



# **Octal and Quad FXS Modules**

## **User Manual**

**Part Number 1200309L1 (Octal)**

**Part Number 1200328L1 (Quad)**




901 Explorer Boulevard  
P.O. Box 140000  
Huntsville, AL 35814-4000  
(256) 963-8000

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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.

Shielded cables must be used with this unit to ensure compliance with Class A FCC limits.

 <b>CAUTION</b>	<i>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.</i>
--	--

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

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## OCTAL AND QUAD FXS MODULES OVERVIEW

The Octal and Quad FXS Modules are members of the ATLAS 550 family of products. Use the Octal and Quad FXS Modules in applications that require analog phone interfaces. Potential applications include analog PBX trunk circuits, modem banks, extension telephones, etc.

The Octal and Quad FXS Modules feature eight and four ports, respectively, and provide talk battery, off-hook supervision, and ringing. The modules combine with the ATLAS 550 Base Unit for FXS analog voice applications. The Octal and Quad FXS Modules support loop-start and ground-start operation. Call progress tones, where necessary, are provided to the modules by the ATLAS 550 Base Unit.

## Functional Description

The Octal and Quad FXS Modules install in any available option slot in the ATLAS 550 chassis. Status information is available via the terminal menus, accessible through either a VT-100 terminal connected to the ATLAS 550 control port or via a Telnet session established through the Base Unit's Ethernet port. Use the terminal menu to configure the Octal and Quad FXS Modules and to download application software.

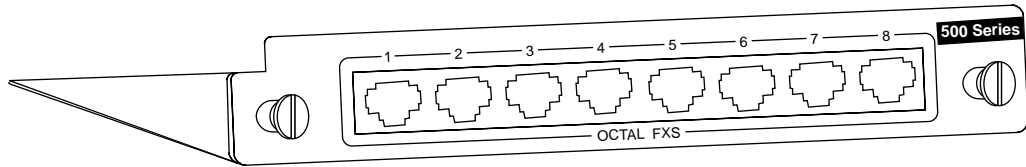
## Features

The Octal and Quad FXS Modules have the following features:

- Eight/four voice ports
- Loop start and ground start
- $\mu$ -law
- Up to 100 ohms copper loop  
(equivalent distance of 1900 feet of 24 AWG wire)
- Hot-swappable
- Flash download firmware
- Rings into 5 REN per card

## Physical Description

The Octal and Quad FXS Modules plug into any available option slot in the rear of the ATLAS 550 chassis. Figure 1-1 shows the Octal FXS Module.



**Figure 1-1. Octal FXS Module**

The label over each modular connector refers to the corresponding port on the module.

## BEFORE INSTALLING THE OCTAL AND QUAD FXS MODULES

Carefully unpack and inspect the Octal and Quad FXS Modules for shipping damages. If you suspect damage occurred during shipping, file a claim immediately with the carrier and then contact ADTRAN Technical Support (see the last page of this manual for pertinent information). If possible, keep the original shipping container for returning the modules for repair or for verification of shipping damage.



**NOTE** All references to the Octal FXS Module in this section are applicable to the Quad FXS Module, with the difference that the Quad FXS Module has four ports instead of eight.

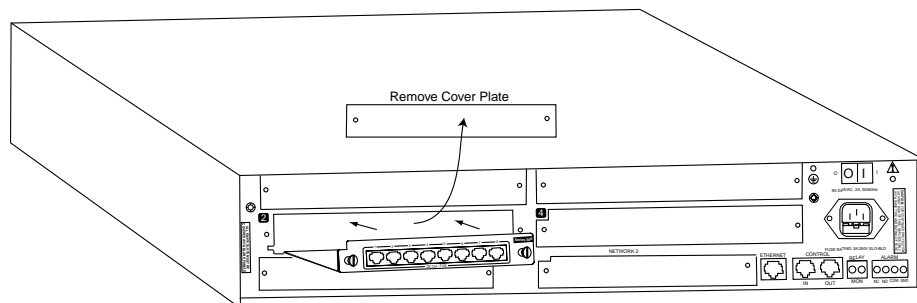
## Shipping Contents

The ADTRAN shipment includes the following items:

- Octal FXS Module or Quad FXS Module
- *Octal and Quad FXS Modules User Manual*  
(Insert into the *ATLAS 550 User Manual*.)

## INSTALLING THE OCTAL AND QUAD FXS MODULES

Figure 2-1 represents the actions required to install the Octal and Quad FXS Modules properly, as described in the Step/Action table on page 2-2.



**Figure 2-1. Installing the Octal and Quad FXS Modules**

Instructions for Installing the Octal and Quad FXS Modules	
Step	Action
1	Remove the cover plate from the appropriate option slot in the ATLAS 550 rear panel.
2	Slide the module into the option slot until the it is firmly positioned against the front of the chassis.
3	Secure the thumbscrews at both edges of the module. Tighten with a screwdriver.
4	Connect the cables to the associated device(s).
5	Complete the installation of any remaining modules and Base Unit as specified in the Installation chapter of the <i>ATLAS 550 User Manual</i> .

**WARNING**

*Option modules are intended to be serviced by qualified service personnel only.*

## WIRING

Each module port has a single 8-pin modular jack. Connector pinout is compatible with (USOC) RJ-11C and is shown in Table 2-1.

**Table 2-1. Pinout Connection**

PIN	NAME	DESCRIPTION
1, 2, 3, 6, 7, 8	Unused	—
4	Ring	Ring to and from the analog phone interface
5	Tip	Tip to and from the analog phone interface

## POWER UP AND INITIALIZATION

The Octal and Quad FXS Modules require no initialization input during the power-up sequence, as described in the *ATLAS 550 User Manual*. Any previously configured setting for the Octal and Quad FXS Modules is automatically restored upon power-up.

## Operation Alarms

The red ALARM LED (located with the Module LEDs on the front panel) illuminates when an alarm condition is detected.

## OVERVIEW

**NOTE**

*All references to the Octal FXS Module in this section are applicable to the Quad FXS Module, with the differences that the Quad FXS Module has four ports instead of eight and is displayed as **FXS-4** in the menus.*

The Octal FXS Module is controlled by the ATLAS 550 Base Unit terminal menu. The terminal menu allows for detailed configuration, status, and testing of the Octal FXS Module.

Configuration of the Octal FXS Module is completed in two areas of the terminal menu:

1. **General** configuration items (see the menu tree on page 3-2) for the Octal FXS Voice Module are set using **MODULES/FXS-8 MENUS/CONFIG**.
2. **Specific** configuration items depend on how the option module is used and are displayed in the **DIAL PLAN** menus (see Appendix A).

Access the terminal menu using either a VT-100 terminal attached to the ATLAS 550 Base Unit's control port or a Telnet session established through the Base Unit's Ethernet port. The *ATLAS 550 User Manual* provides detailed instructions on each of these management approaches.

**NOTE**

*To edit items in the terminal menu, you must have the appropriate password level. Each menu description in this section indicates the password level required for write and read access. See "Access Passwords" in the *ATLAS 550 User Manual* for detailed information on working with passwords. Security level 0 users can view and edit every available field. Security level 5 users can view any field but cannot edit.*

## TERMINAL MENU STRUCTURE

The ATLAS 550 uses a hierarchical menu structure to provide access to all of its features. The top-most menu level leads to submenus which are grouped by functionality. All menu items display in the terminal window. To access the Octal FXS Module menus, activate the **MODULES** menu. The following sections describe the menu items for the Modules menu.



*Refer to the ATLAS 550 User Manual for detailed instructions on navigating through the terminal menu.*

## MODULES MENU

The ATLAS 550 system controller automatically detects the presence of the Octal FXS Module when it is installed in the system. To see the menus for the Octal FXS Module via the terminal menu, use the arrow keys to scroll to the **MODULES** menu and press **Enter** to access the module choices in the **TYPE** column. (The Octal FXS Module displays as FXS-8.) Figure 3-1 shows the **MODULES** menu (see also the menu tree in Figure 3-2 on page 3-3).

ATLAS 550/Modules[Slt3]/Module type										
	Slt	Type	Menu	Alarm	Test	State	Status	Rev		
System Info	Slt0	Sys Cir1	[+]	OK	OFF	ONLINE	Online	D		
System Status	Ntw1	T1/PRI-1	[+]	[OK]	[OFF]	ONLINE	Online	B		
System Config	Ntw2	EMPTY				ONLINE	Empty	-		
System Utility	Slt1	FXS-8	[+]	OK	[OFF]	ONLINE	Online	B		
Modules	Rsc1	EMPTY				ONLINE	Empty	-		
Packet Manager	Slt2	U35Nx-2	[+]	[OK]	[OFF]	ONLINE	Online	B		
Router	Rsc2	EMPTY				ONLINE	Empty	-		
Dedicated Maps	Slt3	FXS-8	[+]	OK	[OFF]	ONLINE	Online	B		
Dial Plan	Rsc3	EMPTY				ONLINE	Empty	-		
	Slt4	U-BRI-4	[+]	[OK]	[OFF]	ONLINE	Online	A		
	Rsc4	EMPTY				ONLINE	Empty	-		
SVS=ONLN  NETWK1=ONLN  NETWK2: --  1: OK  2=ONLN  3: OK  4=ONLN Module type  *A=more *Z=help  9:33										

Figure 3-1. Modules Menu



Modules	Slit		Part Number	
			Serial Number	
	Type	Info	Assembly Revision	
			Firmware Revision	
	Menu			
	Alarm		Port	
		Status	Status	
			Rx ABCD	
			Tx ABCD	Port
	Test (Shortcut to Test)	Test		Test 2W
				Tx ABCD
	State		Port	1kHz Tone
			Port Name	Loopback
	Configuration	Rx Gain	0 dB through -6 dB	
		Tx Gain	+3 dB through -6 dB	
Status				
Rev		2W Impedance	600 + 2.16 $\mu$	
		Coding Scheme	$\mu$ -Law	

Figure 3-2. Modules Menu Tree

**SLT**

Read security: 5

Displays the number of the available slots in the ATLAS 550 chassis. Slot 0 refers to the ATLAS 550 unit. This field is read-only.

**TYPE**

Write security: 3; Read security: 5

Displays the type of module currently installed in the slot or the type of module you plan to install in the slot. If an Octal FXS Module is installed, the **TYPE** field automatically defaults to **FXS-8**.

You can use this field to preconfigure a system before actually installing modules by simply specifying the module that you want to install in each slot. If you intentionally leave a slot empty, mark it as **EMPTY** to avoid getting a Not Responding message.

**NOTE**

**TYPE** automatically displays the name of an installed module. If you want to preconfigure the slot for a different type of module, you must set this field to **EMPTY** before selecting another module type.

<b>MENU</b>	Displays additional status and configuration menus for the selected module. To access the submenus for this item, use the arrow keys to scroll to the <b>MENU</b> column for the module you want to edit, and press <b>Enter</b> . For detailed information on each submenu item, see the section <i>Octal FXS Module Menu Options</i> on page 3-5.
<b>ALARM</b>	Read security: 5 Displays an alarm condition on the Octal FXS Module. Press <b>Enter</b> in this field to activate the menu.
<b>TEST</b>	Read security: 5 Displays the test name if the Octal FXS Module is executing a test. Press <b>Enter</b> in this field to activate the menu. Tests include <b>TEST 2W, Tx ABCD, 1KHZ TONE</b> , and <b>LOOPBACK</b> . See <i>Test</i> on page 3-7 for a description of each test and its options.
<b>STATE</b>	Displays module status as either <b>ONLINE</b> or <b>OFFLINE</b> . Even though a module is physically installed, it must be marked <b>ONLINE</b> for it to be considered an available resource. This parameter allows an installed module to be marked <b>OFFLINE</b> , which may be useful in system troubleshooting. If you choose <b>OFFLINE</b> , the module will not be in alarm condition, but will display <b>OFFLINE</b> .



Once a module is installed, **STATE** must be set to **ONLINE** for the ATLAS 550 to use the module for any data bandwidth.

**STATUS** This read-only field provides status information on the Octal FXS Module. The following messages may display:

**ONLINE** The module is enabled and is responding to the system controller's status polls. This is the normal response of the system.



The ATLAS 550 **ONLINE LED** illuminates green when a call is active on any of the voice ports.

**NO RESPONSE** 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 that the module is not installed.

**EMPTY** The system controller has not detected the presence of a module in the 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.
<b>REV</b>	This read-only field displays the assembly revision of the Octal FXS Module.

## OCTAL FXS MODULE MENU OPTIONS

Figure 3-3 shows the menu options available for the Octal FXS Module (see also the menu tree in Figure 3-2 on page 3-3). The following sections describe these **MENUS** options.

ATLAS 550/Modules/S1t11/FXS-8 Menu	
FXS-8 Menu	Info [+]
Test Activity	Status [+]
	Test [+]
	Config [+]

Figure 3-3. Octal FXS Module Menu Options

---

<b>INFO</b>	Provides read-only information about module part number, serial number, and assembly revision.
<b>PART NUMBER</b>	Displays the part number of the module.
<b>SERIAL NUMBER</b>	Displays the serial number of the module.
<b>ASSEMBLY REVISION</b>	Displays the assembly revision.
<b>FIRMWARE REVISION</b>	Displays the firmware revision.

---

<b>STATUS</b>	Displays the status of each of the eight Octal FXS Module ports.
<b>PORT</b>	Displays the port number.
<b>STATUS</b>	Displays the call or test status of each voice port. This field may display the following information:
<b>INACTIVE</b>	Port preconfigured but the FXS module is not present.
<b>DISABLED</b>	FXS module is present but the port is not in the <b>DIAL PLAN</b> .

<b>IDLE</b>	<p><b>Loop Start</b> – indicates the signaling method is set to loop start and the port is waiting for seizure or an incoming call (see also <i>Loop Start</i> on page A-2).</p> <p><b>Ground Start</b> – indicates the signaling method is set to ground start and the tip conductor is grounded (see also <i>Ground Start</i> on page A-2).</p>
<b>TIP OPEN</b>	<p><b>Loop Start</b> – indicates the signaling method is set to loop start and a forward disconnect state (FXS port removes the battery). See also <i>Loop Start</i> on page A-2.</p> <p><b>Ground Start</b> – indicates the signaling method is set to ground start and <i>the unit is in</i> normal idle condition (see also <i>Ground Start</i> on page A-2).</p>
<b>OFFHOOK</b>	The FXS port has detected an offhook condition (loop current flowing).
<b>REVERSE BATTERY</b>	The FXS port has reversed T/R polarity.
<b>TEST</b>	This generic FXS port test indicator is used when multiple tests are being run or if the test is not a 2W test.
<b>TEST – ACTIVE</b>	The FXS port is in test mode. Active test is selected.
<b>TEST – OFFHOOK</b>	The FXS port is in test mode. Active / Reverse Battery test is selected, but Offhook condition is detected.
<b>TEST – REV. BAT</b>	The FXS port is in test mode. Reverse Battery test is selected.
<b>TEST – RINGING</b>	The FXS port is in test mode. Ringing test is selected.
<b>TEST – TIP OPEN</b>	The FXS port is in test mode. Tip Open test is selected.
<b>TEST – RING GND</b>	The FXS port is in test mode. Tip Open test is selected, but ring ground is detected.
<b>TEST – (-R)TRIP</b>	The FXS port is in test mode. Ringing test is selected, but an offhook condition is detected.
<b>RX ABCD</b>	Displays the receive signaling bits for FXS operation. If the port is in the <b>DIAL PLAN</b> , this signaling represents Loop Start/Ground Start signaling (also see <i>Signaling Method</i> on page A-2).

**Tx ABCD**

Displays the transmit signaling bits for FXS operation. This signaling represents Loop Start/Ground Start signaling if the port is in the **DIAL PLAN** (also see *Signaling Method* on page A-2).

Receive and transmit signaling bits represent an LS/GS interface between the ATLAS 550 controller and the voice port. The bit pattern is formatted ESF RBS. Signaling bits have local significance only. For example, if the voice port is mapped to a DS0 that has been set up for E&M signaling, the voice port will still show LS/GS signaling.

**TEST**

Displays the test name if the Octal FXS Module is executing a test. Press **Enter** in this field to activate the menu.

**TEST 2W**

Activates 2W (FXS) tests on a per-port basis. Options include **OFF**, **ACTIVE**, **TIP OPEN**, **REV. BATTERY**, **DISABLED**, and **RINGING**. Table 3-1 displays the state of the 2W conductors during each test.

**NOTE**

*2W tests disrupt calls in progress.*

**Table 3-1. Test 2W**

Test	Tip Output	Ring Output
Off	No test active	No test active
Active	Ground	Supervision voltage
Tip Open	High impedance	Supervision voltage
Rev. Battery	Supervision voltage	Ground
Disabled <sup>a</sup>	High impedance	High impedance
Ringing	Ringing voltage	Ringing voltage

a. Disables the output of the FXS port; it does *not* disable the test.

**Tx ABCD**

Forces the transmit (Tx) Robbed Bit Signaling (RBS) to a specified value. Values include **OFF**, **0000**, **0101**, **1010**, and **1111**.

**NOTE**

*Calls may be affected when activating the Tx ABCD test. This test is not valid when the port is used in the **DIAL PLAN**.*

**1-KHZ TONE**

Sends a 1 KHz tone into the following locations, based on test selection: **NEAR** sends the tone out the 2W FXS port, while **FAR** sends the tone into the digital PCM stream of the ATLAS 550 controller. The tests are useful for verifying a voice path.

**LOOPBACK**


Activates loopback tests on a per-port basis.

**OFF** Normal operation

**ANALOG** Loops the 2W on itself.

**DIGITAL** Loops digital data entering the FXS-port from the ATLAS controller on itself.

**BOTH** Processes both Analog and Digital Loopback tests.

 **NOTE** *Loopback tests disrupt calls in progress.*

---

**CONFIGURATION**

Provides menu options for configuring the module.

**PORT**

Identifies the port.

**PORT NAME**


Allows the user to assign a meaningful name to the port.

**RX GAIN**

Adjusts the (+)Gain and (-)Attenuation of a digital signal transmitted out an FXS port (Digital-to-Analog.) The range includes 0, -3, and -6 dB.

**TX GAIN**

Adjusts the (+)Gain and (-)Attenuation of a digital signal transmitted into an FXS. The range includes +3, 0, -3, and -6 dB.

 **NOTE** *When the digital signal is connected through the PSTN, a setting of 0 dB should be used.*

**2W IMPEDANCE**

2 Wire input impedance is set to 600 ohms +2.16 uF. This is a read-only field.

**CODING SCHEME**

The PCM coding scheme is set to  $\mu$ -Law. This is a read-only field.

## ATLAS 550 FEATURES USED WITH OCTAL FXS MODULE OPTIONS

Two additional ATLAS 550 menu items can operate in conjunction with the Octal FXS Module: **FACTORY RESTORE** and **RUN SELFTEST**.

**FACTORY RESTORE** You can restore the factory default settings for an Octal FXS Module by pressing **F** either while the cursor is over the **SLT** number (this action restores the factory settings for all of the module options) or while the cursor is over an individual field (this action restores factory settings for the particular field only).

**RUN SELFTEST** **RUN SELFTEST**, a submenu of the ATLAS 550 main menu item **TEST**, executes both the Octal FXS Module internal test and the ATLAS 550 internal test. When **RUN SELFTEST** 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. For additional information on **RUN SELFTEST**, see the *ATLAS 550 User Manual*.







All references to the Octal FXS Module in this chapter are applicable to the Quad FXS Module, with the differences being that the Quad Module has four ports instead of eight and is displayed as **FXS-4** in the menus.

## INTERFACE CONFIGURATION

The **IFCE CONFIG** option for the **DIAL PLAN** menu (see Figure A-1) sets configuration parameters for the endpoint. These parameters vary by the type of port selected. The **DIAL PLAN** menus are only accessible when using terminal mode. To access these options, select **DIAL PLAN** from the top level menu.

```

ATLAS 550/Dial Plan/User Term
System Info      Network Term [+]
System Status    User Term      [+]
System Config    Global Param   [+]
System Utility
Modules
Packet Manager
Router
Dedicated Maps
Dial Plan

SYS:ALARM  NETWK1:ALARM  NETWK2:ALARM  1:ALARM  2:ALARM  3: --  4:ALARM
Termination of connections to user equipment          *Z=help 12:06

```

Figure A-1. Dial Plan Menus

## OCTAL FXS MODULE INTERFACE CONFIGURATION

The following sections describe **USER TERM** configuration settings for the Octal FXS Module when using the **DIAL PLAN** menus.

### USER TERM

When interfacing to user equipment (terminal adapters), the Octal FXS Module acts like the network. In this case, configure the **DIAL PLAN** as follows: Select **USER TERM** and define **SLT** as **FXS-8**. The following **IFCE CONFIG** options are then available.

<b>PORTS AVAILABLE</b>	Read security: 5 Shows port allocation for the endpoint. The characters used to define the allocation have the following meanings:
	<ul style="list-style-type: none"><li><b>0-9</b> Describes available ports, as indicated by the displayed digit. This digit is the last digit of the port number.</li><li><b>!</b> The endpoint uses this port.</li><li><b>s</b> The switched dial plan uses this port elsewhere.</li><li><b>S</b> The switched dial plan uses this port elsewhere and a conflict exists with this endpoint.</li><li><b>n</b> One or more dedicated (nailed) maps use this port.</li><li><b>N</b> One or more dedicated (nailed) maps use this port and a conflict exists with this endpoint.</li><li><b>-</b> Indicates that this is the wrong kind of port for this endpoint.</li></ul>
<b>NUMBER OF PORTS</b>	Write security: 2; Read security: 5 Defines the number of ports that could be used to answer calls to the numbers defined in the Accept Call list. The ports are contiguous beginning with the port number selected and the number of ports.
<b>SIGNALING METHOD</b>	Defines to the ATLAS 550 the type of signaling to be used on this analog interface. The signaling selected needs to match the 2W supervision of the connected trunk. Options include <b>LOOP START</b> and <b>GROUND START</b> .
<b>LOOP START</b>	Defines to the ATLAS 550 the most common 2W supervision.
<b>GROUND START</b>	Defines to the ATLAS 550 the 2W supervision used by some PBXs.
<b>FORWARD DISCONNECT</b>	Sets the time for a loop current to stop flowing once the other end terminates the call. This feature is useful for applications such as Fax Servers and ACDs. This option is only applicable for <b>LOOP START</b> applications. Options include <b>DISABLED</b> , <b>600 MS</b> , <b>1000 MS</b> , and <b>2000 MS</b> .
<b>DIRECT INWARD DIALING</b>	Write security: 3; Read security: 5 Defines whether the end-user equipment requires digits to be delivered after going off-hook.
<b>CALLER ID NUMBER</b>	Assigns a calling party number to a port when it originates a call and the call exits a PRI interface.
<b>DID DIGITS TRANSFERRED</b>	Defines the number of digits sent to the end-user equipment. This field displays only if <b>DIRECT INWARD DIALING</b> is set to <b>ENABLED</b> .

## STRIP MSD

Write security: 3; Read security: 5

Strips a selected quantity (choose from **NONE**, **1**, **2**, and **3**) of the Most Significant Digits (MSD) of a dialed number prior to being forwarded out of the port.

### EXAMPLE:

A network port could be set to accept all calls beginning with 9 (9\$), and then with **STRIP MSD** set to **1**, all digits would be sent toward the network except the leading 9.



### NOTE

**STRIP MSD** does not affect **CALL ACCEPT** criteria. All of the digits (including the MSDs that are subsequently stripped) are used as accept criteria.

## SOURCE ID

Write security: 3; Read security: 5

Simplifies the creation of a **DIAL PLAN** in applications where the criterion for switching calls to a certain endpoint is a function of which endpoint originated the call.

- Default value = 0. The default ID for all endpoints is 0 and all accept numbers is 0. With default values, all calls are routed based only on the dialed number.
- Multiple endpoints can have the same **SOURCE ID**.
- When creating the **CALL ACCEPT** list, specify a **SOURCE ID(s)** as well as a dialed number or range of dialed numbers to accept.

### EXAMPLE:

An application requires that all calls that originate from Port 1 of the Octal FXS Module in Slot 1 be switched to Port 2 of that same module. Assign a unique Source ID (e.g., 7) to Port 1 of the module, and then configure Port 2 to accept calls only from that unique Source ID (7).

## DIAL ON OFFHOOK

Write security: 3; Read security: 5

Defines a number that is automatically sent to the switchboard when a call on this port goes offhook.



### NOTE

The Dial on Offhook number must be specific (i.e., no "wild cards").



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## Product Support Information

### Pre-Sales 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  
Building #6 Suite 690  
Huntsville, Alabama 35807

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

