



# **Modem-16 Module User Manual**

**Part Number 1200181L1**



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**FEDERAL COMMUNICATIONS COMMISSION RADIO FREQUENCY INTERFERENCE  
STATEMENT:**

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio frequencies. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

**WARNING** *Change or modifications to this unit not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.*



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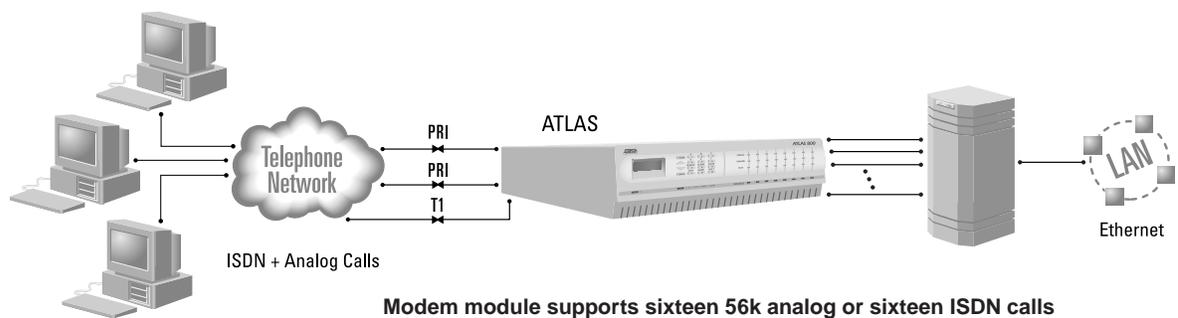
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## MODEM-16 MODULE OVERVIEW

The Modem-16 Module combines with other ATLAS components to implement a high-capacity modem pool in the ATLAS Integrated Access System. The Modem-16 Module, which occupies a single slot in the ATLAS chassis, supports sixteen K56flex modem calls or sixteen ISDN connections. Using the ATLAS Async-232 Module provides remote users with dial-in access to external equipment through EIA-232 ports. ATLAS provides support for up to 48 modem or ISDN users per system. Figure 1-1 shows a sample application of the Modem-16 Module.



**Figure 1-1. ATLAS Remote Access Application**

## FUNCTIONAL DESCRIPTION

The Modem-16 Module installs into any available slot in the ATLAS 800 chassis. The status of the module itself, as well as the circuits to which it interfaces, can be viewed from the ATLAS front panel. Additional status information is available via the terminal menu, accessible through either a VT-100 terminal connected to the ATLAS Base Unit's control port, or via a Telnet session established through the Base Unit's Ethernet port. The Modem-16 Module can be configured and application software can be downloaded using the terminal menu.

## Features

### Analog Resources

- Sixteen analog resources per modem module
- Compatible with K56flex, ITU V.34(bis), ITU V.32bis, V.32, V.23, V.22bis, V.22, Bell 212A and Bell 103 modulation schemes
- V.42 and MNP1-4 Error Correction support
- V.42bis and MNP5 Data Compression support
- Individual enable / disable of analog resources available in the system
- Software-upgradable to comply with the V.90 standard when it becomes available
- Basic Hayes AT command set capability

### Digital Resources

- Sixteen digital resources per modem module
- 56 Kbps and 64 Kbps data rates
- Individual enable / disable of digital resources available in the system

## Specifications

### Analog Resources

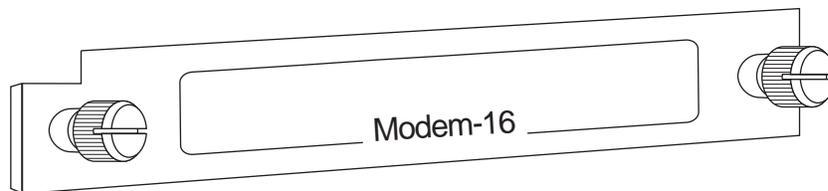
<b>Client-to-Server Data Rates</b>	52-32 Kbps, 33.6 Kbps, 31.2 Kbps, 28.8 Kbps, 26.4 Kbps, 24 Kbps, 21.6 Kbps, 19.2 Kbps, 16.8 Kbps, 14.4 Kbps, 12 Kbps, 9600 bps, 7200 bps, 4800 bps, 2400 bps, 1200 bps, 300 bps
<b>Server-to-Server Data Rates</b>	33.6 Kbps, 31.2 Kbps, 28.8 Kbps, 26.4 Kbps, 24 Kbps, 21.6 Kbps, 19.2 Kbps, 16.8 Kbps, 14.4 Kbps, 12 Kbps, 9600 bps, 7200 bps, 4800 bps, 2400 bps, 1200 bps, 300 bps
<b>Data Format</b>	Serial, binary, asynchronous
<b>Compatibility</b>	K56flex, V.34(bis), ITU V.32bis, V.32, V.23, V.22bis, V.22, Bell 212A and 103/113
<b>Error Correction</b>	V.42 (LAPM) or MNP 3 & 4
<b>Data Compression</b>	V.42bis, MNP5
<b>Transmit Level</b>	-12 dBm for K56flex, -14 dBm for all others

### Digital Resources

<b>Line Rate</b>	56Kbps and 64Kbps
<b>Line Codes</b>	2B1Q
<b>Framing Options</b>	Framing per ANSI T1.601 - 1992

## PHYSICAL DESCRIPTION

The Modem-16 Module provides no external interfaces. Both the network and customer interfaces are provided on other ATLAS components. Information is passed to and from the Modem-16 Module via ATLAS' internal bussing scheme. See Figure 1-2 for an illustration of the Modem-16 Module.



**Figure 1-2.** Modem-16 Option Module



## UNPACK AND INSPECT

Carefully inspect the Modem-16 Module for shipping damages. If damage is suspected, file a claim immediately with the carrier and then contact ADTRAN Technical Support. If possible, keep the original shipping container for use in returning the Modem-16 Module for repair or for verification of shipping damage.

## Contents of ADTRAN Shipment

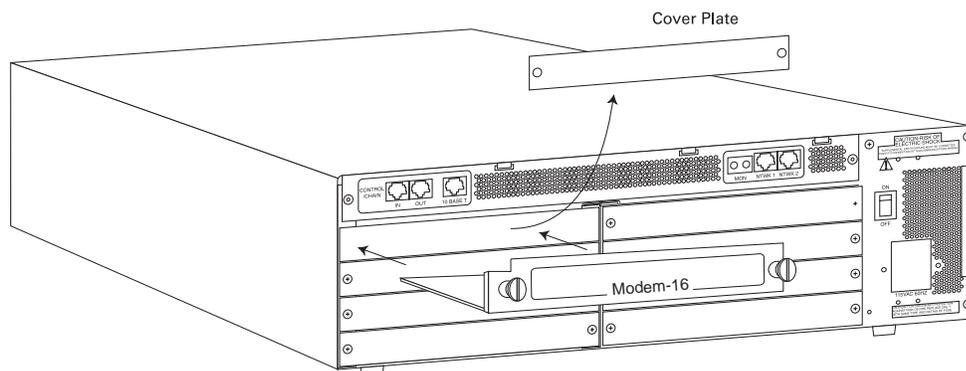
The following items are included in the ADTRAN shipment:

- Modem-16 Module
- *Modem-16 Module User Manual* (insert into main *ATLAS User Manual*)

## INSTALLING THE MODEM-16 MODULE

The installation procedure is described below, and Figure 2-1 shows the proper placement of the option module.

1. Remove the cover plate (corresponding to the slot in which the Modem-16 Module will be installed) from the ATLAS chassis rear panel.
2. Slide the Modem-16 Module into the ATLAS chassis until the module is positioned firmly against the front of the ATLAS unit.
3. Fasten the thumbscrews at both edges of the option module.
4. Complete installation of remaining modules and Base Unit as specified in the *Installation* chapter of the *ATLAS User Manual*.



**Figure 2-1. Installing the Modem-16 Module**

---

## POWER-UP AND INITIALIZATION

When the Modem-16 Module is inserted into the ATLAS chassis, the front panel STATUS indicator blinks red, yellow, and green for a time. Previously configured settings for the Modem-16 Module are automatically restored upon power-up. When the Modem-16 Module is ready for operation, the STATUS indicator remains solid green. At this time a system self-test can be invoked, as described in *ATLAS User Manual*.



**NOTE** *This startup sequence may take up to two minutes.*

### Failed Self-Test

The terminal menu self-test log records self-test failures for the Modem-16 Module. Analog resources which fail self-test are disabled after power-up initialization is complete. Performing a hardware reset via the terminal menu may recover these failed resources.

## WARRANTY AND CUSTOMER SERVICE

ADTRAN will replace or repair this product within five years from the date of shipment if the product does not meet its published specification, or if it fails while in service. For detailed warranty, repair, and return information, refer to the ADTRAN Equipment Warranty and Repair and Return Policy Procedure (see the last page of this manual for pertinent information).

A return material authorization (RMA) is required prior to returning equipment to ADTRAN.

For service, RMA requests, or more information, see the last page of this manual for the toll-free contact number.

**OVERVIEW**

You can configure and control the Modem-16 Module from several sources, as shown in Table 3-1. The *ATLAS User Manual* provides detailed instructions on operating each of the supported management approaches. The remainder of this chapter describes the menu items available for managing the Modem-16 Module using the terminal menu.

**Table 3-1. Management Methods for the Modem-16 Module**

Source	Purpose
ATLAS Front Panel	For minimal configuration and status support
Terminal Menu	For detailed configuration, status, and diagnostics
Simple Network Management Protocol (SNMP)	For reporting alarm conditions and system status (no configuration)

*You must have the appropriate password level to edit items using the terminal menu. (See the section **Access Passwords** in the *ATLAS User Manual* for detailed information on working with passwords.)*

**NOTE**

***Security level 1** users can view and edit every available field. **Security level 5** users can view any field, but they cannot edit. Each menu description in this section indicates the required password level required for write and read access.*

**TERMINAL MENU STRUCTURE**

ATLAS uses a form of hierarchical menus to access all of its features. The top-most menu level leads to submenus which are grouped by functionality. All submenu options display in the VT-100 terminal window.

You can use the **Modules** terminal menu to configure and control the Modem-16 Module. The **Modules** menu option, *Type*, shows the Modem-16 Module as **M56K-16** (see Figure 3-1). The following sections describe the **Modules** menu and its submenus.

ATLAS 800/Modules								
	Slt	Type	Menu	Alarm	Test	State	Status	Rev
System Info	0	Sys Ctrl	[+]	[OK]	[OFF]	ONLINE	Online	J
System Status	1	UBRI-8	[+]	[n/a]	[n/a]	ONLINE	No Response	-
System Config	2	T1/PRI-4	[+]	[n/a]	[n/a]	ONLINE	No Response	-
System Utility	3	V35Nx-4	[+]	[n/a]	[n/a]	ONLINE	No Response	-
Modules	4	EMPTY				ONLINE	Empty	-
Dedicated Maps	5	M56K-16	[+]	OK	OFF	ONLINE	Online	C
Dial Plan	6	ASYNC-16	[+]	[OK]	[OFF]	ONLINE	Online	A
	7	EMPTY				ONLINE	Empty	-
	8	EMPTY				ONLINE	Empty	-

SYS: OK CSU:ONLN 1:ALARM 2:ALARM 3:ALARM 4: -- 5: OK 6: OK 7: -- 8: --  
 Access module menus ^Z=help 0:50

Figure 3-1. Modules Menu

## MENU ACCESS

The ATLAS System Controller automatically detects the presence of the Modem-16 Module when it is installed in the system. To access the **Modules** menu and submenus, use the keyboard arrow keys to scroll to the appropriate row and column; then press **ENTER** on the keyboard. For example, to view the **Menus** submenu for M56K-16, use the keyboard arrow keys to move to the row **M56K-16** and the column **Menu**; then press **ENTER** on the keyboard.



**NOTE** Refer to the *ATLAS User Manual* for detailed instructions on how to navigate through the terminal menu.

## MODEM-16 MENU DESCRIPTIONS

The following paragraphs (Slt (slot), Type, Menu, Alarm, Test, State, Status, and Rev (revision)) describe the **Modules** menu and submenus.

### Slt (Slot)

Read security: 5

Displays the number of available slots in the ATLAS chassis. Slot 0 refers to the ATLAS Base Unit.

### Type

Write security: 3; Read security: 5

Displays the module type currently installed in the slot or the module type you plan to install in the slot. If a Modem-16 Module is installed, the **Type** field automatically defaults to **M56K-16** (the Modem-16 Module). You can use this field to preconfigure the system before installing modules by specifying the module that you want to install into each slot.



If a module is installed, **Type** automatically displays the name of the installed module, and it cannot be set to any other option.

### **Menu**

Read security: 5

Displays additional status and configuration submenus for the Modem-16 Module. (To access the submenus for this item, use the arrow keys to scroll to the Menu column for the module you want to edit, and press **Enter**.)

### **Alarms**

Read security: 5

Displays whether there is an alarm condition on the Modem-16 Module. Press **Enter** in this field to activate the Alarm menu.

### **Test**

Read security: 5

Displays whether the Modem-16 Module is executing a test. Press **Enter** in this field to activate the Test menu.

### **State**

Read security: 5

Displays whether the module is online or offline. Even though a module is physically installed, it must be marked *Online* for it to be considered an available resource. Marking an installed module *Offline* may be useful in system troubleshooting. If you choose *Offline*, the module will not be in alarm condition, but will display *Offline*.



Only if **State** reads **Online**, can the ATLAS use an installed module for any data bandwidth.

### **Status**

Read security: 5

Displays status information on the Modem-16 Module. Table 3-2 describes status messages that may appear and their meanings.

### **Rev (Hardware Revision)**

Read security: 5

Displays the hardware revision of the Modem-16 Module.

**Table 3-2. Modem-16 Module Status Menu Messages**

Message	Meaning	Comments
<b>Online</b>	The module is enabled and is responding to the system controller's status polls.	This is the normal response of the system.
<b>No Response</b>	The module is enabled but is not responding to the system controller's status polls.	This response indicates either a problem in the system or the module is not installed.
<b>Empty</b>	The system controller has not detected the presence of a module in the option slot, nor has a module been manually enabled for this option slot.	
<b>Offline</b>	The module is installed but has been taken Offline by a user.	The module is still responding to controller polls.
<b>Offline / No Response</b>	The module is installed but has been taken Offline by a user. The module is not responding to polls.	This response indicates either a problem in the system or the module is not installed.
<b>Not Ready</b>	The module is installed and performing startup initialization of the modems.	The initialization of the Modem-16 should take less than two minutes.

## MODEM-16 MODULE SUBMENUS

Figure 3-2 shows the **Menu** submenus for the Modem-16 Module. The following sections describe these options.

**Figure 3-2. Menu Panel**

## Info

Read Security: 5

Displays module and software information for the option module (see Figure 3-3).



**Figure 3-3. Modules/Info Panel**

### Part Number

Read Security: 5

Displays the part number of the module in a read-only field.

### Serial Number

Read Security: 5

Displays the Modem-16 Module's serial number in a read-only field.

### Board Revision

Read Security: 5

Displays the printed circuit board revision of the Modem-16 Module in a read-only field.

### Firmware Revision

Read Security: 5

Displays the firmware revision of the Modem-16 Module in a read-only field.

## Status

Read Security: 5

Displays the **Status** submenus for both analog and digital resources available on the Modem-16 Module.

### Analog Resource Session Status

Read Security: 5

This submenu displays session status information for the analog resources available on the Modem-16 Module (see Figure 3-4).

CO Emulator/Modules [61/M56K-16] Menus/Status/Analog Rsrc Session Status						
Analogue Rsrc Session Status	Rsrc	Status	Modulation	Rx Rate	Tx Rate	Error C
Analogue Rsrc Connection Stats	1	In Use	K56Flex	31.2K	50K	LAPM
Analogue Rsrc I/O Stats	2	In Use	K56Flex	31.2K	50K	LAPM
Digital Rsrc Session Status	3	In Use	K56Flex	31.2K	50K	LAPM
Digital Rsrc Connection Stats	4	In Use	K56Flex	31.2K	50K	LAPM
Digital Rsrc I/O Stats	5	In Use	K56Flex	31.2K	50K	LAPM
	6	In Use	K56Flex	31.2K	50K	LAPM
	7	In Use	U.34bis	26.4K	19.2K	LAPM
	8	In Use	K56Flex	31.2K	26.4K	LAPM
	9	In Use	U.34bis	28.8K	26.4K	LAPM
	10	In Use	K56Flex	31.2K	50K	LAPM
	11	In Use	K56Flex	31.2K	50K	LAPM
	12	In Use	K56Flex	31.2K	26.4K	LAPM
	13	In Use	K56Flex	28.8K	26.4K	LAPM
	14	In Use	U.34bis	28.8K	19.2K	LAPM
	15	In Use	K56Flex	31.2K	50K	LAPM
	16	In Use	K56Flex	31.2K	50K	LAPM

SYS:ALRM CSU:ONLN 1: -- 2:ONLN 3: -- 4:ONLN 5:ONLN 6:ONLN 7:ONLN 8:ONLN  
 ^Z=help 10:53

Figure 3-4. Status Submenu

**Resource**

Read Security: 5

Indicates the resource number of the analog resource listed. On the Modem-16 Module, analog resources are numbered 1-16 and digital ISDN resources are numbered 17-32.

**Resource Status**

Read Security: 5

Indicates the current status of the particular analog call resource and displays new activity as it occurs. Table 3-3 defines the possible status display values.

Table 3-3. Analog Call Resource Status

Display Value	Meaning
n/a	Card is not able to determine the status of the analog call resource.
<b>Available</b>	Indicates this resource is available for use as an analog call resource.
<b>In Use</b>	Indicates this resource is currently being used in an analog call.
<b>Testing</b>	Indicates this resource is in a test mode and may be unavailable for use.
<b>Disabled</b>	Indicates this resource has been disabled for use as an analog call resource. This may be done automatically by the system if a given analog resource does not initialize properly.



System resource usage for analog and digital call resources can be viewed under the System Status menu of the ATLAS. This menu provides detailed resource availability information for each resource type, including hourly average available, minimum available, and number of times there were no available resources of a particular type.

**Modulation**

Read Security: 5

Displays the modulation scheme being used by the analog resource for a currently active call. If the analog resource is not in use, this field will display **n/a**.

**Rx Rate**

Read Security: 5

Displays the receive bit rate of the analog resource for a currently active call. If the analog resource is not in use, this field will display **n/a**.

**Tx Rate**

Read Security: 5

Displays the transmit bit rate of the analog resource for a currently active call. If the analog resource is not in use, this field will display **n/a**.

**Error Correction**

Read Security: 5

Displays the error correction mode being used by the analog resource for a currently active call. If the analog resource is not in use, this field will display **n/a**.

**Data Compression**

Read Security: 5

Displays the data compression mode being used by the analog resource for a currently active call. If the analog resource is not in use, this field will display **n/a**.

**Last Disconnect Reason**

Read Security: 5

Displays the reason for the previous disconnect which occurred on this analog resource. If no disconnect has occurred on this analog resource, this field will display **n/a**.

**Line Parameters**

Read Security: 5

Displays technical details about the analog resource for the currently active call. This information may be used when troubleshooting modem connection problems with the Modem-16 Module.

**Analog Resource Connection Statistics**

Read Security: 5

This menu option displays the connection statistics for the analog resources available on the Modem-16 Module (see Figure 3-5).

ATLAS 800/Modules[51/M56K-16] Menus/Status/Analog Rsrc Connection Stats						
Analog Rsrc Session Status	Rsrc	Attempts	Completed	Failures	Reset Stats	Rat
Analog Rsrc Connection Stats	1	0	0	0	<+>	
Analog Rsrc I/O Stats	2	0	0	0	<+>	
Digital Rsrc Session Status	3	0	0	0	<+>	
Digital Rsrc Connection Stats	4	0	0	0	<+>	
Digital Rsrc I/O Stats	5	0	0	0	<+>	
	6	0	0	0	<+>	
	7	0	0	0	<+>	
	8	0	0	0	<+>	
	9	0	0	0	<+>	
	10	0	0	0	<+>	
	11	0	0	0	<+>	
	12	0	0	0	<+>	
	13	0	0	0	<+>	
	14	0	0	0	<+>	
	15	0	0	0	<+>	
	16	0	0	0	<+>	

SYS: OK CSU:ONLN 1:ALRM 2:ALRM 3:ALRM 4: -- 5: OK 6:ALRM 7: -- 8: --  
 ^Z=help 1:13

**Figure 3-5. Analog Resources Connection Status Submenu**

#### Connection Attempts

Read Security: 5

Displays the number of connections attempted for this analog resource since the last reset.

#### Connection Completions

Read Security: 5

Displays the number of successful connections for this analog resource.

#### Connection Failures

Read Security: 5

Displays the number of unsuccessful connections for this analog resource. It is defined as the number of connection attempts minus the number of successful connections.

#### Reset Connection Statistics

Write Security: 5 Read Security: 5

Resets the connection statistics for the given analog resource. This option resets the connection attempts, connection completions, and connection failures fields for the analog resource.

#### Connection Rate Statistics

Read Security: 5

Displays connection rate statistics for selected data rates for the given analog resource. The number of connections at a rate or range of rates is displayed.

#### Analog Resource I/O Statistics

Read Security: 5

Displays the input and output statistics for the analog resources available on the option module (see Figure 3-6). All statistics are for the current active call and are reset once the call becomes disconnected.

- **Transmit** direction refers to data flow from the Modem-16 Module analog resource to the remote client modem.
- **Receive** direction refers to data flow from the remote client modem to the Modem-16 Module analog resource.

ATLAS 800/Modules[5]/M56K-16 Menus/Status/Analog Rsrc I/O Stats							
Analog Rsrc	Session Status	Rsrc	TX-Bytes	RX-Bytes	RX-Ovrns	RX-Prty	RX-Frme
Analog Rsrc	Connection Status	1	0	0	0	0	0
Analog Rsrc	I/O Stats	2	0	0	0	0	0
Digital Rsrc	Session Status	3	0	0	0	0	0
Digital Rsrc	Connection Status	4	0	0	0	0	0
Digital Rsrc	I/O Stats	5	0	0	0	0	0
		6	0	0	0	0	0
		7	0	0	0	0	0
		8	0	0	0	0	0
		9	0	0	0	0	0
		10	0	0	0	0	0
		11	0	0	0	0	0
		12	0	0	0	0	0
		13	0	0	0	0	0
		14	0	0	0	0	0
		15	0	0	0	0	0
		16	0	0	0	0	0
SYS: OK CSU:ALRM 1:ALRM 2:ALRM 3:ALRM 4: -- 5: OK 6: OK 7: -- 8: --							
^Z=help 1:56							

**Figure 3-6. Analog Resources I/O Statistics Submenu**

**Transmit Byte Count**

Read Security: 5

Displays the number of data bytes transmitted by the analog resource during the current call. This parameter is reset once the call is disconnected.

**Receive Byte Count**

Read Security: 5

Displays the number of data bytes received by the analog resource during the current call. This parameter is reset once the call is disconnected.

**Receive Overruns**

Read Security: 5

Displays the number of receiver overruns which occurred on the analog resource during the current call. A receiver overrun occurs when the client modem transmits data too fast for the analog resource to keep up. This causes data to be lost. Once the call is disconnected, the parameter is reset.

**Receive Parity Errors**

Read Security: 5

Displays the number of bytes received which contained parity errors by the analog resource during the current call. This parameter is reset once the call is disconnected.

**Receive Framing Errors**

Read Security: 5

Displays the number of framing errors detected by the analog resource during the current call. This parameter is reset once the call is disconnected.

**Receive PPP CRC Errors**

Read Security: 5

Displays the number of received PPP frames with invalid CRC values from the remote client modem. This is used only when the analog resource is performing Sync-to-Async PPP conversion. This parameter is reset once the call is connected and accumulates only during tunnelling sessions.

**Reset I/O Statistics**

Write Security: 5 Read Security: 5

Resets the input and output statistics for the given analog resource. This options resets the transmit and receive statistics for the analog resource.

**Digital Resource Session Status**

Read Security: 5

Displays the session status information for the digital resources available on the Modem-16 Module (see Figure 3-7).

CO Emulator/Modules [61/M56K-16	Menus/Status/Digital Rsrc	Session Status	Bit Rate
Analog Rsrc Session Status			
Analog Rsrc Connection Stats	17	In Use	64K
Analog Rsrc I/O Stats	18	In Use	64K
Digital Rsrc Session Status	19	In Use	64K
Digital Rsrc Connection Stats	20	In Use	64K
Digital Rsrc I/O Stats	21	In Use	64K
	22	In Use	64K
	23	In Use	64K
	24	In Use	64K
	25	In Use	64K
	26	In Use	64K
	27	In Use	64K
	28	In Use	64K
	29	In Use	64K
	30	In Use	64K
	31	In Use	64K
	32	In Use	64K

SYS=ALRM CSU=ONLN 1: -- 2:ONLN 3: -- 4:ONLN 5:ONLN 6:ONLN 7:ONLN 8:ONLN  
^Z=help 10:54

**Figure 3-7. Digital Resource Session Status Panel****Resource**

Read Security: 5

Indicates the resource number of the digital resource listed. On the Modem-16 Module, analog resources are numbered 1-16 and digital resources are numbered 17-32.

**Resource Status**

Read Security: 5

Indicates the current status of the particular digital call resource. Table 3-4 defines the status display values.

**Table 3-4. Digital Call Resource Status**

Display Value	Meaning
<b>n/a</b>	Card is not able to determine the status of the digital call resource.
<b>Available</b>	Indicates this resource is available for use as a digital call resource.
<b>In Use</b>	Indicates this resource is currently being used in a digital call.
<b>Testing</b>	Indicates this resource is in a test mode and may be unavailable for use.
<b>Disabled</b>	Indicates this resource has been disabled for use as a digital call resource.



System resource usage for analog and digital call resources can be viewed under the System Status menu of the ATLAS. This menu provides detailed resource availability information for each resource type, including hourly average available, minimum available, and number of times a resource type was exhausted.

**Bit Rate**

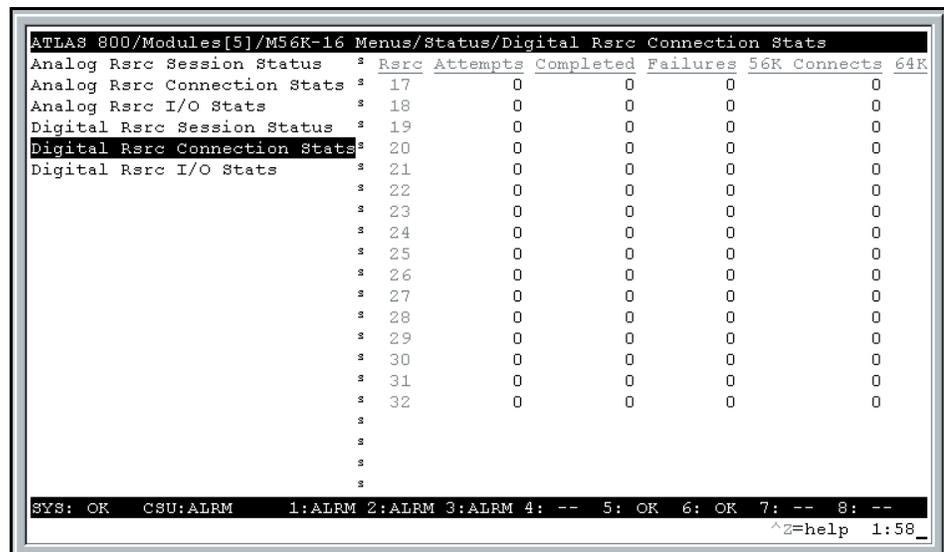
Read Security: 5

Displays the bit rate of the digital resource for a currently active call. If the digital resource is not in use, this field will display **n/a**.

**Digital Resource Connection Statistics**

Read Security: 5

Displays the connection statistics for the digital resources available on the Modem-16 Module (see Figure 3-8).



**Figure 3-8. Digital Resource Connection Statistics Panel**

**Connection Attempts**

Read Security: 5

Displays the number of connections attempted for this digital resource.

**Connection Completions**

Read Security: 5

Displays the number of successful connections for this digital resource.

**Connection Failures**

Read Security: 5

Displays the number of unsuccessful connections for this digital resource.

This number is defined as the number of connection attempts minus the number of successful connections.

**Connects at 56K**

Read Security: 5

Displays the number of successful connections at 56 Kbps for this digital resource.

**Connects at 64K**

Read Security: 5

Displays the number of successful connections at 64 Kbps for this digital resource.

**Reset Connection Statistics**

Write Security: 5 Read Security: 5

Resets the connection statistics for the given digital resource. Resets the connection attempts, connection completions, connection failures, connects at 56K, and connects at 64K fields for the digital resource.

**Digital Resource I/O Statistics**

Read Security: 5

Displays the input and output statistics for the digital resources available on the Modem-16 Module (see Figure 3-9). All statistics are for the current active call and are reset once the call becomes disconnected.

- **Transmit** direction refers to data flow from the Modem-16 Module digital resource to the remote device.
- **Receive** direction refers to data flow from the remote device to the Modem-16 Module digital resource.

	Rsrc	TX-Frame	RX-Frame	TX-Bytes	RX-Bytes	RX-Ovrns
Analog Rsrc Session Status	17	0	0	0	0	0
Analog Rsrc Connection Stats	18	0	0	0	0	0
Analog Rsrc I/O Stats	19	0	0	0	0	0
Digital Rsrc Session Status	20	0	0	0	0	0
Digital Rsrc Connection Stats	21	0	0	0	0	0
Digital Rsrc I/O Stats	22	0	0	0	0	0
	23	0	0	0	0	0
	24	0	0	0	0	0
	25	0	0	0	0	0
	26	0	0	0	0	0
	27	0	0	0	0	0
	28	0	0	0	0	0
	29	0	0	0	0	0
	30	0	0	0	0	0
	31	0	0	0	0	0
	32	0	0	0	0	0

SYS: OK CSU:ALRM 1:ALRM 2:ALRM 3:ALRM 4: -- 5: OK 6: OK 7: -- 8: --  
 ^Z=help 2:01\_

**Figure 3-9. Digital Resource I/O Statistics Panel**

**Transmit Frame Count**

Read Security: 5

Displays the number of frames of data transmitted by the digital resource during the current call. This parameter is reset once the call is disconnected.

**Receive Frame Count**

Read Security: 5

Displays the number of frames of data received by the digital resource during the current call. This parameter is reset once the call is disconnected.

**Transmit Byte Count**

Read Security: 5

Displays the number of bytes of data transmitted by the digital resource during the current call. This parameter is reset once the call is disconnected.

**Receive Byte Count**

Read Security: 5

Displays the number of bytes of data received by the digital resource during the current call. This parameter is reset once the call is disconnected.

**Receive Overruns**

Read Security: 5

Displays the number of receiver overruns which occurred on the digital resource during the current call. A receiver overrun occurs when the client device transmits data too fast for the Modem-16 Module digital resource to keep up. This causes data to be lost. Once the call is disconnected, this parameter is reset.

**Receive CRC Errors**

Read Security: 5

Displays the number of frames of data received with an invalid CRC by the digital resource during the current call. This parameter is reset once the call is disconnected.

**Receive Frames Aborted**

Read Security: 5

Displays the number of aborted receive frames detected by the digital resource during the current call. This parameter is reset once the call is disconnected.

**Reset I/O Statistics**

Write Security: 5; Read Security: 5

Resets the input and output statistics for the given digital resource. Resets the transmit and receive statistics for the digital resource.

**Configuration**

Read Security: 5

Displays the configuration submenus available for both analog and digital resources available on the option module.

**Analog Resource**

Read Security: 5

Displays the configuration parameters for the analog resources available on the Modem-16 Module (see Figure 3-10).

Analogue Rsrc	Rsrc	Status	Operation	Hardware Reset
Digital Rsrc	1	Available	Enabled	<+>
	2	Available	Enabled	<+>
	3	Available	Enabled	<+>
	4	Available	Enabled	<+>
	5	Available	Enabled	<+>
	6	Available	Enabled	<+>
	7	Available	Enabled	<+>
	8	Available	Enabled	<+>
	9	Available	Enabled	<+>
	10	Available	Enabled	<+>
	11	Available	Enabled	<+>
	12	Available	Enabled	<+>
	13	Available	Enabled	<+>
	14	Available	Enabled	<+>
	15	Available	Enabled	<+>
	16	Available	Enabled	<+>

SYS: OK CSU:ALRM 1:ALRM 2:ALRM 3:ALRM 4: -- 5: OK 6: OK 7: -- 8: --  
^Z=help 2:02\_

**Figure 3-10. Analog Resource Panel****Resource**

Read Security: 5

Indicates the resource number of the analog resource listed. On the Modem-16 Module, analog resources are numbered 1-16 and digital resources are numbered 17-32.

**Resource Status**

Read Security: 5

Indicates the current status of the particular analog call resource. Table 3-5 defines the status display values.

**Table 3-5. Configuration Analog Call Resource Status**

Display Value	Meaning
<b>n/a</b>	Card is not able to determine the status of the analog call resource.
<b>Available</b>	Indicates this resource is available for use as an analog call resource.
<b>In Use</b>	Indicates this resource is currently being used in an analog call.
<b>Testing</b>	Indicates this resource is in a test mode and may be unavailable for use.
<b>Disabled</b>	Indicates this resource has been disabled for use as an analog call resource. This may be done automatically by the system if a given analog resource does not initialize properly.



*System resource usage for analog and digital call resources can be viewed under the System Status menu of the ATLAS. This menu provides detailed resource availability information for each resource type, including hourly average available, minimum available, and number of times resource was exhausted.*

**Operation**

Write Security: 3 Read Security: 5

Selects the mode of operation for the particular analog call resource. Table 3-6 lists the permissible selections.

**Table 3-6. Analog Call Operation Modes**

Operation Mode	Meaning
<b>Enabled</b>	Indicates the selected analog resource is available for use as an analog call resource in the system.
<b>Disabled</b>	Indicates this resource is not available for use as an analog call resource in the system. If a call is active on this resource when changing the operation to Disabled, it will be immediately dropped.
<b>Auto Disabled</b>	Indicates this resource will not be available for use as an analog call resource once the current call has been completed.

**Initiate Hardware Reset**

Write Security: 3 Read Security: 5

Reset a specific analog resource on the modem module. Any calls currently active will be dropped.

**Digital Resource**

Read Security: 5

Displays the configuration parameters for the digital resources available on the modem module.

**Resource**

Read Security: 5

Indicates the resource number of the digital resource listed. On the Modem-16 Module, analog resources are numbered 1-16 and digital resources are numbered 17-32.

**Resource Status**

Read Security: 5

Indicates the current status of the particular digital call resource. Table 3-7 defines the status display values.

**Table 3-7. Configuration Digital Call Resource Status**

<b>Display Values</b>	<b>Meaning</b>
<b>n/a</b>	Card is not able to determine the status of the digital call resource.
<b>Available</b>	Indicates this resource is available for use as a digital call resource.
<b>In Use</b>	Indicates this resource is currently being used in a digital call.
<b>Testing</b>	Indicates this resource is in a test mode and may be unavailable for use.
<b>Disabled</b>	Indicates this resource has been disabled for use as a digital call resource.

**NOTE**

*System resource usage for analog and digital call resources can be viewed under the System Status menu of the ATLAS. This menu provides detailed resource availability information for each resource type, including hourly average available, minimum available, and number of times a resource type was exhausted.*

**Operation**

Write Security: 3 Read Security: 5

This menu option selects the mode of operation for the particular digital call resource. Table 3-8 displays permissible selections.

**Table 3-8. Digital Operation Modes**

<b>Operation Mode</b>	<b>Meaning</b>
<b>Enable</b>	Indicates this resource is available for use as a digital call resource in the system.
<b>Disabled</b>	Indicates this resource is not available for use as a digital call resource in the system. If a call is active on this resource when changing the operation to Disabled, it will be immediately dropped.
<b>Auto Disabled</b>	Indicates this resource will not be available for use as a digital call resource once the current call has been completed.

## **ATLAS FEATURES USED WITH MODEM-16 MODULE OPTIONS**

In addition to the Modem-16 Module menu items, two additional ATLAS menu items may be operated in conjunction with the Modem-16 Module. These are **Factory Restore** and **System Self-test**.

### **Factory Restore**

You can restore the factory default settings for the Modem-16 Module by pressing **F** on the keyboard while the cursor is positioned over the **SlT** number (this restores the factory settings for all of the module options) or while the cursor is positioned over an individual field (this restores factory settings only for the particular field).

### **System Self-Test**

System Self-test, a submenu of the ATLAS main menu item System Utility, executes both the Modem-16 Module internal test and the ATLAS internal test. The results of the self-test are displayed in the LCD. For additional information on self-test, see the *ATLAS User Manual*.

When *System Self-test* displays, place the cursor on it and press **ENTER** to execute the test. The unit continuously changes the display on the self-test log screen until all test results are shown.



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# Product Support Information

## Presales Inquiries and Applications Support

Please contact your local distributor, ADTRAN Applications Engineering, or ADTRAN Sales:

Applications Engineering (800) 615-1176

Sales (800) 827-0807

## Post-Sale Support

Please contact your local distributor first. If your local distributor cannot help, please contact ADTRAN Technical Support and have the unit serial number available.

Technical Support (888) 4ADTRAN

## Repair and Return

If ADTRAN Technical Support determines that a repair is needed, Technical Support will coordinate with the Customer and Product Service (CAPS) department to issue an RMA number. For information regarding equipment currently in house or possible fees associated with repair, contact CAPS directly at the following number:

CAPS Department (256) 963-8722

Identify the RMA number clearly on the package (below address), and return to the following address:

ADTRAN Customer and Product Service  
6767 Old Madison Pike  
Progress Center  
Building #6 Suite 690  
Huntsville, Alabama 35807

RMA # \_\_\_\_\_

