



# **Octal and Quad FXO Modules**

## **User Manual**

**Part Number 1200310L1 (Octal)**

**Part Number 1200329L1 (Quad)**



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FCC regulations require that the following information be provided to the customer in this manual:

1. This equipment complies with Part 68 of the FCC rules. On the side or bottom of this equipment is a label that contains, among other information, the FCC Registration Number and Ringer Equivalence Number (REN), if applicable, for this equipment. If required, this information must be given to the telephone company.
2. The following information may be required when applying to your local telephone company for leased line facilities.

| Service Type       | REN/SOC   | FIC   | USOC  |
|--------------------|-----------|-------|-------|
| FXO (Loop Start)   | 0.1B/9.0F | 02LS2 | RJ11C |
| FXO (Ground Start) | 0.1B/9.0F | 02GS2 | RJ11C |

3. An FCC-compliant telephone cord with modular plug may be provided with this equipment. This equipment is designed to be connected to the telephone network or premises wiring using a compatible modular jack which is FCC Part 68 compliant. See Chapter 2, *Installation* for details.
4. If this equipment causes harm to the telephone network, the telephone company may temporarily discontinue service. If possible, advance notification is given; otherwise, notification is given as soon as possible. The telephone company will advise the customer of the right to file a complaint with the FCC.
5. The telephone company may make changes in its facilities, equipment, operations or procedures that could affect the proper operation of this equipment. If this happens, the telephone company will provide advance notification and the opportunity to make the necessary modifications to maintain uninterrupted service.
6. If experiencing difficulty with this equipment, please contact ADTRAN at (256) 963-8722 for repair or warranty information. If the equipment is causing harm to the network, the telephone company may request this equipment to be disconnected from the network until the problem is resolved or it is certain that the equipment is not malfunctioning.
7. This equipment contains no user serviceable parts.
8. The REN is used to determine the quantity of devices which may be connected to the telephone line. Excessive RENs on the telephone line may result in the devices not ringing in response to an incoming call. In most, but not all areas, the sum of RENs should not exceed five (5.0). To be certain of the number of devices that may be connected to a line, as determined by the total RENs, contact the local telephone company.

## Federal Communications Commission (FCC) 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.

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

**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.*

## Canadian Emissions Requirements

This digital apparatus does not exceed the Class A limits for radio noise emissions from digital apparatus as set out in the interference-causing equipment standard entitled "Digital Apparatus," ICES-003 of the Department of Communications.

Cet appareil numérique respecte les limites de bruits radioélectriques applicables aux appareils numériques de Class A prescrites dans la norme sur le matériel brouilleur: "Appareils Numériques," NMB-003 édictée par le Ministre des Communications.

## **Limited Product Warranty**

ADTRAN warrants that for five (5) years from the date of shipment to Customer, all products manufactured by ADTRAN will be free from defects in materials and workmanship. ADTRAN also warrants that products will conform to the applicable specifications and drawings for such products, as contained in the Product Manual or in ADTRAN's internal specifications and drawings for such products (which may or may not be reflected in the Product Manual). This warranty only applies if Customer gives ADTRAN written notice of defects during the warranty period. Upon such notice, ADTRAN will, at its option, either repair or replace the defective item. If ADTRAN is unable, in a reasonable time, to repair or replace any equipment to a condition as warranted, Customer is entitled to a full refund of the purchase price upon return of the equipment to ADTRAN. This warranty applies only to the original purchaser and is not transferable without ADTRAN's express written permission. This warranty becomes null and void if Customer modifies or alters the equipment in any way, other than as specifically authorized by ADTRAN.

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## **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).

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.



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## OCTAL AND QUAD FXO MODULES OVERVIEW

The Octal and Quad FXO Modules are for use in the ATLAS 550 family of products in applications that require analog phone interfaces. Potential applications include termination of analog PSTN trunks and connections to PBX station-side interfaces (OPX). The Octal and Quad FXO Modules support loop-start and ground-start operation.

## Functional Description

The Octal and Quad FXO 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 FXO Modules and to download application software.

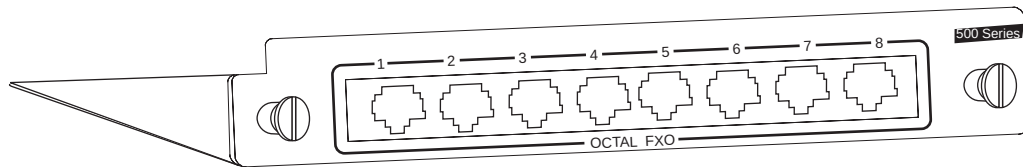
## Features

Features of the Octal and Quad FXO Modules are listed here:

- Eight/four voice ports
- Loop start and ground start
- $\mu$ -law
- Hot-swappable
- Part 68 compliant
- Flash downloadable firmware

## Physical Description

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



**Figure 1-1. Octal FXO Module**

The labels over the modular connectors refer to the corresponding ports on the Octal and Quad FXO Modules.

## BEFORE INSTALLING THE OCTAL AND QUAD FXO MODULES

Carefully unpack and inspect the 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 FXO Module in this chapter are applicable to the Quad FXO Module, with the difference being that the Quad FXO Module has four ports instead of eight.*

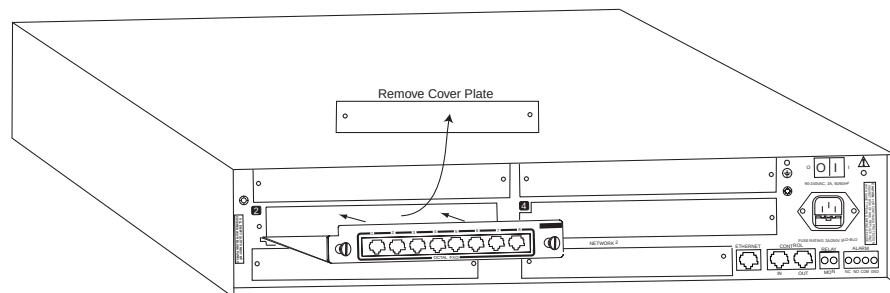
## Shipping Contents

The ADTRAN shipment includes the following items:

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

## INSTALLING THE OCTAL AND QUAD FXO MODULES

Figure 2-1 represents the actions required to install the module properly, as described in the Step / Action table below.



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

| Instructions for Installing the Octal and Quad FXO 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 module 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 installation of 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 FXO 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 FXO Modules is automatically restored upon power-up.



## Failed Self-Test

If the module fails self-test, a message displays on the terminal menu self-test log. See the *ATLAS 550 User Manual* for details.

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

The Octal and Quad FXO Modules are controlled by the ATLAS 550 Base Unit terminal menu. The terminal menu allows for detailed configuration, status, and testing of the Octal and Quad FXO Modules.

Configuration of the Octal and Quad FXO Modules is completed in two areas:

1. **General** configuration menus are located in the Octal and Quad FXO Modules **CONFIGURATION** menu (**MODULES/FX0-8/CONFIG**).
2. **Specific** configuration items depending on how the option module is used, will show up in the **DIAL PLAN** (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 and Quad FXO Modules, activate the **MODULES** menu. The Octal and Quad FXO Modules display as **FXO-8** under **TYPE**.



*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 and Quad FXO Modules when they are installed in the system. To see the menus for the Octal and Quad FXO Modules via the terminal menu, use the arrow keys to scroll to the **MODULES** menu and press **Enter** to access the module choices. Figure 3-1 shows the **MODULES** menu (see also the menu tree in Figure 3-2 on page 3-3). The following sections describe all the **MODULES** menu options.

| HILAS 550/Modules/Slt1/Module Type |      |          |      |       |       |        |        |     |  |
|------------------------------------|------|----------|------|-------|-------|--------|--------|-----|--|
|                                    | Slt  | Type     | Menu | Alarm | Test  | State  | Status | Rev |  |
| System Info                        | Slt0 | Sys Ctrl | [+]  | OK    | OFF   | ONLINE | Online | 0   |  |
| System Status                      | Mtw1 | T1/PRI-1 | [+]  | [OK]  | [OFF] | ONLINE | Online | B   |  |
| System Config                      | Mtw2 | EMPTY    |      |       |       | ONLINE | Empty  | -   |  |
| System Utility                     | Slt1 | FXS-8    | [+]  | OK    | [OFF] | ONLINE | Online | B   |  |
| Modules                            | Slt1 | 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  | -   |  |

SYS:ONLN    NETWK1:ONLN    NETWK2: --    1: OK    2:ONLN    3: OK    4:ONLN  
 Module type    A=more    Z=help    Y=338

### Figure 3-1. Modules Menu

|         |                            |                    |  |
|---------|----------------------------|--------------------|--|
| Modules | Slit                       | Part Number        |  |
|         | Type                       | Serial Number      |  |
|         | Menu                       | Board Revision     |  |
|         |                            | Assembly Revision  |  |
|         |                            |                    |  |
|         | Alarm                      | Port               |  |
|         | Status                     | Status             |  |
|         |                            | Rx ABCD            |  |
|         |                            | Tx ABCD            |  |
|         | Test<br>(Shortcut to Test) | Port               |  |
|         |                            | Test 2W            |  |
|         |                            | Tx ABCD            |  |
|         | State                      | 1kHz Tone          |  |
|         |                            | Loopback           |  |
|         |                            |                    |  |
|         | Configuration              | Port               |  |
|         |                            | Port Name          |  |
|         |                            | Rx Gain            |  |
|         | Status                     | 0 dB through -6 dB |  |
|         |                            | Tx Gain            |  |
|         |                            | 3 dB through -6 dB |  |
|         | Rev                        | 2W Impedance       |  |
|         |                            | 600 +2.16μ         |  |
|         | Coding Scheme              | μ-law              |  |
|         |                            |                    |  |

Figure 3-2. Menu Tree for Octal and Quad FXO Modules Menu

**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 or Quad FXO Module is installed, the **TYPE** field automatically defaults to **FXO-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 message that the module is not responding.



**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.

**MENU** 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 **MENU** column for the module you want to edit, and press **Enter**. For detailed information on each submenu item, see the section *Octal and Quad FXO Modules Menu Options* on page 3-5.

**ALARM** Read security: 5  
Displays an alarm condition on the module. Press **Enter** in this field to activate the menu.

**TEST** Read security: 5  
Displays the test name if the module is executing a test. Press **Enter** in this field to activate the menu. Tests include **TEST 2W, Tx ABCD, 1kHz TONE**, and **LOOPBACK**. See *Test* on page 3-7 for a description of each test and its options.

**STATE** Displays module status as either **ONLINE** or **OFFLINE**. Even though a module is physically installed, it must be marked as online for it to be considered an available resource. This parameter allows an installed module to be marked as offline, which may be useful in system troubleshooting. If you choose **OFFLINE**, the module will not be in alarm condition, but will display **OFFLINE**.



**NOTE** 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 and Quad FXO Modules. The following messages may display:

|                            |                                                                                                                                                                                   |
|----------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <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 that the module is not installed. |
| <b>EMPTY</b>               | 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.                                                                             |

**REV** This read-only field displays the assembly revision of the Octal and Quad FXO Modules.

OCTAL AND QUAD FXO MODULES MENU OPTIONS

Figure 3-3 shows the menu options available for the Octal and Quad FXO Modules (see also the menu tree in Figure 3-2 on page 3-3). The following sections describe these options.



Figure 3-3. Octal and Quad FXO Modules 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 and Quad FXO Modules ports.                                  |
| <b>PORT</b>     | Displays the port number.                                                                                   |
| <b>STATUS</b>   | Displays the call status of each voice port. The port status field for each port may display the following: |
| <b>INACTIVE</b> | The port is preconfigured, but the FXO module is not present.                                               |
| <b>DISABLED</b> | The FXO module is present, but the port is not in the <b>DIAL PLAN</b> .                                    |
| <b>IDLE</b>     | <b>LS</b><br>Port waiting for seizure or incoming call.                                                     |
|                 | <b>GS</b><br>Tip conductor grounded.                                                                        |

|                                   |                                                                                                                                                                                                                                                                                                                                                                                                                   |
|-----------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>TIP OPEN</b>                   | <b>LS</b><br>No Tip Ground detected.<br><br><b>GS</b><br>Normal idle condition.                                                                                                                                                                                                                                                                                                                                   |
| <b>OFFHOOK</b>                    | FXO port has closed the hook switch (loop current flowing).                                                                                                                                                                                                                                                                                                                                                       |
| <b>REVERSE<br/>BATTERY</b>        | FXO port has detected reverse T/R polarity.                                                                                                                                                                                                                                                                                                                                                                       |
| <b>TEST</b>                       | FXO port generic test indicator used when multiple tests are being run or if the test is not a 2W test.                                                                                                                                                                                                                                                                                                           |
| <b>TEST – LO</b>                  | FXO port in test. Loop Open test selected.                                                                                                                                                                                                                                                                                                                                                                        |
| <b>TEST – LC T/R<br/>OK</b>       | FXO port in test. Loop Closed test selected. Normal T/R polarity detected.                                                                                                                                                                                                                                                                                                                                        |
| <b>TEST – LC – No<br/>BATTERY</b> | FXO port in test. Loop Closed test selected. No Loop Battery detected.                                                                                                                                                                                                                                                                                                                                            |
| <b>TEST – LC – T/R<br/>ROLLED</b> | FXO port in test. Loop Closed test selected. Reverse T/R polarity detected.                                                                                                                                                                                                                                                                                                                                       |
| <b>TEST – RING<br/>GND</b>        | FXO port in test. Ring Ground test selected.                                                                                                                                                                                                                                                                                                                                                                      |
| <b>Rx ABCD</b>                    | Displays the receive signaling bits for FXO operation.                                                                                                                                                                                                                                                                                                                                                            |
| <b>Tx ABCD</b>                    | Displays the transmit signaling bits for FXO operation.<br><br>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 module is executing a test. Press **Enter** in this field to activate the menu.

**TEST 2W**

Activates 2W (FXO) tests on a per port basis. Test options include **OFF** (no tests are active), **LOOP OPEN**, **LOOP CLOSED**, and **RING GROUND**. Table 3-1 on page 3-7 displays information about the tests based on Tip and Ring output.

**NOTE**

*The 2W tests disrupt calls in progress.*

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

| Test        | Tip Output         | Ring Output        |
|-------------|--------------------|--------------------|
| Loop Open   | High impedance     | High impedance     |
| Loop Closed | Off-hook impedance | Off-hook impedance |
| Ring Ground | High impedance     | R to ground        |

**Tx ABCD**

Forces the Tx RBS to a specified value: **OFF**, **0000**, **0101**, **1010**, or **1111**.

**NOTE**

*Calls may be affected when activating this test.*

**1kHz TONE**

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

**LOOPBACK**

Activates Loopback tests per port as follows:

- Off** Normal operation.
- Analog** Loops the 2W test on itself.
- Digital** Loops digital data entering the FXO on itself.

**NOTE**

*Loopback tests disrupt calls in progress.*

|                      |                                                                                                                                                                         |
|----------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>CONFIGURATION</b> | Provides menu options for configuring the module.                                                                                                                       |
| <b>PORT</b>          | Identifies the port.                                                                                                                                                    |
| <b>PORT NAME</b>     | Allows the user to assign a meaningful name to the port.                                                                                                                |
| <b>RX GAIN</b>       | Allows loudness gain relative to the signal received by the FXO by setting the <b>Rx GAIN</b> . The gain is indicated in dB. Values include 0, -3, and -6 dB.           |
| <b>TX GAIN</b>       | Allows loudness gain relative to the signal transmitted by the FXO by setting the <b>Tx GAIN</b> . The gain is indicated in dB. Values range from +3, 0, -3, and -6 dB. |



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

## ATLAS 550 FEATURES USED WITH OCTAL AND QUAD FXO MODULES

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

|                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>FACTORY RESTORE</b> | You can restore the factory default settings for Octal and Quad FXO Modules by pressing <b>F</b> either while the cursor is over the <b>SLT</b> 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).                                                                                                                            |
| <b>RUN SELFTEST</b>    | <b>RUN SELFTEST</b> , a submenu of the ATLAS 550 main menu item <b>TEST</b> , executes both the Octal and Quad FXO Modules internal test and the ATLAS 550 internal test. When <b>RUN SELFTEST</b> displays, place the cursor on it and press <b>Enter</b> 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 <b>RUN SELFTEST</b> , see the <i>ATLAS 550 User Manual</i> . |

**NOTE**

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



Figure A-1. Dial Plan Menus

## OCTAL AND QUAD FXO MODULES INTERFACE CONFIGURATION

The following sections describe **NETWORK TERM** configuration settings for the Octal and Quad FXO Modules when using the **DIAL PLAN** menus.

## Octal and Quad FXO Modules: Network Termination

To interface directly with the network (PSTN) or to interface to the station side of a PBX, configure the **DIAL PLAN** as follows. Select **NETWORK TERM**, and define **SLT** as **FXO+**. The following **IFCE CONFIG** options are then available.

|                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                   |                                                          |                     |                                                                |
|------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|----------------------------------------------------------|---------------------|----------------------------------------------------------------|
| <b>PORTS AVAILABLE</b>       | <p>Read security: 5</p> <p>Shows port allocation for the endpoint. The characters used to define the allocation have the following meanings:</p> <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>       | <p>Write security: 2; Read security: 5</p> <p>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.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                   |                                                          |                     |                                                                |
| <b>SIGNALING METHOD</b>      | <p>Defines to the ATLAS 550 the type of signaling to be used across this trunk. The signaling selected needs to match the signaling being provided by the Network (PSTN). The available options include <b>LOOP START</b> and <b>GROUND START</b>.</p> <table><tr><td><b>LOOP START</b></td><td>Defines to the ATLAS 550 the most common 2W supervision.</td></tr><tr><td><b>GROUND START</b></td><td>Defines to the ATLAS 550 the 2W supervision used by some PBXs.</td></tr></table>                                                                                                                                                                                                                                                                                                                                     | <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>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>DIGIT SUPPRESSION</b>     | <p>Write security: 3; Read security: 5</p> <p>When enabled, no digits will be sent toward the Network / PBX after going off-hook on an outgoing call.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                   |                                                          |                     |                                                                |
| <b>DIRECT INWARD DIALING</b> | <p>Write security: 3; Read security: 5</p> <p>Defines whether the FXO port should accept digits from the network after answering an incoming call. Setting this field to <b>ENABLED</b> activates the following menus: <b>DID DIGITS TRANSFERRED</b>, <b>DID NUMBER PREFIX</b>, <b>STRIP MSD</b>, and <b>SOURCE ID</b>. Setting this field to <b>DISABLED</b> activates the following menus: <b>TRUNK NUMBER</b> and <b>SOURCE ID</b>.</p>                                                                                                                                                                                                                                                                                                                                                                                 |                   |                                                          |                     |                                                                |

## DID DIGITS TRANSFERRED

Write security: 3; Read security: 5  
Defines the number of digits sent to ATLAS 550 from the network if **DID** is used. This option only displays if **DID** is set to **ENABLED**.

## DID PREFIX

Write security: 3; Read security: 5  
Defines to the ATLAS 550 the prefix digits which are not received as a part of the **DIRECT INWARD DIALING (DID)** number. The ATLAS 550 uses the combination of prefix and DID number to determine the user endpoint that should receive the incoming call. This option only displays if **DIRECT INWARD DIALING** is set to **ENABLED**. If **DIRECT INWARD DIALING** is **DISABLED**, you must define the **TRUNK NUMBER** (see *Trunk Number* on page A-3).

## TRUNK NUMBER

Write security: 3; Read security: 5  
Defines the number to use to determine which user endpoint should receive the incoming call, when the Network connection does not provide DID digits. This field only displays when **DID** is set to **DISABLED**.

### EXAMPLE:

If a certain incoming DS0 (trunk) is meant to connect to an endpoint with the accept number of 963-8615, the trunk number would be set to 963-8615.



### NOTE

*The trunk number must be specific (i.e., no wild cards).*

## 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 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 only accept calls from that unique Source ID (7).

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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 # \_\_\_\_\_

