



# SpectraLink® 6100 MCU

Open Applications Interface (OAI) Gateway

## Installation and Configuration

SpectraLink 6000 System

March 2012 Edition  
1725-36120-001  
Version H



## Patent Information

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# About this Guide

SpectraLink's Open Application Interface (OAI) enables third-party computer applications to communicate with SpectraLink Wireless Telephones. This document explains installation of the SpectraLink 6100 OAI Gateway (MOG 500) by Polycom. The installation process connects the OAI Gateway to an existing SpectraLink 6100 MCU.

## Polycom Model Numbers

This document covers the following registered model numbers:

SCA416, SCA408, SCA516, SCC408, SCC416, SCD408, SCD416, SCE408, SCE416, SCF4089, SCF416, SCI408, SCI416, SCJ408, SCJ416, SCK408, SCK416, SCL408, SCL416, SCM408, SCM416, SCN408, SCN416, SCO408, SCO416, SCS416, SCT416, SCX416, RCC400, RCO400, RCU100, RCU200, RCU201, MOG400

## Related Documents

*SpectraLink 6100 MCU: Facility Preparation (1725-36096-001)*

*SpectraLink 6100 MCU: Installation and Operation (1725-36097-001)*

*SpectraLink 6100 MCU: Quick Reference (1725-36098-001)*

*Installing the Outdoor Base Station (1725-36127-001)*

Available at

[http://www.polycom.com/support/voice/proprietary\\_wireless/index.html](http://www.polycom.com/support/voice/proprietary_wireless/index.html)

*LinkPlus Interface Guide (7125-361xx-001 where xx indicates a number corresponding to the type of PBX)*

Available at

[http://www.polycom.com/support/voice/wifi/pbx\\_integration.html](http://www.polycom.com/support/voice/wifi/pbx_integration.html)

## Customer Support

Polycom wants you to have a successful installation. If you have questions please contact the 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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# Installation Overview

Installation has three phases. In some cases, a separate person is responsible for each phase. It is important to coordinate the activities among the persons involved.

1. Site Preparation: Done by the customer or a wire technician/contractor.
2. OAI Gateway Installation: Done by the customer or Polycom.
3. System Certification: Done after installation to confirm the system is working properly.

For more information about Link system architecture and components, please see *SpectraLink 6100 MCU: Installation and Operation*.

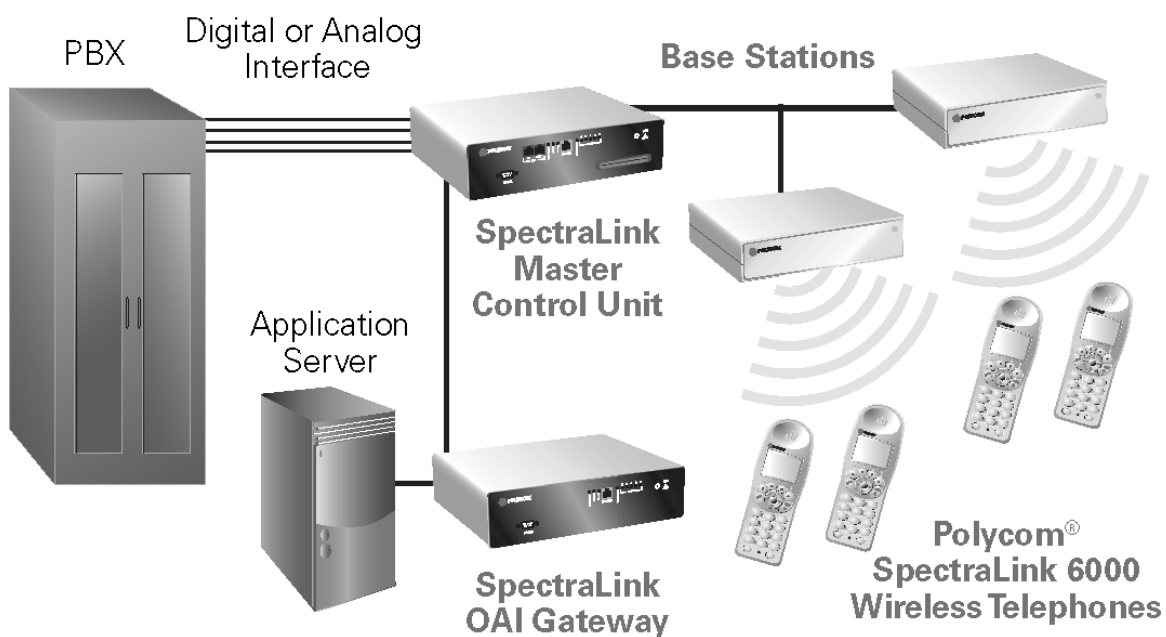




# OAI Overview

The OAI Gateway (MOG 500) allows the SpectraLink 6100 MCU to interface with an application server as shown in the diagram below. This enables third-party applications to communicate directly with the SpectraLink 6100 MCU, allowing users to retrieve and respond to information using SpectraLink 6000 Wireless Telephones, or handsets. A single OAI Gateway is connected to a SpectraLink 6100 MCU using an inter-processor communication (IPC) cable (8-conductor cable with RJ-45 connectors).

## System Diagram



## The OAI Gateway's Front Panel

The OAI Gateway's front panel has the following status indicators.

- **ERROR**: Indicates an internal error
- **STATUS** LEDs:
  - LED 1: Future use
  - LED 2: Future use
  - LED 3/IPC: Indicates the status of the communication between the OAI Gateway and the other MCUs.
  - LED 4/RD: Indicates the OAI Gateway is receiving data on the **RS-232** port.
  - LED 5/SD: Indicates the OAI Gateway is sending data on the **RS-232** port.
  - **PWR**: Indicates status of DC power connection.

# Installing the OAI Gateway

If this is a new system installation, secure the OAI Gateway to the wall, power up and test the OAI Gateway when the MCUs are tested. Connect the OAI Gateway to the MCU after the Base Stations are installed.

If you are adding the OAI Gateway to an existing system, the system will need to be shut down and re-set after installation of the OAI Gateway. Notify users that the system will be out of service during the installation.

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.



Polycom recommends an operational temperature range of 0°–40° C (31°–104° F). Optimal temperature is 20° C (68° F). Humidity recommendation is 20%–80% (non-condensing).

## Mount OAI Gateway to Wall

Like the MCU, the OAI Gateway is designed to be mounted on a backboard of 3/4" plywood, securely fastened to the wall. Mount the OAI Gateway vertically, adjacent to the last MCU. Do not stack the MCUs or OAI Gateway on top of one another.

To mount the OAI Gateway:

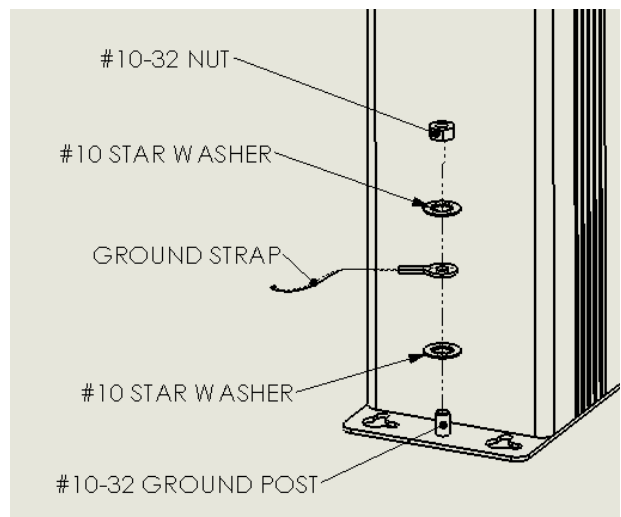
1. Using a 1/8" drill bit, drill four pilot holes, on 2" x 12.1" centers.
2. In each pilot hole, sandwich a star washer between the ESD bonding strap and the backboard, then insert the screw (#8 panhead wood screw, 3/4" long) and tighten it, leaving approximately 1/8" to 1/4" gap from the wall.
3. Slide the OAI Gateway over the screw until it drops in place.
4. Tighten screws fully.

## 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.

## Conduct Power On Test



Use only the provided Class II AC Adapter with output 24Vdc, 1A, 24W.



Use an outlet strip with a built-in power switch to allow the MCU(s) and OAI Gateway to be turned on and off together.

1. Once the units have been properly grounded, connect the power plug from the OAI Gateway's power adapter to the jack labeled **PWR** on the OAI Gateway box.
2. Plug the power adapter into an 110V AC outlet or outlet strip.
3. Apply power to the OAI Gateway. The **PWR** LED on the front panel should come on. All other LEDs should be off.



If the **ERROR** LED comes on at any time, there is a hardware problem. Note which other LEDs are on (if any) and contact Polycom Customer Service.

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.

## Connect OAI Gateway to MCU

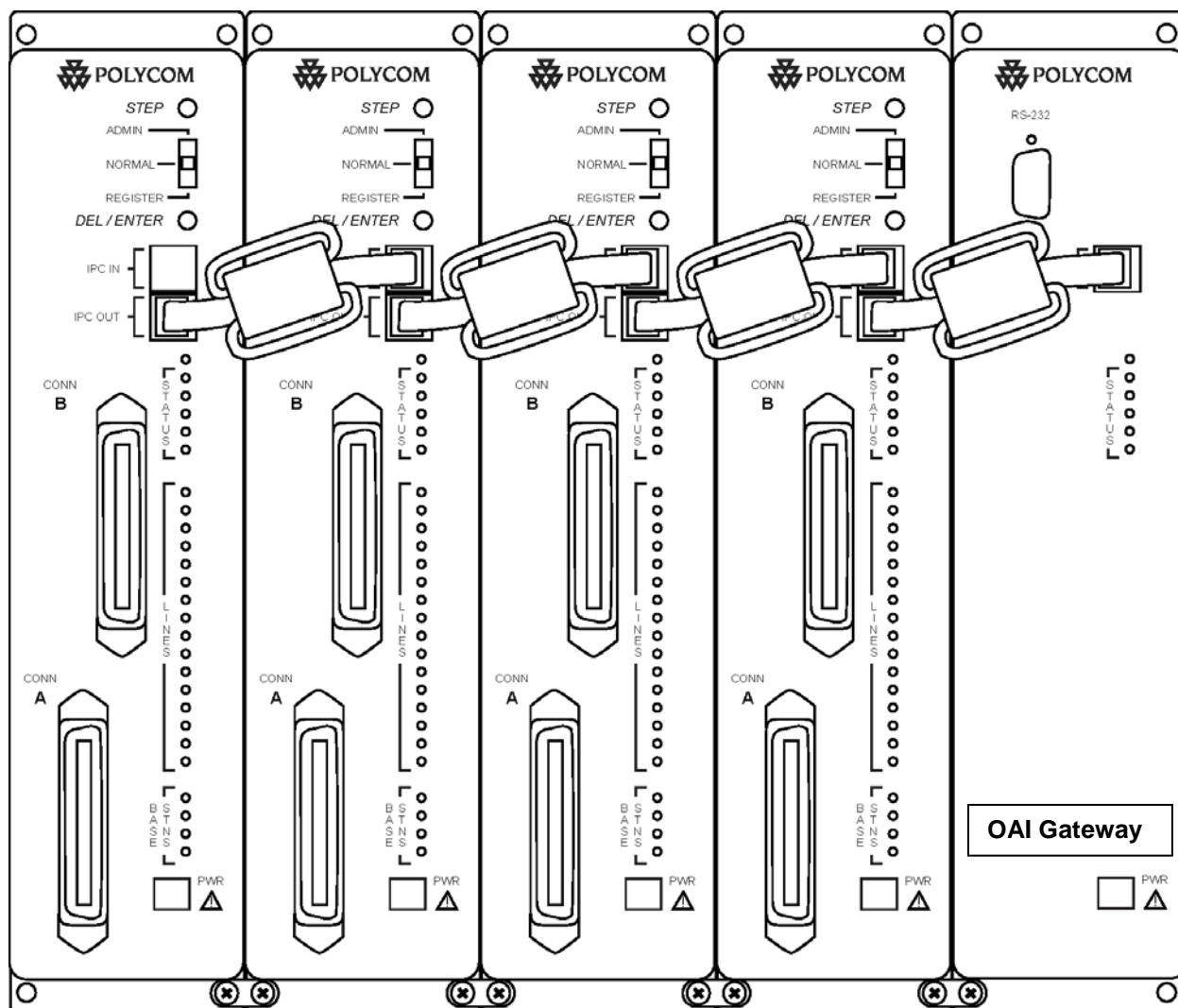
1. The OAI Gateway must be connected as the last box in the MCU chain. Connect the OAI Gateway to the **OUT** port on the MCU, using the IPC cable supplied.
2. Double-check that the **IN** and **OUT** ports are correctly connected on all MCUs. The first MCU will have no connection to the **IN** port; the last MCU is connected to the OAI Gateway. The diagram below shows a chain of four MCUs and the OAI Gateway.



Do NOT stack the MCUs and OAI Gateway on top of each other. Units should be placed side by side physically touching the adjacent unit.

3. Power up the entire system.

- The **PWR** LED and LED 3 (IPC) on the front panel of the OAI Gateway should be on. If the IPC LED remains off, try replacing the IPC cable. If this does not correct the problem, or if the **ERROR** LED is on, contact Polycom Customer Service.
- All the MCUs should go through their usual diagnostic routine, and a unique Box ID should display on the **STATUS** LEDs of each MCU. If this does not happen, recheck the IPC wiring.



## Connect OAI Gateway to Application Server

Using a standard 9-pin female D-type connector, connect the serial port on the front panel of the OAI Gateway to the PC, application server, or modem that will be used to interface with the application.

The OAI Gateway uses the following pins on the connector:

Pin	Function
2	Data OAI receives
3	Data OAI transmits
5	Ground

If the application is up and running, LEDs **4** (RD) and **5** (SD) on the front panel of the OAI Gateway should be lit or blinking, indicating that the OAI Gateway is sending and receiving data to or from the PC.





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# Assign OAI Function Key

To access the OAI application, the user presses the **FCN** key and an assigned number key. Follow these steps to assign a function key to initiate the OAI application.

1. Make sure a handset is registered to **LINE 2**. This is the only port with administration access.
2. With the system up and running and within range of a Base Station, move the mode switch on the MCU to the **ADMIN** position.
3. Press **START** on the handset registered to **LINE 2**. You should hear a steady tone.
4. Press the **FCN** key followed by the key you want to assign for OAI access.
5. Press **##555**, then press **END**. This assigns OAI to the specified key.
6. Return the MCU mode switch to the **NORMAL** position.

The OAI macro can be programmed to more than one key sequence to support multiple OAI functions within the same application. The application must then be able to distinguish which key sequence is assigned to which function.



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# Certification Test

When the OAI Gateway is properly connected to the application server, the LEDs should look like this:

PWR	On
ERROR	Off
LED 1	
LED 2	
LED 3/IPC	On
LED 4/SD	On when sending data to server
LED 5/RD	On when receiving data from server

To test the handsets:

1. 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.
2. If you added the OAI Gateway to an existing system, place a call and test the features on each handset to be sure the system is working properly.
3. Test the application on each handset. The SD and RD LEDs should be on when the OAI Gateway is communicating with the server (at least every 30 seconds). Consult your application provider for specific functional test procedures.



# Troubleshooting

When an alarm is detected, the **ERROR** LED will light and the OAI Gateway **STATUS** LEDs will display an alarm code.

Contact Polycom Customer Support at (800) 775-5330 (Monday through Friday, 6 a.m. to 6 p.m. Mountain time) for additional assistance in troubleshooting your system.

The following **STATUS** LEDs are displayed in combination with the **ERROR** LED.

STATUS LED	Description	Action
3+2+1	Flash Stuck in Erase Mode.	For any of these errors, reset and try again. If the error occurs repeatedly, contact Polycom Customer Support. RMA (Return Material Authorization) may be necessary.
	Flash Stuck in Program Mode.	
	Flash Fails to CRC.	
	Config readback fails.	
	FPGA download fails.	
4+3+2+1	Queue overflow software error. Never got config version.	Reset and try again. If the error occurs repeatedly, contact Polycom Customer Support. RMA may be necessary.
4+3	Duplicate/bad logical num.	Correct the source of the configuration conflict.
5+4	OAI Major # != MPC Major #	Erase/re-download at least 1 box.
	Bad board ID.	Check software version. Re-download. If the error occurs repeatedly, contact Polycom Customer Support. RMA may be necessary.
	Beta S/W cannot provide DL.	Don't connect Beta boxes to non-Beta boxes.



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# Safety Notices



**WARNING:** Changes or modifications to this equipment not approved by Polycom 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:** Polycom 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
- If wiring for a Base Station exits a building—whether to reach an outdoor Base Station location or to reach a Base Station in another building—consult the telephone system manual, the National Electric Code (NEC), and local codes for instructions on providing lightning and other over-current protection.