream	32	512

**Table 4: G.992.2 Payload Bit Rates**

### Power Consumption (without use of a 3.3V regulator)

Bit Rate (kb/s)	
Power Supply	Data Mode
+5V Digital	0.10 W
+5V Analog	0.25 W
+3.3V	1.155 W
+12V	0.84 W
Total:	2.345 W

### Software Requirements

#### *Processor*

Intel-compatible Pentium or higher

#### *Operating System*

- \* Microsoft Windows NT4.0
- \* Microsoft Windows 95/98