



# SpectraLink® 8000 Open Applications Interface (OAI) Gateway

## Administration Guide

For use with SpectraLink 8020/8030 and 8400 Series Wireless Telephones

March 2012 Edition  
1725-36029-001  
Version F



## Patent Information

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# About This Guide

SpectraLink's Open Application Interface (OAI) enables third-party computer applications to communicate with SpectraLink's Wireless Telephones. This document explains installation of the SpectraLink 8000 OAI Gateway manufactured for the SpectraLink Wireless Telephones by Polycom Corporation. The SpectraLink 8000 OAI Gateway provides an interface with an application server on the local area network (LAN) or RS-232 port. The installation process connects the SpectraLink 8000 OAI Gateway to an existing LAN.

## Related Documents

*SpectraLink 8400 Deployment Guide (1725-36724-001)*

*Polycom® UC Software Administrator's Guide (1725-11530-001) (for 84xx handsets)*

*SpectraLink 8000 Telephony Gateway: Administration Guide for SRP (1725-36028-001)*

*SpectraLink 8020/8030 Wireless Telephone Administration Guide for SRP (1725-36030-001)*

*SpectraLink e340/h340/i640 Wireless Telephone Configuration and Administration Guide (SRP) (72-1065-09)*

Available at

<http://www.polycom.com/usa/en/support/voice/wi-fi/wi-fi.html>

## Customer Support

Polycom wants you to have a successful installation. If you have questions, please contact our Customer Support Hotline at 1-888-POLYCOM (1-888-765-9266).

The hotline is open Monday through Friday, 6 a.m. to 6 p.m. Mountain time.

For Technical Support: [technicalsupport@polycom.com](mailto:technicalsupport@polycom.com)

For Knowledge Base:

<http://www.polycom.com/usa/en/support/voice/voice.html>

For Return Material Authorization: [rmacoordinator@polycom.com](mailto:rmacoordinator@polycom.com)

## Icons and Conventions

This manual uses the following icons and conventions.



Caution! Follow these instructions carefully to avoid danger.



Note these instructions carefully.

**Label**

This typeface indicates a key, label, or button on SpectraLink hardware.

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# The SpectraLink 8000 OAI Gateway

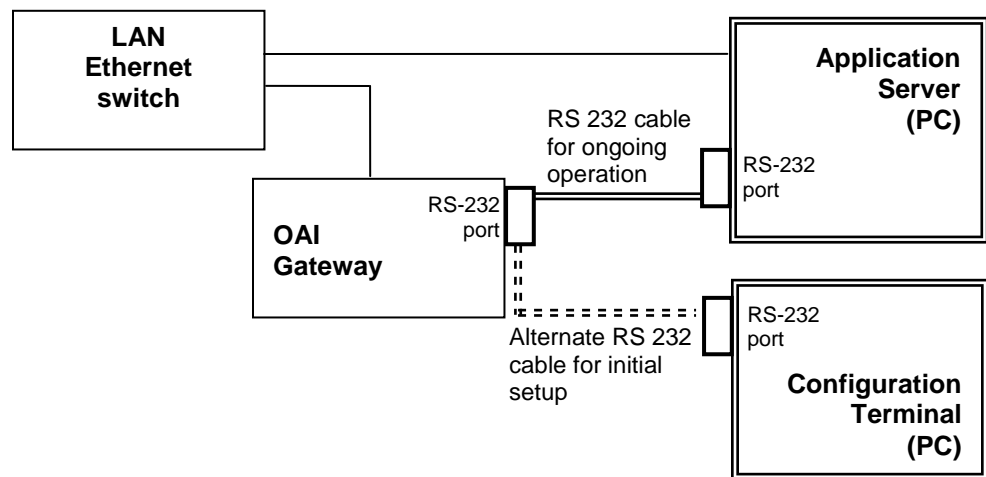
The SpectraLink 8000 OAI Gateway enables third-party applications to communicate directly with up to 10,000 SpectraLink Wireless Telephones, allowing users to retrieve and respond to information using their handsets.

The SpectraLink 8000 OAI Gateway is available in two models and several scaled capacity levels, please be sure that the OAI Gateway being configured has the appropriate capacity for your implementation.

<b>Polycom Model Number</b>	<b>Maximum Number of Users</b>
MOG600	64
MOG710	128
MOG720	256
MOG730	512
MOG740	1,024
MOG750	2,048

As shown in the diagram below, a single SpectraLink 8000 OAI Gateway is connected to the site's Local Area Network (LAN) via an Ethernet switch. The connection to the OAI Application Server can be accomplished by a direct connect (RS-232) or through the Ethernet connection, but may run only via one connection at a time.

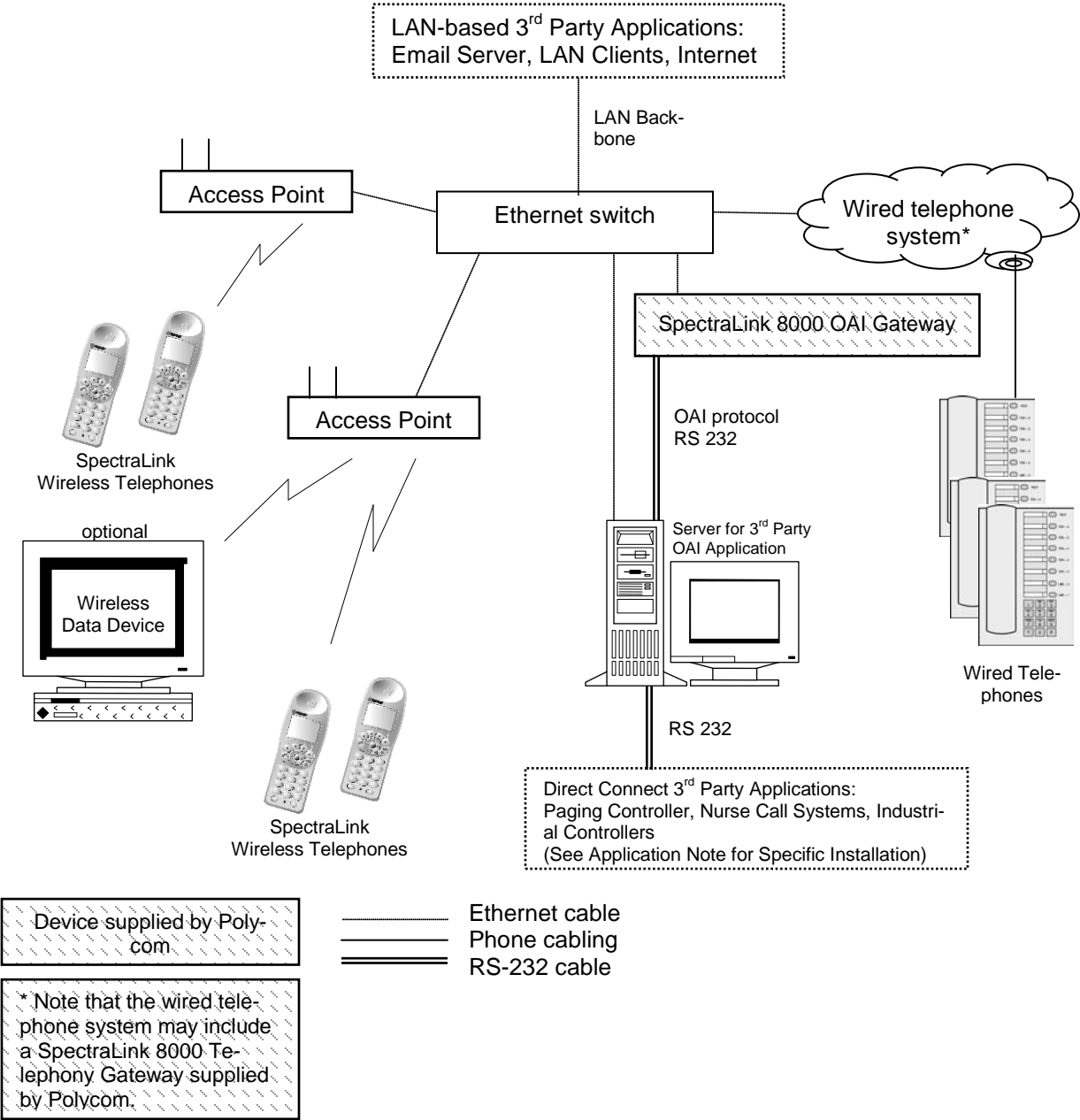
During setup, the IP address of the SpectraLink 8000 OAI Gateway must be set. Once the IP address is established, the Gateway can be accessed by the application server via the RS-232 port or the LAN via telnet.





# System Overview

At a typical site, the SpectraLink 8000 OAI Gateway is connected to the Ethernet switch via an RJ-45/Category 5 cable and the application server via the RS-232 port. The client system may include a LAN and its application server with a TAP connection to a communications device such as a paging controller.



## The SpectraLink 8000 OAI Gateway Front Panel

There are two different models with similar front panel indicators.

### Network Link LEDs:

**(L)NKOK** Lit when there is a network connection, i.e. LINK OK.

**(A)CT** Lit if there is system activity.

**(C)OL** Lit if there are network collisions.

### (E)rror LED:

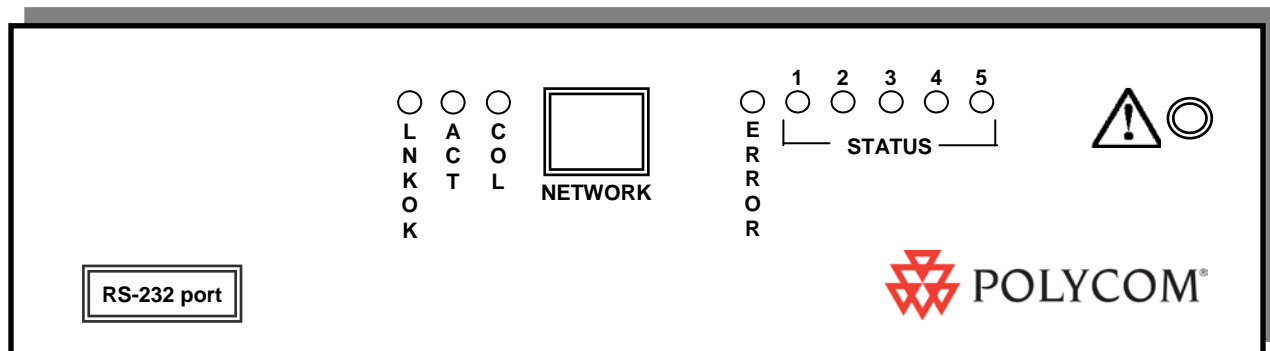
Lit when the system has detected an error.

### Status LEDs: indicate system messages and status.

**1** Heartbeat, indicates SpectraLink 8000 OAI Gateway is running.

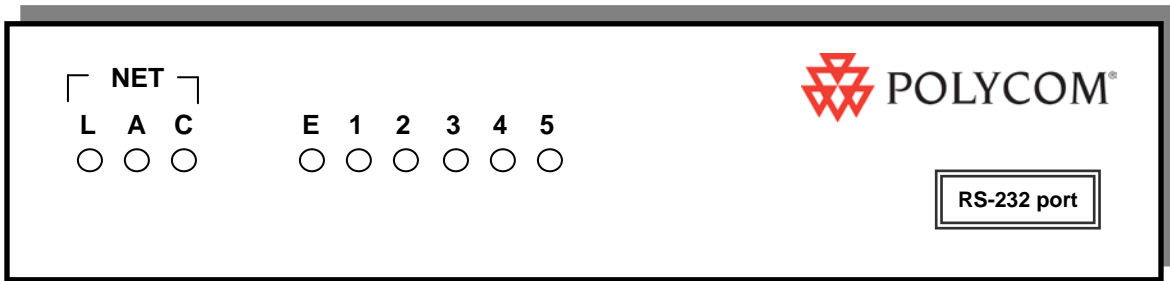
**2, 3, and 4** Currently unused

**5** System master



### Model MOG7xx.

Offered in scaled increments to support up to 2,048 users.



**Model MOG6xx**  
Supports up to 64 users.

**The power jack and network port are located on the back of this model.**



# Install the SpectraLink 8000 OAI Gateway

Place the SpectraLink 8000 OAI Gateway on a shelf or other predetermined location. The Gateway is only physically connected to the Ethernet switch and may be placed in any convenient location.

This unit must be installed by a service person familiar with the installation of electronic equipment.

Do not power up the unit before it has been properly grounded to a protective earth. See *Grounding Instructions* below.

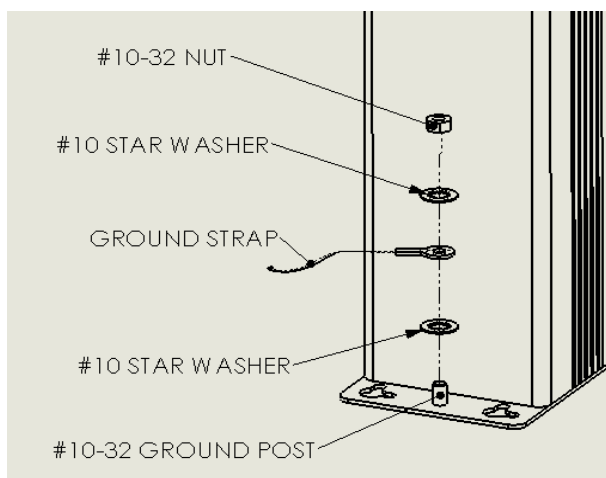
## Grounding Instructions



The metal chassis of this unit may contain leakage currents (i.e., "touch" current) which is cumulative when multiple units are connected together to form a system. To prevent the summation of leakage currents from being present on exposed metal surfaces, the following installation procedure must be followed.

All system units must be grounded to a protective earth by means of the grounding stud located on the rear panel. Refer to the illustration below for recommended continuity connection.

No more than 15 units may be grounded through one connection to the protective earth ground. Systems involving more than 15 units



must be broken up into groups of 15 or fewer units with each group provided with an independent protective earthing conductor.

## Perform Initial Test

1. Once the unit has been properly grounded, connect the power plug from the SpectraLink 8000 OAI Gateway's power adapter to the power jack on the front (or rear) of the Gateway box.



Use only the adapter ordered from Polycom.

2. Plug the power adapter into an outlet or outlet strip.
3. Apply power to the Gateway.
  - The **ERROR** LED should be off.
  - LED 1 should be blinking.
4. Verify that leakage current ("touch" current) is below 250  $\mu$ A rms on exposed metal surfaces.
5. If leakage is excessive, power off the system and re-verify ground path continuity.

## New system installation

If this is a new system installation, place, power up and test the OAI Gateway when the rest of the system is tested. See the relevant administration document for your system for more information.

## Installing in an existing system

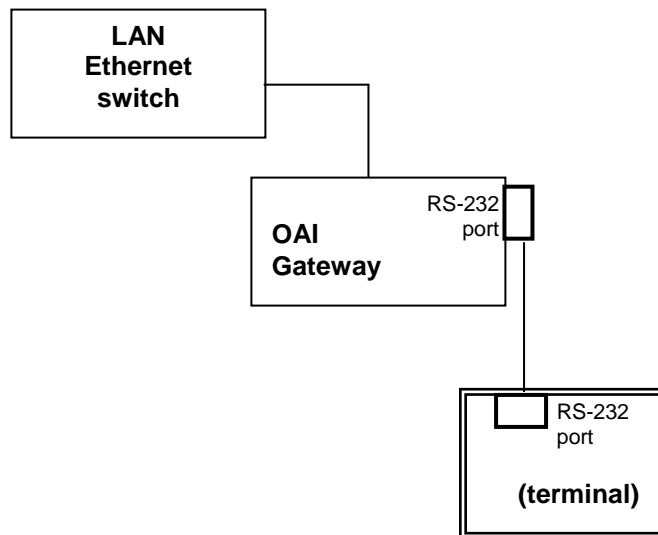
If you are adding OAI to an existing system, the entire system will need to be reset before the SpectraLink 8000 OAI Gateway can be used. See the relevant administration document for your system for more information.

## Assign the SpectraLink 8000 OAI Gateway's IP Address

You can administer the SpectraLink 8000 OAI Gateway via Telnet connection from the SpectraLink OAI Administration Console. However, as with the Telephony Gateways, the SpectraLink 8000 OAI Gateway must be assigned an IP address before you can connect using Telnet.

The following steps outline the procedure to assign the IP address to the SpectraLink 8000 OAI Gateway.

1. Connect a terminal or PC to the Gateway's serial port using a cable that conforms to RS-232 standards for DTE to DTE connections (known as a null modem cable).



2. Reset the system. The following OAI command will display on the terminal:  
**04830130.**
3. Type the following command on the terminal or PC keyboard:  
**0255CC [CTRL-M] [CTRL-J].**  
Note that this command will not display on the screen as it is typed.
4. The **Login** prompt should display. If you made an error entering the command string, the message for "Ill Formed Packet" will display (a series of numbers followed by some version of the command you typed.) Repeat Steps 2 and 3 until you see the **Login** prompt.

5. At the **Login** prompt, enter the default login: **admin** and default password: **admin**. These are case sensitive.
6. You can now configure the SpectraLink 8000 OAI Gateway (including IP address) following the procedure explained in the next section.

## Changing the IP address

When utilizing the serial port as the primary communication link with the application server, the OAI command described in step two above must be entered to free the port and allow it to be used for administrative purposes.

The procedure for entering/changing the IP address of the SpectraLink 8000 OAI Gateway is described below in Chapter 3 *The Main Menu* under *IP Systems Main Menu*.

When the SpectraLink 8000 OAI Gateway has been configured, disconnect the terminal or PC from the serial port, reconnect the communication cable between the SpectraLink 8000 OAI Gateway and the application server, and reset the system. Normal communication between the application server and OAI Gateway will resume.

## Connect the SpectraLink 8000 OAI Gateway to the LAN

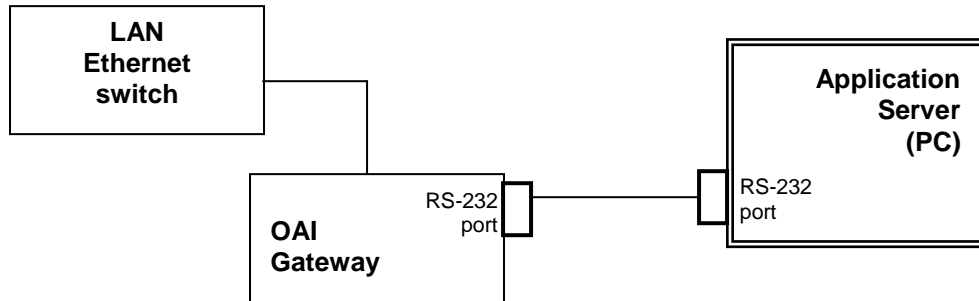
1. Using an RJ-45 cable, connect the **NETWORK** port of the Gateway to the connecting port on the Ethernet switch.
2. Power up the entire system. Any components should go through their usual diagnostic routine.

## Connect the SpectraLink 8000 OAI Gateway Application Server via RS-232 port

Some applications or systems may require an RS-232 connection between the application server and the SpectraLink 8000 OAI Gateway. If your applications have the ability to communicate OAI messages over TCP/IP, and do not require a serial connection, the RS-232 cabling is not required and you may use the LAN connection (port 5456) via the Ethernet switch for your applications.



Connect the application server to the Gateway's serial port using a cable that conforms to RS-232 standards for DTE to DTE connections (sometimes called a null modem cable).



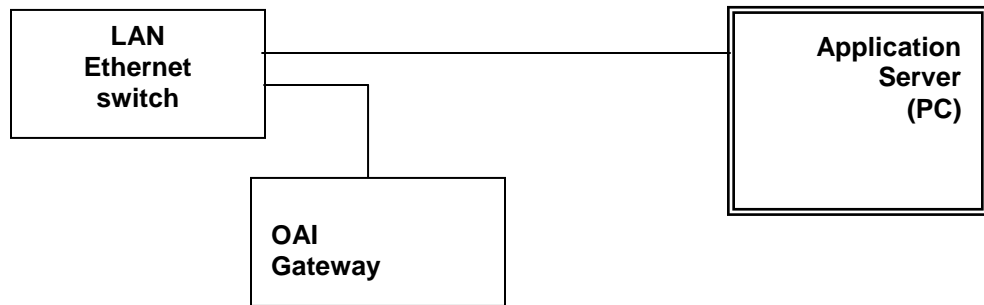
The SpectraLink 8000 OAI Gateway uses the following pins on the connector:

Pin	Function
1	Carrier Detect
2	Data OAI Receives
3	Data OAI Transmits
5	Ground
7	Ready To Send
8	Clear to Send

## Connect the SpectraLink 8000 OAI Gateway to Application Server via the LAN

Some applications or systems may require a LAN connection between the application server and the SpectraLink 8000 OAI Gateway. If your applications do not require a LAN connection, you may use the RS-232.

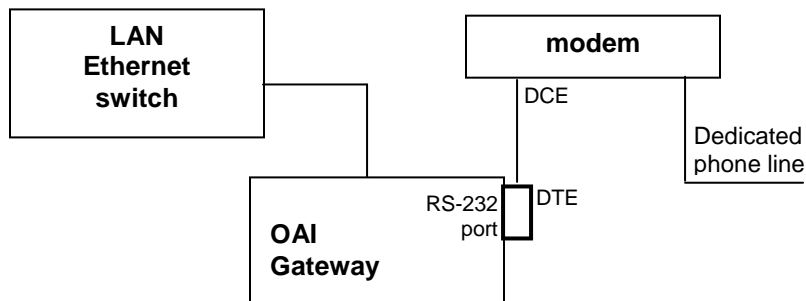
The IP address must be set for the SpectraLink 8000 OAI Gateway to function on the LAN. Follow the application's instructions to identify the Gateway to the application.



## Connect the SpectraLink 8000 OAI Gateway to Application Server via a modem

In some situations, a modem is used for remote administration of the SpectraLink 8000 OAI Gateway.

Connect the modem to the Gateway's serial port using a cable that conforms to RS-232 standards for DTE to DCE connections.



# The Main Menu

To connect to the SpectraLink 8000 OAI Gateway, select the host name or IP address of the Gateway from the **Gateway Connection Selection** screen.

The **NetLink OAI System** menu displays:

## NetLink OAI System Main Menu



\* Note that if the OAI Gateway is a MOG6xx model, the **TFTP Server Download Configuration** option appears on the default main menu.

This is the default main menu of the OAI Administration console. This menu may change when the configuration procedure is completed, depending on the OAI Gateway and the type of system. See following page for the IP systems main menu.

## IP Systems Main Menu

Once the configuration procedure is completed; the IP System menu adds a **Feature Programming** option. Additionally, the **OAI Line Configuration** option is replaced by a **Telephone Line Configuration** option.



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# Configuration Procedures

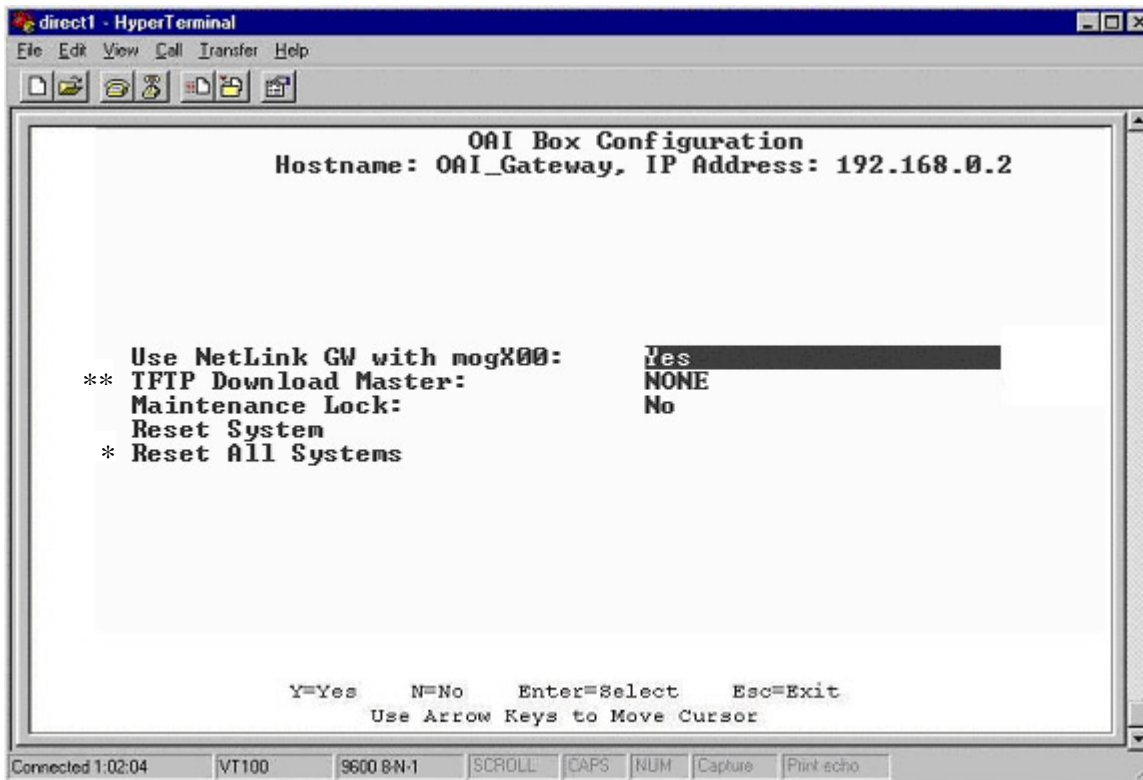
The OAI Gateway must be configured according to the type of system in use: SpectraLink 8000 Telephony Gateway system or IP system. If the SpectraLink 8000 OAI Gateway is being used in an IP phone system, the configuration proceeds independently of the IP system. If the system is using one or more SpectraLink 8000 Telephony Gateways, the OAI Gateway will communicate with them during configuration and operation. These configuration procedures should be done after the handsets have been configured in the SpectraLink 8000 Telephony Gateway.

Generally, configuration follows these steps:

1. Establish type of system through **OAI Box Configuration** option.
2. Establish Network settings through **Network Configuration** option.
3. Configure the handsets through either **OAI Line Configuration** for SpectraLink 8000 Telephony Gateway systems or through **Telephone Line Configuration** option for IP systems.
4. Ensure each handset has OAI enabled on its Admin menu.
5. (IP systems) Use the **Feature Programming** option to configure the function sequence that activates the OAI feature. (In SpectraLink 8000 Telephony Gateway systems, the OAI function sequence is programmed in the Telephony Gateway).

## OAI Box Configuration

From the **NetLink OAI System** menu, select **OAI Box Configuration**. The following screen displays.



\*\* Option appears only on MOG6xx model.

\* Option appears only on SpectraLink 8000 Telephony Gateway systems (when **Use NetLink GW with mogX00** is set to **Yes**).

Enter configuration information for the SpectraLink 8000 OAI Gateway. Your LAN administrator should provide this information.

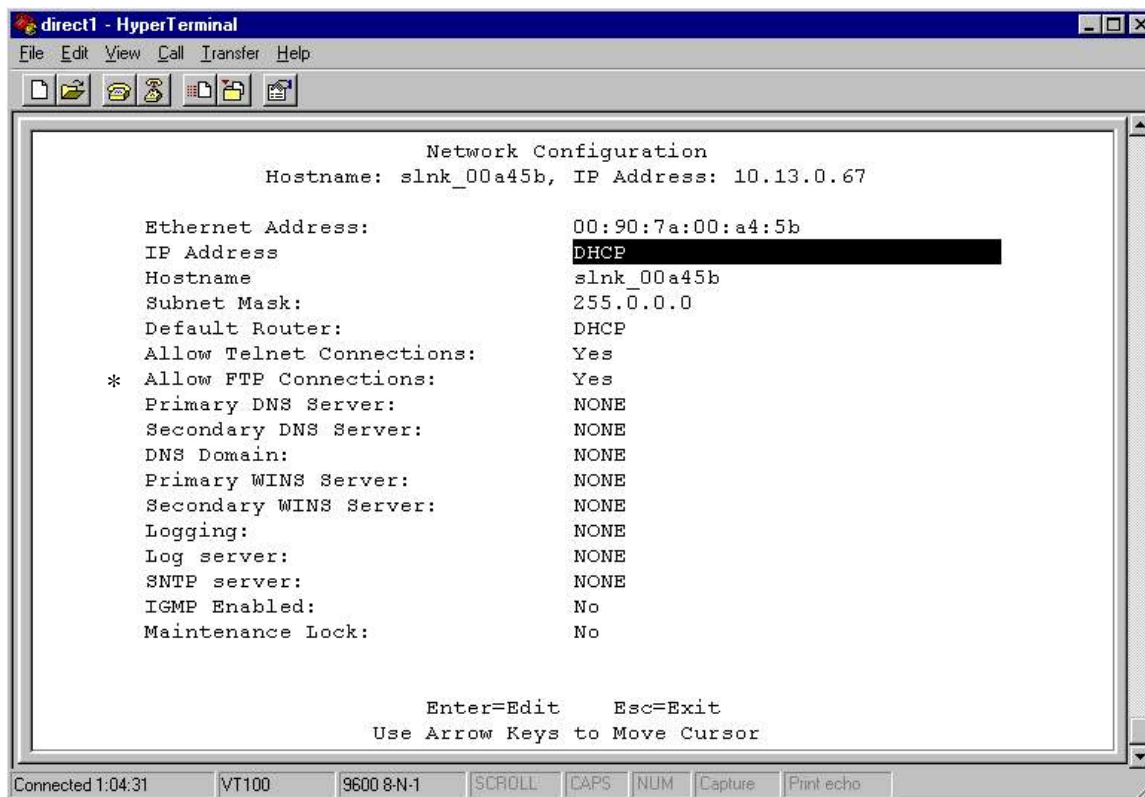
- **Use NetLink GW with mogX00** If you are using SpectraLink 8000 Telephony Gateway(s) in your system, change this option to **Yes**. Note: mogX00 is a model designation for the OAI Gateway.
- **TFTP Download Master** Enter the IP address of the TFTP server.
- **Maintenance Lock** The system sets this option to **Yes** when the system needs to be reset. Note that the administrator cannot change this option. It is automatically set by the system after certain

maintenance activities that require reset, and will not return to **No** until the system is reset. During **Yes**, OAI is inoperable by users.

- **Reset System** If this option is set to **Yes**, the SpectraLink 8000 OAI Gateway will be reset after pressing Enter.
- **Reset All Systems** If this option is set to **Yes**, all system SpectraLink 8000 Telephony Gateways will be reset after pressing Enter.

## Network Configuration

From the **NetLink OAI System** menu, select **Network Configuration**. A screen similar to the following displays:



\* **Allow FTP Connections** option appears on MOG 7xx model only.

Enter configuration information for the SpectraLink 8000 OAI Gateway. Your LAN administrator should provide this information.

- **Ethernet Address** This is the MAC address of the gateway, set at the factory and not user configurable.

- **IP Address** Established in the initial serial connection and may be changed as needed. The IP address of the SpectraLink 8000 OAI Gateway, defined by your network administrator. Enter the complete address including digits and periods. DHCP should not be used with IP OAI.
- **Hostname** Change the default host name, if desired. This is the name of the gateway to which you are connected, for identification purposes only. You cannot enter spaces in this field.
- **Subnet Mask** Enter the subnet mask defined by the Network Administrator.
- **Default Router** DHCP or static IP address
- **Allow Telnet Connections** Enter **Y** (yes) to allow connection to the SpectraLink 8000 OAI Gateway via Telnet; enter **N** (no) if you do not want to allow Telnet connection.
- **Allow FTP Connections** **Yes/No** \* (MOG 7xx only)
- **DNS server** and **DNS domain** These settings are used to configure Domain Name services. Consult your system administrator for the correct settings. These can also be set to DHCP. This will cause the DHCP client in the Gateway to attempt to automatically get the correct setting from the DHCP server. The DHCP setting is only valid when the IP address is also acquired using DHCP.
- **WINS servers** These setting are used for Windows Internet Name Services. Consult your system administrator for the correct settings. These can also be set to DHCP. This will cause the DHCP client in the gateway to attempt to automatically get the correct setting from the DHCP server. The DHCP setting is only valid when the IP address is also acquired using DHCP.



When the name services are set up correctly, the SpectraLink 8000 OAI Gateway can translate hostnames to IP addresses. When using Telnet, it is also possible to access the OAI Gateway using its hostname instead of the IP address.

- **Logging** and **Log server** Logging can be set to **Syslog** or **NONE**. The log server is the IP address or hostname of the syslog server on the network. The gateway will output syslog format diagnostic messages. This is usually not needed.
- **SNTP server** Can be set to a hostname, IP address or **NONE**. The SNTP server is a simple network time server. The OAI Gateway will get the current date and time from the SNTP server. It will tag syslog messages with the date.



- **IGMP Enabled Yes/No.** **IGMP** is the Internet Group Routing Protocol. **IGMP Enabled** allows the OAI Gateway to join multicast groups. If the network switch connected to the OAI Gateway requires IGMP for multicast traffic to be forwarded this should be enabled.
- **Maintenance Lock** The system automatically sets this option to **Yes** after certain maintenance activities that require reset. These are indicated in this list with an arrow bullet. **Maintenance Lock** prevents any new calls from starting. Note that the administrator cannot change this option. It is automatically set by the system. Reset the system at exit to clear **Maintenance Lock**.

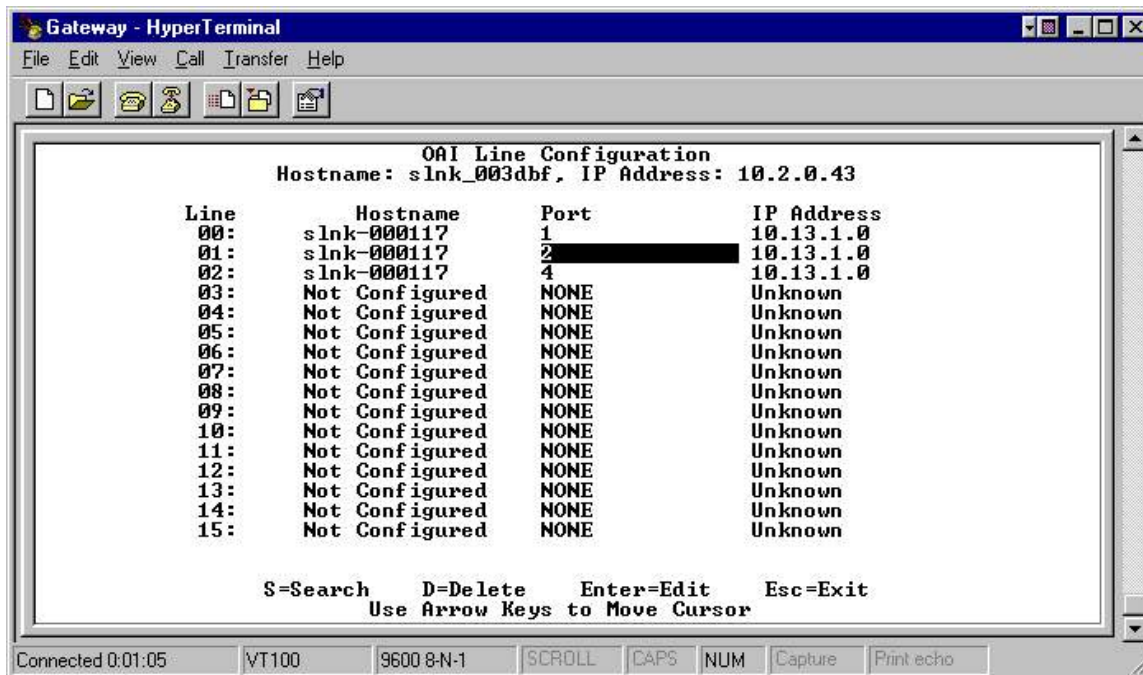
Press Esc to return to the **NetLink OAI System** menu.

## OAI Line Configuration

In a SpectraLink 8000 Telephony Gateway system, each telephone line using OAI must be associated with the line and port of its SpectraLink 8000 Telephony Gateway. This procedure tells the OAI Gateway which handset lines are associated with each SpectraLink 8000 Telephony Gateway. Any changes made to telephone line configurations on the SpectraLink 8000 Telephony Gateway, must also be made here on the OAI Gateway.

1. From the **NetLink OAI System** menu, select **OAI Line Configuration**. A screen similar to the following displays.
2. Enter the **Hostname** of the SpectraLink 8000 Telephony Gateway. The OAI Gateway fills in the hostname and port number based on the last entry. Simply press Enter to accept the default **Port** number and **Hostname** as you continue to the next line. If the Telephony Gateway is active on the network, the IP address field updates automatically.
3. Configure all the lines in your system. Use the arrow keys to move the cursor. Note that the lines will wrap at the top and bottom.
4. Press Esc to return to the **NetLink OAI System** menu.

Use **S=Search** to find boxes in the OAI line configuration.



## Telephone Line Configuration

In an IP system, each handset that is to use OAI features must be configured with its line number and MAC address. Optionally the name and extension number of the handset user may be entered.

The system will not allow you to register the same handset to two different lines. Use Esc to cancel out of any unwanted transaction.



For IP integrations: When a handset has OAI enabled, its MAC address should be registered in the OAI Gateway's Line Configuration. If the MAC address is not registered, battery pack standby time will significantly decrease.

1. Use the arrow keys to navigate to the name and extension fields and enter the associated data.
  - **MAC Address** The MAC address is printed on the sticker underneath the battery on the handset. It can also be displayed on the handset by turning off the handset, and then pressing and holding the **END** key. The MAC address appears on the first line of the display (12 characters).

The MAC address must be manually entered by typing the entire address including digits and colons.

- **Name** Enter the user name assigned to the telephone. This is for record keeping only; it does not communicate the name to the PBX or the handset.
  - **Extension** Enter the extension assigned to this telephone. This is for record keeping only; it does not communicate the extension to the PBX or the handset.
2. Write the MAC address on the Wireless Planning Device Worksheet.
  3. Repeat steps 2, 3, and 4 for each handset to be added or changed.
  4. Press Esc to return to the **NetLink OAI System** menu.

```

direct1 - HyperTerminal
File Edit View Call Transfer Help

Telephone Line Configuration
Hostname: slnk_00a45b, IP Address: 10.13.0.67

Line      MAC Address      Name      Extension
00:      00:90:7a:00:9d:43  User One  1234
01:      Not Configured    NONE      NONE
02:      Not Configured    NONE      NONE
03:      Not Configured    NONE      NONE
04:      Not Configured    NONE      NONE
05:      Not Configured    NONE      NONE
06:      Not Configured    NONE      NONE
07:      Not Configured    NONE      NONE
08:      Not Configured    NONE      NONE
09:      Not Configured    NONE      NONE
10:      Not Configured    NONE      NONE
11:      Not Configured    NONE      NONE
12:      Not Configured    NONE      NONE
13:      Not Configured    NONE      NONE
14:      Not Configured    NONE      NONE
15:      Not Configured    NONE      NONE

S=Search  D=Delete  Enter=Edit  Esc=Exit
Use Arrow Keys to Move Cursor

Connected 1:27:57  VT100  9600 8-N-1  SCROLL  CAPS  NUM  Capture  Pmt-echo

```



A handset may be associated with one and only one telephone line. The same MAC address may not be assigned to two or more telephone lines



The handset requires special setup which may include setting options on the DHCP server or on the handset to allow it to communicate with the SpectraLink 8000 OAI Gateway. Be sure these settings are correct. Refer to the IP Interface document for your system.

## Deleting a Handset

To delete a handset from the SpectraLink 8000 OAI Gateway configuration:

- » Use the arrow keys to highlight the line to be deleted.
  - Press D to delete the handset information.
  - Press Y to accept changes.
  - Press Esc to return to the **NetLink OAI System** menu.

## Searching for a Handset

While in the **Telephone Line Configuration** or the **Telephone Line Status** screens, a search hotkey is available. To search any field:

1. Select the field to use as the search key (**MAC address**, **Name**, or **Extension**),
2. Press S to display a search screen dialog box,
3. Type an appropriate search string and then press Enter.
4. The success or failure of the search will be displayed at the bottom of the screen.
5. The user can either continue to change the search string for different search criteria or escape (by pressing the Esc key) out of the search screen.

The first line of the **Telephone Line Configuration** (or **Telephone Line Status**) screen will then display the line in which the search match was found, if any.

Successful searches always result in the first found match to show at the top of the list, and subsequent searches will continue from that point in the list.

Note that partial strings will match for beginnings of strings, such that a search for extension 10 will match extension 10, 100, 1000, etc., but will not match 010.

## Feature Programming

The OAI function is accessed in the handset by pressing the **FCN** button plus a second button. In IP systems, the button used to access the OAI feature from the handset is configured through the **Feature Programming** option.



This setting will override any other programming.

1. Navigate to the **NetLink OAI System** menu for the SpectraLink 8000 OAI Gateway and select **Feature Programming**. A screen similar to the following displays.
2. Use the arrow keys to select the function number to associate with OAI and type any label up to six characters. What you type here will be displayed on the handset menu.

```

direct1 - HyperTerminal
File Edit View Call Transfer Help
[Icons]
Feature Programming
Hostname: slnk_00a45b, IP Address: 10.13.0.67

1 :
2 :
3 :
4 :
5 :
6 :
7 :
8 :
9 :
* : ██████████
0 :
# : PhonBk
HOLD :
Set Features in all gateways

D=Delete Enter=Edit Esc=Exit
Use Arrow Keys to Move Cursor
Connected 1:25:09 VT100 9600 8-N-1 SCROLL CAPS NUM Capture Print echo

```

\* In SpectraLink Telephony Systems, the OAI key is programmed on each SpectraLink Gateway. See the instructions for setting up the SpectraLink Gateway for specific configuration information.

In the example screen above, the **FCN + #** key sequence will display **PhonBk** on the handset function menu. The OAI application in this case is a phone book enabling speed dialing to those listed.

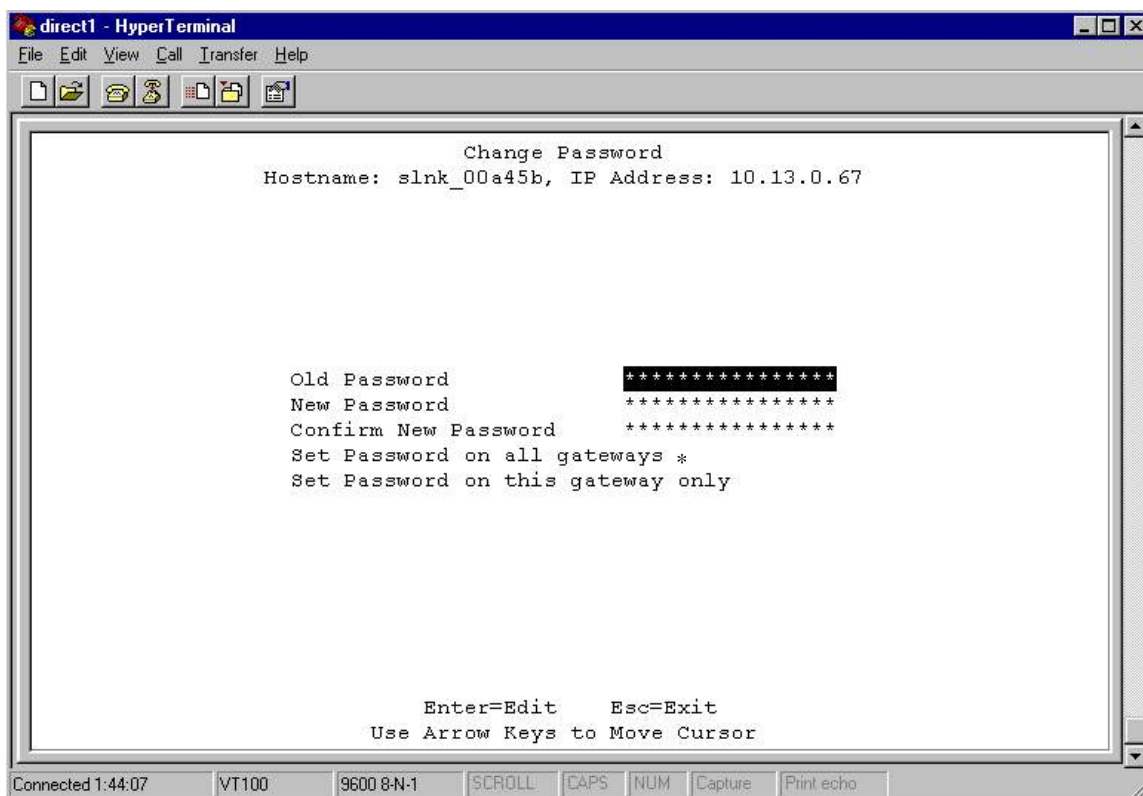
# Set or Change Password

A unique password may be set for the SpectraLink 8000 OAI Gateway, which restricts access to the administrative functions.

If the OAI Gateway is part of a SpectraLink 8000 Telephony Gateway system, the **Change Password** screen has an option to change the password for every SpectraLink 8000 Gateway so that the SpectraLink 8000 OAI and Telephony Gateways all have the same password.

To set or change the password, select the **Change Password** option from the **NetLink OAI System** menu. The default password is **admin**.

Follow the prompts to set a new password. If you forget a password, call Polycom Customer Service for assistance.



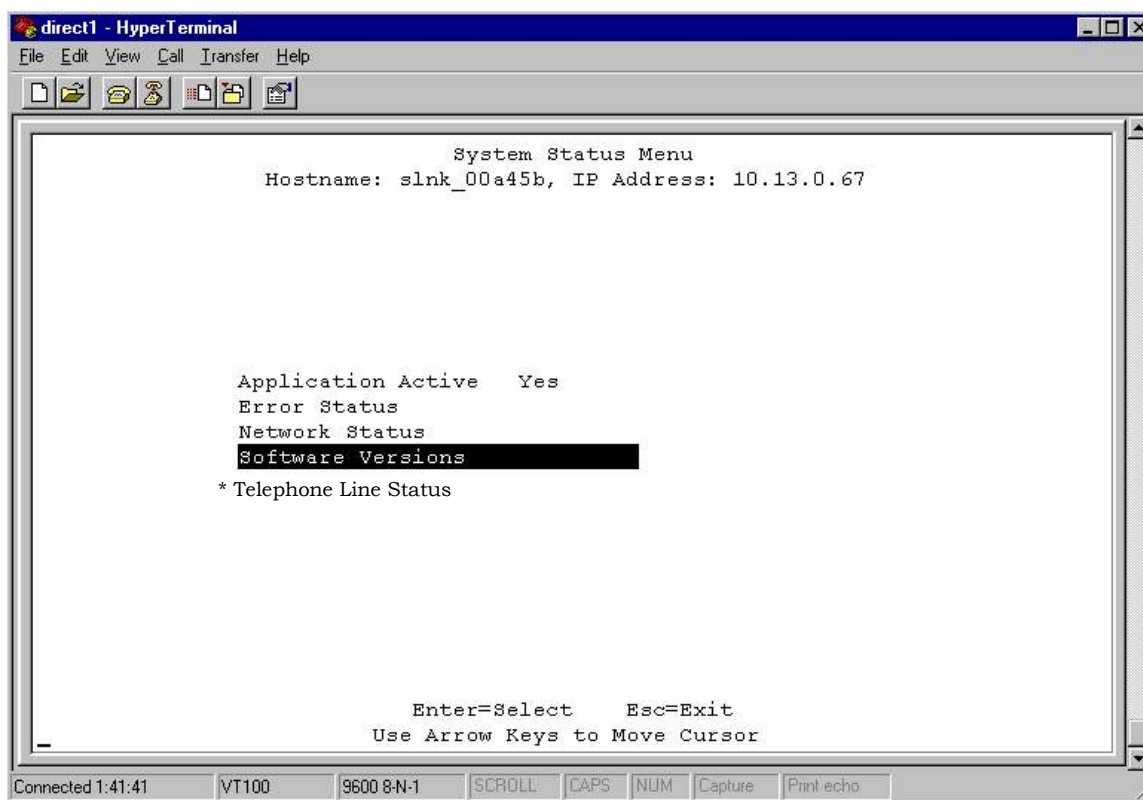
\* This option is on SpectraLink 8000 Telephony Gateway systems only. It allows you to set the password established here on all SpectraLink 8000 Gateways in the system. Using this option overrides any password already established on the SpectraLink 8000 Telephony Gateways.





# System Status Menu

To view the status of the system, select the **System Status Menu** option from the **NetLink OAI System** menu.



\* **Telephone Line Status** option only appears on IP systems.

Additional information on **Error Status** and **Network Status** options is available in *SpectraLink 8000 Telephony Gateway: Administration Guide for SRP*.

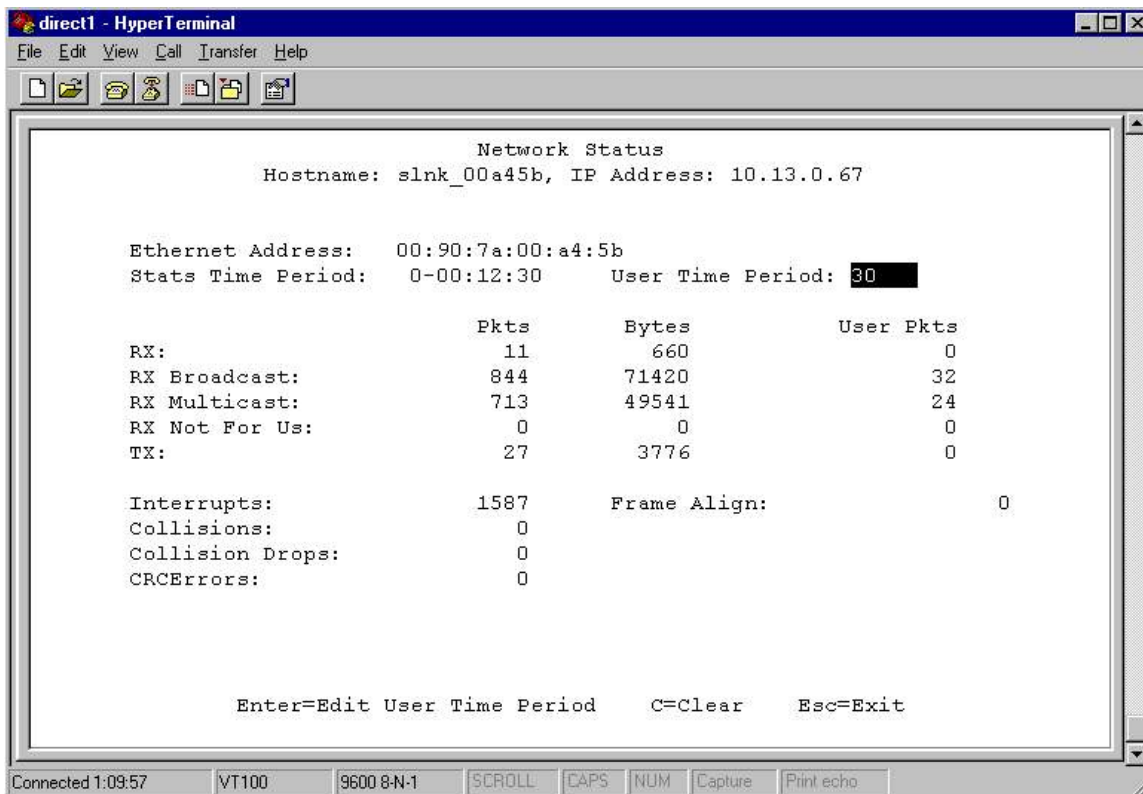
- **Application Active** This will be **Yes** when the application is communicating correctly with the SpectraLink 8000 OAI Gateway. It will be **No** when the application is not connected. This will change dynamically.
- **Error Status** The only OAI specific error is **No ECP heartbeat** which means the application failed to send a heartbeat to the Gateway.

- **Network Status** Information about the connection to the Local Area Network (LAN).
- **Software Versions** Lists the software versions currently running on the SpectraLink 8000 OAI Gateway.
- **Telephone Line Status** Information about the functioning of each handset registered to the SpectraLink 8000 OAI Gateway. (This option is only included in IP systems.)

## Network Status

The SpectraLink 8000 OAI Gateway is connected to the Ethernet network, referred to as the LAN or Local Area Network. The information about that connection is provided through the **Network Status** screen.

From the **System Status Menu**, select **Network Status**. The screen displays information about the Ethernet network. This information can help troubleshoot network problems. A sample screen is displayed here.



The screenshot shows a HyperTerminal window titled "direct1 - HyperTerminal". The window displays the following text:

```
Network Status
Hostname: slnk_00a45b, IP Address: 10.13.0.67

Ethernet Address: 00:90:7a:00:a4:5b
Stats Time Period: 0-00:12:30      User Time Period: 30

          Pkts      Bytes      User Pkts
RX:             11        660           0
RX Broadcast:   844       71420         32
RX Multicast:   713       49541         24
RX Not For Us:   0          0            0
TX:             27       3776           0

Interrupts:     1587      Frame Align:      0
Collisions:     0
Collision Drops: 0
CRCErrors:      0

Enter=Edit User Time Period      C=Clear      Esc=Exit
```

At the bottom of the window, there is a status bar with the following information: Connected 1:09:57, VT100, 9600 8-N-1, SCROLL, CAPS, NUM, Capture, Print echo.

Three items display at the top of the screen:

- **Ethernet Address** MAC address of the SpectraLink 8000 OAI Gateway (hexadecimal).
- **Stats Time Period** The length of time the statistics have been accumulating in the **Pkts** and **Bytes** columns. This is either the system uptime, or the time since a user pressed **C=Clear** while viewing this display.
- **User Time Period** The length of time (in seconds) statistics will accumulate in the **Userpkts** column before resetting to zero. When troubleshooting a problem, use this setting to isolate statistics for a given time period (for example, one hour). This is the only field in this screen that can be changed by the user.

The rest of the display is a table of Ethernet statistics. The **Pkts** and **User Pkts** columns list the count of Ethernet packets received or transmitted. The **Bytes** column is the count of bytes received or transmitted during the amount of time indicated by **Stats Time Period**.

- **RX** Number of packets and bytes received addressed to the SpectraLink 8000 OAI Gateway.
- **RX Broadcast** The number of broadcast packets and bytes received.
- **RX Multicast** The number of packets and bytes received with the SpectraLink multicast address. (A “multicast” message is sent to more than one destination on the network.)
- **RX Not For Us** The number of multicast packets and bytes received that were not for the SpectraLink 8000 OAI Gateway.
- **TX** The total number of packets and bytes transmitted.
- **Interrupts** The number of times the Ethernet controller has signaled the microprocessor that it has received or sent a packet.
- **Collisions** The number of times the Ethernet controller has attempted to send a packet, but another device on the network transmitted at the same time, corrupting the transmission.
- **Collision Drops** The number of packets the Ethernet controller has discarded because there were over sixteen collisions. After sixteen collisions the Ethernet controller hardware discards the current packet and attempts to send the next packet in its buffer.
- **CRC Errors** The number of packets discarded by the Ethernet controller because of a CRC (Cyclic Redundancy Check) error.

## Telephone Line Status

In IP systems, the **Telephone Line Status** screen allows you to see which phones are actively communicating with the OAI gateway.

From the **System Status Menu**, select **Telephone Line Status**. The Spectra-Link 8000 OAI Gateway displays up to 16 lines. A sample screen is displayed here. Move to the next group of 16 by using the arrow keys.

```

direct1 - HyperTerminal
File Edit View Call Transfer Help

Telephone Line Status
Hostname: slnk_00a45b, IP Address: 10.13.0.67

Line      WT MAC      Name      Extension  Phone
00:      00:90:7a:00:9d:43  User One  1234      ChkdIn
01:      Not Configured  NONE      NONE      No ChkIn
02:      Not Configured  NONE      NONE      No ChkIn
03:      Not Configured  NONE      NONE      No ChkIn
04:      Not Configured  NONE      NONE      No ChkIn
05:      Not Configured  NONE      NONE      No ChkIn
06:      Not Configured  NONE      NONE      No ChkIn
07:      Not Configured  NONE      NONE      No ChkIn
08:      Not Configured  NONE      NONE      No ChkIn
09:      Not Configured  NONE      NONE      No ChkIn
10:      Not Configured  NONE      NONE      No ChkIn
11:      Not Configured  NONE      NONE      No ChkIn
12:      Not Configured  NONE      NONE      No ChkIn
13:      Not Configured  NONE      NONE      No ChkIn
14:      Not Configured  NONE      NONE      No ChkIn
15:      Not Configured  NONE      NONE      No ChkIn

S=Search  Esc=Exit
Use Arrow Keys to Move Cursor

Connected 1:29:23  VT100  9600 8-N-1  SCROLL  CAPS  NUM  Capture  Print echo

```

- **WT MAC** The MAC address of the handset, entered at configuration.
- **Name/Extension** These fields contain the data entered at configuration.
- **Phone** **No ChkIn** indicates the handset is not currently using the OAI function. **ChkdIn** indicates the handset is currently communicating with the Gateway.

\* In SpectraLink 8000 Telephony Gateway systems, this feature is accessed through the SpectraLink 8000 Telephony Gateway.

The functioning of the **S=Search** hotkey is described under *Telephone Line Configuration*.

## Software Versions

Each SpectraLink 8000 OAI Gateway and handset runs Polycom's proprietary software that is controlled and maintained through versioning. The **Software Versions** screen provides information about the version currently running on the components. This information will help you determine if you are running the most recent version and will assist Polycom engineering and/or customer support in troubleshooting software problems.

There are two separate methods of downloading new software – one for the IP system and one for the SpectraLink 8000 Telephony Gateway system. See Chapter 8 *Software Maintenance* for information about upgrading or downloading your software.

From the **System Status Menu**, select **Software Versions**. A sample SpectraLink 8000 OAI Gateway screen for IP systems is displayed below:

```
direct1 - HyperTerminal
File Edit View Call Transfer Help

Software Versions
Hostname: slnk_000117, IP Address: 10.13.0.28

Hardware Versions:      05/81
Boot Code:              001.007 (0415)
Factory Page:          234.015 (0836)
Flash1 Downloader:     031.007 (0233)
Functional Code:       251.001 (0999)
fnctla.bin             251.001 (0999)

Esc=Exit

Connected 0:00:33  VT100  9600 8-N-1  SCROLL  CAPS  NUM  Capture  Print echo
```



---

# Certification Test

When the SpectraLink 8000 OAI Gateway is properly connected to the application server, **LED 1** will blink.

To test the handsets:

- If this is a new installation, continue with handset registration and PBX programming, and perform the usual voice and coverage tests when handset installation is complete.
- If you added the SpectraLink 8000 OAI Gateway to an existing system, place a call and test the features on each handset to be sure the system is working properly.

Test the application on each handset. Consult your application provider for specific test procedures.





# Software Maintenance

The SpectraLink 8000 OAI Gateway and the SpectraLink Wireless Telephones use proprietary software programs written and maintained by Polycom Corporation. The software versions that are running on the system components can be displayed via the **System Status** screen.

Downloads for the SpectraLink 8000 OAI Gateway are available from [http://www.polycom.com/usa/en/support/voice/wi-fi/spectralink\\_8000\\_oai\\_gateway.html](http://www.polycom.com/usa/en/support/voice/wi-fi/spectralink_8000_oai_gateway.html).

## Software Updates for MOG700 Systems

After software updates are obtained from Polycom, they must be transferred to the appropriate location in the LAN to update the code used by the corresponding component. The FTP (File Transfer Protocol) method of transfer is used.

In the SpectraLink 8000 OAI Gateway, the flash file system has the following files:

File name	Description
config.bin	The OAI box configuraton
fnctla.bin	The functional code
oaip1st.bin	The phone list configuration
oaip1t1sb.bin	The redundant phone list configuration.

The fnctla.bin file is upgraded periodically by Polycom engineering and is the only file that you will download. The other files are configuration files and their names are provided here for your information and backing up purposes.



Navigate to the **OAI Box Configuration** screen and place the system in **Maintenance Lock** before proceeding with the FTP procedure. Note that this will prevent new calls from starting. No calls may be in progress during the FTP procedure.

## FTP procedure

When using FTP, you use a host system to connect to a remote system. In this example, the host is the client and the server is the OAI Gateway. The “put” command means to copy the files from the host to the remote system. The “get” command means to copy the files from the remote system to the host.



Note that FTP commands vary with the program being used. Use the following steps as a general guide but be aware that your FTP program may use different terms to describe the procedure.

To transfer the software using FTP:

1. Connect to the SpectraLink 8000 OAI Gateway using the command: **FTP <hostname>** or **FTP <IP address>**.
2. Log in using the administrator login (**admin**) and password (default is **admin**). A login confirmation message will display, followed by the **FTP>** prompt.
3. At the **FTP>** prompt, type **binary**. A confirmation message will display.
4. At the **FTP>** prompt, use the “put” command to transfer the functional code file to the client server or OAI Gateway. It must be renamed before being loaded into the OAI Gateway. The download file is named MOG700.bin. Rename it **fnct1a.bin**. Example: **put mog700.bin fnct1a.bin**
5. After files are transferred, use the “Quit” command to quit FTP.
6. Navigate to the main menu for the OAI Gateway and select **System Status**. Then select **Software Versions** to verify that software versions for the OAI Gateway are correct.
7. Reset the system via the **OAI Box Configuration** screen in order to restore **Maintenance Lock** to **N**.

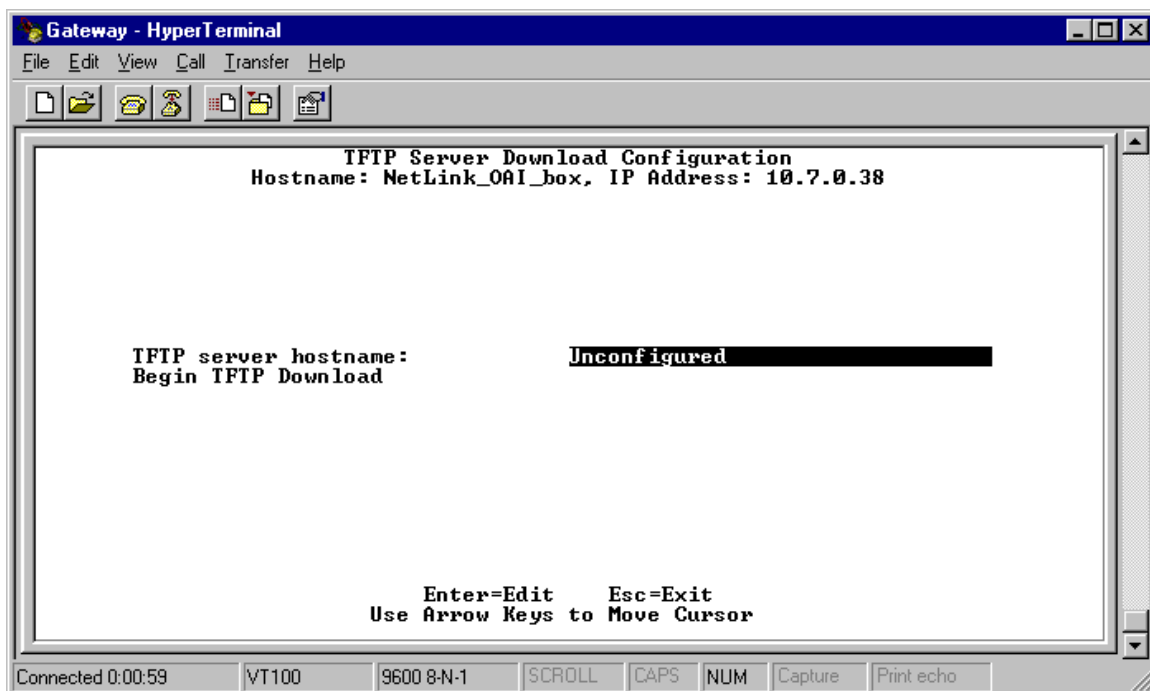


Note: A graphical user interface FTP client may be utilized in lieu of the aforementioned command line FTP procedure.

## TFTP Software Updates for MOG600 Systems

The OAI Gateway uses proprietary software programs written and maintained by Polycom Corporation. The software versions that are running on the system components can be displayed via the Spectra-Link 8000 Telephony Gateway's **System Status** screen. Polycom or its authorized dealer will provide information about software updates and how to obtain the software (for example, downloading from a Web site).

1. Obtain and load a TFTP server on a LAN connected system. Consult your server vendor's documentation for information about TFTP.
2. Once the update is obtained from SpectraLink, load it in a location that is accessible by the TFTP program.
3. To configure the host and start the download, select the **TFTP Server Download Configuration** option from the **NetLink OAI System** menu.
4. Enter the TFTP server hostname then use the arrow keys to move the cursor to the **Begin TFTP Download** option and press Enter to begin the download. The MOG600.bin code will be downloaded into the OAI Gateway.



## Replacing an OAI Gateway

If you need to replace the OAI Gateway with another one, the best way to ensure continuous performance is to load the files from the current gateway onto the new gateway. The backup files can be obtained in a FTP session with the current OAI Gateway and are:

- **config.bin** The OAI Gateway configuration code which contains things like IP address and other network options.
- **fnctla.bin** The functional code which if backed up and restored would insure the new gateway had the same code version as the one being replaced.
- **oaipflst.bin** The phone list configuration which maps OAI ports to specific handset MAC addresses, or, in a SpectraLink 8000 Telephony Gateway site the OAI ports are mapped to telephone line ports on the SpectraLink 8000 Telephony Gateways.
- **oaipflsb.bin** The redundant phone list configuration.

### Replacing an OAI Gateway without using backup files

Keep in mind that the OAI application software in use sends messages to OAI ports on the OAI Gateway which are assigned to specific handsets. If a new OAI Gateway is installed that replaces an existing gateway and backup files are not available, take care to either assign the same OAI ports to the same handsets or update the OAI application program with the new OAI port to handset assignments.

### Replacing an OAI Gateway with an OAI Gateway that has a higher end user capacity

If you upgrade to a higher-capacity OAI Gateway, you can pull all of these configuration files from the existing OAI Gateway, even if it is of lower port density, and upload those files into a new, higher capacity OAI Gateway. The new OAI Gateway will accept and populate all ports and configuration data from the files.

Ensure you are using the same software versions on both OAI Gateways prior to extracting any configuration files.

---

# Wireless Device Planning Worksheet

Copy and complete this worksheet to track parameters for each wireless telephone.

OAI Port	MAC Address	User Name	Dialing Ext.	IP Address
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				
16				
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31				
32				



---

# Safety Notices



**WARNING:** Changes or modifications to this equipment not approved by SpectraLink Corporation may cause this equipment to not comply with part 15 of the FCC rules and void the user's authority to operate this equipment.



**WARNING:** SpectraLink products contain no user-serviceable parts inside. Refer servicing to qualified service personnel.



## **IMPORTANT SAFETY INFORMATION**

Follow these general precautions while installing telephone equipment:

- Never install telephone wiring during a lightning storm.
- Never install telephone jacks in wet locations unless the jack is specifically designed for wet locations.
- Never touch uninsulated telephone wires or terminals unless the telephone line has been disconnected at the network interface.
- Use caution when installing or modifying telephone lines