



▶ Polycom® ATX™  
Integrator's Guide



ATX SDK Version 3.0.3 | ATX 300 Version 3.0.3  
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# About this Guide

The *Polycom ATX Integrator's Guide* provides high-level guidelines on how to integrate the Polycom® Architected Telepresence Experience™ (ATX™) solution with the customer's plasma displays, table, and other components to create a room suitable for immersive telepresence conferencing.

The information in this guide covers both the standard ATX 300 version 3.0.3 system as well as the ATX Software Development Kit (SDK) version 3.0.3, which runs on the ATX 200, ATX 300, and ATX 400 hardware platforms. With the ATX SDK, the AV integrator customizes the user interface, controls, and content using a vendor-provided control module.

This guide is intended for AV integrators and is not intended as an end user guide.

## Prerequisites

To perform the tasks in this guide:

- You must have current certification through Polycom to install and support ATX installations.
- You should have prior knowledge and experience with Polycom Immersive Telepresence systems.
- You should have prior knowledge and experience with Polycom HDX™ systems.

In addition, if you are installing the ATX SDK, you should be familiar with developing GUIs for control panels and you should have experience with control systems from control panel vendors.

## Related Documentation

For additional information about the Polycom ATX solutions, refer to these related Polycom documents:

- *Polycom Immersive Telepresence (ITP) Administrator's Guide* (part number 3725-26945-005), which provides information about how to configure the Immersive Telepresence features and maintain the suites.
- *Polycom Immersive Telepresence Deployment Guide* (part number 3725-26703-002), which provides the best practices for configuring multipoint conferences on Polycom RMX™ 4000 and RMX 2000® conference platforms.
- *Polycom ATX 200/300/400 System Wiring Specification* (part number 3823-30099-002), which provides a sample wiring diagram for the Polycom ATX SDK (on the ATX 200, 300, and 400 hardware platforms) and the Polycom ATX 300 system, including A/V and control, network, and power. This document also includes a component reference list.
- *Polycom Architected Telepresence Experience ATX/ATX SDK Technical Specifications*, which describes the differences between the ATX SDK version 3.0.3 and the ATX 300 version 3.0.3 as well as lists the specifications for the ATX systems, such as the video and audio standards, bandwidth requirements, and layout guidelines.
- *Polycom ATX Release Notes* (part number 3725-29895-007), which lists features, corrected issues, and limitations for the Polycom ATX SDK and ATX 300 systems.
- *Integrator's Reference Manual for Polycom HDX Systems* (part number 3725-23979-007), which provides information about the room requirements, acoustics, and lighting, and about rack mounting the codecs.

The *Wiring Specification*, *Technical Specifications*, and *Release Notes* are available at the Polycom web site,

<http://www.polycom.com/support/video/index.html>.

If you are using the ATX SDK and need additional information, refer to these related documents:

- *Integrating Polycom SoundStructure with the ATX and ATX SDK Immersive Telepresence Systems Application Note*, which provides information about how to integrate a SoundStructure C-series device with ATX 200, 300, and 400 SDK telepresence systems.
- Control module documentation, which provides information about the control panel/module hardware and software. Additional documents may also be available at the control panel vendor website.

## ATX Support Process

Under the terms of the ATX certification program, authorized Partners must offer the end user the support described in this section. End users who contact Polycom Support will be directed to the Partner.

### Technical Support

The certified Partner must be able to accept technical support problem calls via e-mail, phone, fax, and pager. The Partner must make contact with the end user within 24 hours of the call.

### Warranty and Post-Warranty Support

The certified Partner must provide support during the warranty and after the warranty expires, including software and hardware updates and upgrades. They must maintain a certified configuration of Polycom products as defined in the *Polycom Immersive Telepresence (ITP) Deployment Guide*.

### Support Escalation Policy and Process

The certified Partner must, upon request, submit for Polycom approval, a documented support escalation policy and process. The escalation policy must meet Polycom's escalation policy and must describe how problems are escalated through the Partner's management structure, and when necessary, to Polycom.

### Support Process

#### Design Questions

Design questions should be referred to the ATX Design Support Desk at [ATXDesign@polycom.com](mailto:ATXDesign@polycom.com). The Support Desk will respond by the end of the next business day. Note that this is a North American-based email alias and thus follows the US business day calendar.

## Polycom Parts and Software Issues

Issues with Polycom parts and software should be referred to the local Polycom support number.

- North America: 888-248-4143
- EMEA: +44 1753 723020
- APAC: +612 997 88098

The ATX serial number must be provided when contacting Polycom Support.

## Support Issue Examples

### Pre-Installation or Design

The following pre-installation and design questions should be referred to the Design Support Desk:

- Questions about table distance
- Questions about lighting, camera placement, etc.
- Questions about the recommendations in this document

The following pre-installation and design issues should be referred to the local Polycom support number by the certified Partner:

- RMA of a broken Polycom part
- Questions about the Polycom software not working properly
- Polycom software updates and upgrades

Any questions on parts or software that are not components of the ATX system (such as displays, control panel hardware, control panel firmware, SDK controller software, room environmental components, and furniture) will be referred back to the Partner.

### Installation

Issues suspected to be technical problems should go through best practices troubleshooting to validate that the hardware is operational and that basic configuration and software versions are correct.

The following installation issues should be referred to the Design Support Desk:

- Camera alignment issues
- Display alignment issues
- Conference table position or shape issues

The following installation questions should be referred to the local Polycom support number by the certified Partner:

- Questions about Polycom parts that are missing or not working
- Questions about the HDX or Polycom control panel software not working properly
- Calls not going through after standard codec and network troubleshooting procedures have failed

Any questions on parts or software that are not components of the ATX system (such as displays, control panel hardware, control panel firmware, SDK controller software, room environmental components, and furniture) will be referred back to the Partner.

### **Post-Customer Installation**

The following post-customer installation questions should be referred to the local Polycom support number by the certified Partner:

- RMA of a broken Polycom part
- Questions about the Polycom software not working properly
- Polycom software updates and upgrades

Any questions on parts or software that are not components of the ATX system (such as displays, control panel hardware, control panel firmware, SDK controller software, room environmental components, and furniture) will be referred back to the Partner.





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# Integration Overview

Polycom offers two distinct ATX software solutions:

- The Polycom ATX SDK version 3.0.3 enables AV integrators to add more value to ATX 200, ATX 300, and ATX 400-based systems by allowing the integrators to support the unique requirements of their customers. The ATX SDK works in conjunction with special control panel code (provided by the control panel vendor), which enables AV integrators to customize the user interface to the specific needs of their customers.

The Polycom ATX SDK system supports Telepresence Interoperability Protocol (TIP) and Session Initiation Protocol (SIP) features based on integrator implementation.

The addition of a SoundStructure C-series device (available with both the ATX 300 and the ATX SDK) enables an integrator to extend the capabilities of the ATX SDK system with additional microphones and more audio processing capabilities. Note that ATX SDK systems with SoundStructure cannot use Telepresence Interoperability Protocol (TIP). For additional information about SoundStructure, refer to the *Integrating Polycom SoundStructure with the ATX and ATX SDK Immersive Telepresence Systems Application Note*.

- The Polycom ATX 300 version 3.0.3 provides a user interface with the same feature set as the standard Polycom Immersive Telepresence software, including either the Polycom Touch Control or the Crestron® Touch Panel.

With the Crestron Touch Panel, users can select either the Enhanced or the Classic user interface. The Classic user interface maintains the look and feel of the ATX version 2.0 user interface, but does not include the features introduced with version 2.6. Note that a 10-inch Touch Panel is required for the Enhanced user interface.

Telepresence Interoperability Protocol (TIP) and Session Initiation Protocol (SIP) features are not supported with the Crestron Touch Panel. The Polycom Touch Control is required for TIP and SIP support.

For additional information regarding the differences between the ATX SDK and the ATX 300 systems, refer to the *Polycom Architected Telepresence Experience ATX/ATX SDK Technical Specifications*.

## Integrator's Toolkit

You should have the following items available before you begin the integration:

- Calculator
- Display cleaner (non-ammonia or non-alcohol-based)
- Gray card, Lastolite
- Laptop
- Laser level, Stanley or equivalent
- Latex gloves for handling displays and cameras
- Level, 2-foot
- Light meter, Minolta or equivalent
- Marker, black permanent
- Microfiber cloth
- Tape, low tack
- Tape measure
- Wire cutters and strippers
- Wire ties

## Integration Sequence

When installing a Polycom ATX SDK or ATX 300 system, you usually install it in the order listed below. Note, however, that the integration sequence may vary due to factors such as room configuration, limited space to store the equipment, number of installers, and so on.

### **Hardware:**

- 1 Select the room
- 2 Select the displays and table
- 3 Determine the placement of the displays and tables
- 4 Install the displays and table
- 5 Install the cameras
- 6 Create the camera alignment marks
- 7 Place the chairs

**Electronic Components:**

- 1 Install the codecs and the System Controller
- 2 Install the speakers
- 3 Install the microphones
- 4 Install the Polycom Touch Control or the Crestron Touch Panel
- 5 Attach the serial number label
- 6 Connect the cables

**ATX Software Configuration:**

- 1 Perform the HDX out-of-box setup
- 2 Upgrade and activate the HDX software
- 3 Perform the software configuration as described in the *Polycom Immersive Telepresence (ITP) Administrator's Guide* (part number 3725-26945-005)
- 4 Configure the HDX passwords

**Display and Camera Configuration:**

- 1 Configure the display settings
- 2 Prepare for the camera alignment
- 3 Align the cameras for the presets
- 4 Match the cameras for color and brightness
- 5 Configure the audio
- 6 Measure the room lighting
- 7 Check the display behavior when calling and hanging up

## Pre-Integration Tasks

**Before beginning the integration, you should:**

- 1 Inspect the site:
  - a Locate the equipment boxes and the room in which you will install the ATX system.
  - b Review [Appendix A](#) to help determine if the room is ready for the installation.
- 2 Make sure that you are familiar with the customer's protocols and procedures for security and safety.

- 3** When unpacking:
  - a** Review the packing slip, including the list of spare parts.
  - b** Check the inventory for completeness.
  - c** Verify both the quantity and condition of the components.
- 4** Acquire the destination address for the Help Desk. Note that the Help Desk is a service provider, such as a Video Network Operations Center (VNOC), that has been pre-arranged by the integrator; it is not Polycom Support.



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# Installing the Displays, Table, Cameras, and Chairs

This chapter provides suggestions for how to select the room, displays, and table, and how to determine where to place the displays and table. It also provides information about installing the cameras and creating the camera alignment marks. Lastly, this chapter includes information about how to place the chairs at the table to ensure that the conference participants appear correctly on the displays.



Note that the information is provided here as guidelines only. These guidelines allow you to create a highly immersive, real-size, telepresence solution for a typical conference room with a rectangular table. Integrators may also achieve high quality telepresence solutions based on the ATX platform in a wide variety of room sizes, table shapes, and seating arrangements.

Ultimately, the quality of experience for a telepresence solution involves a multitude of factors ranging from furniture design, camera placement and angles, display technology, room lighting and acoustics, and many other factors. While Polycom does not provide design consulting services, we do work very closely with our certified ATX partners to ensure success of their designs. Polycom is not in a position to guarantee or otherwise warrant that a proposed design will meet the expectations of the customer.

## Selecting the Room, Displays, and Table

To achieve the most realistic immersive experience, you must select the appropriate room and furnishings as described in this section.

### Selecting the Room

When selecting a room in which to install the ATX 200, ATX 300, or ATX 400 system, you must take a number of factors into consideration. For example, besides room size, you must consider the placement of the windows and doors, the ceiling type, the noise level, the network available at the site, and so on.

This section provides the room dimensions; however, for complete information about selecting a room, refer to [Appendix A](#). The information in [Appendix A](#) can help you decide which room you should select and which changes, if any, need to be made to that room prior to the ATX installation.

The following table lists the minimum and recommended room width, room depth, and ceiling height for an ATX 200, ATX 300, or ATX 400 room.

	Room Width		Room Depth		Ceiling Height	
	Minimum	Recommended	Minimum	Recommended	Minimum	Recommended
<b>ATX 200</b>	18' (5.5 m)	24' (7.3 m)	13' 6" (4.1 m)	15' (4.6 m)	8' (2.4 m)	8' 8" (2.6 m)
<b>ATX 300</b>	23' (7 m)	29' (8.8 m)	13' 6" (4.1 m)	15' (4.6 m)	8' (2.4 m)	8' 8" (2.6 m)
<b>ATX 400</b>	28' (8.5 m)	34' (10.4 m)	13' 6" (4.1 m)	15' (4.6 m)	8' (2.4 m)	8' 8" (2.6 m)

Figure 2-1 shows the width, depth, height, and additional room dimensions.

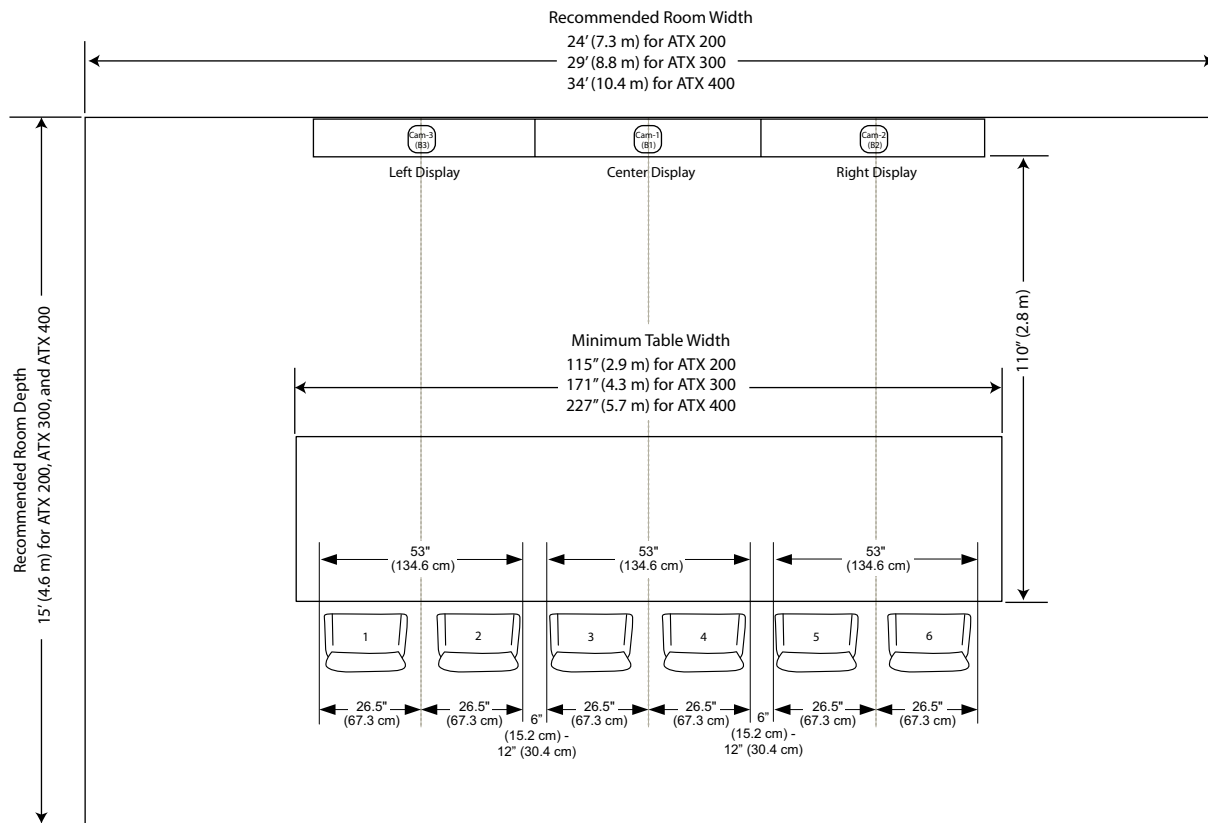


Figure 2-1 ATX Room Dimensions

## Selecting the Displays and Table

The list below provides the basic information you need when choosing your displays and table for the ATX 300 system. Following these guidelines will enable you to create a lifelike immersive telepresence experience. However, you may decide to make changes depending on your particular situation.

For ATX SDK systems, you should adjust these recommendations as needed to fit your room size, table shape, and seating arrangement.

- The displays should be between 58" (147.3 cm) to 65" (165.1 cm) in diagonal size.
- Each display must have an HDMI input.
- Each display must be able to go into Sleep or Standby mode when no video is received. Additionally, each display must be able to wake up from Sleep or Standby mode when video is received.
- The displays must be able to support 1920 x 1080 resolution @ 60Hz without overscan or underscan.

- The table must be rectangular.

Note that you can use more than one rectangular table and set them up in a non-rectangular seating arrangement as shown in [Figure 2-3](#).

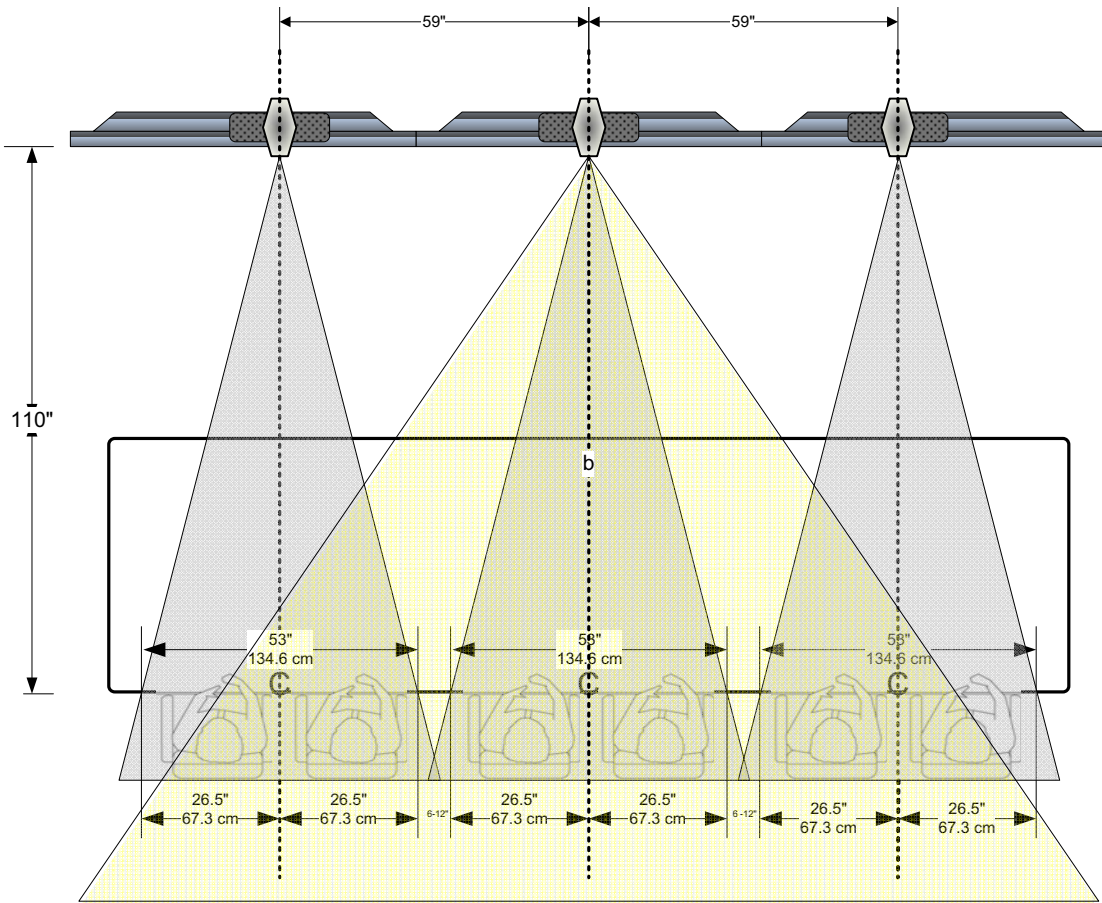
- As shown in [Figure 2-1](#), the table width required to capture two people is 53" (134.6 cm). The space between the cameras should be between 3" (7.6 cm) and 6" (15.2 cm).
- As shown in [Figure 2-1](#), the table must have a minimum width of 115" (292.1 cm) for ATX 200 rooms, 171" (434.3 cm) for ATX 300 rooms, and 227" (576.6 cm) for ATX 400 rooms.
- If you choose to add content display(s), Polycom recommends selecting LCDs. You can select plasma displays, but they are subject to burn-in from the Polycom logo that appears when content is not being shared (if that option is selected). If you do choose plasma displays, be sure to power off the content displays when they are not being used.

## Determining the Placement of the Displays and Table

To properly align the cameras, you should correctly place the displays and table relative to each other. These are the guidelines you should follow:

- The displays must be mounted on a wall so that they are horizontally aligned and positioned next to each other with no space between the bezels.
- The displays must be mounted so that the bottom edge of the active video on the displays is at the same height as the tabletop. For example, if the tabletop is 30" (76.2 cm) high and the displays have a 2" (5.1 cm) bottom bezel, then the displays must be mounted so that their bottom edge is 28" (71.1 cm) from the floor.

- The distance from the rear edge of the table to the front of the displays should be 110" (279.4 cm). **Figure 2-2** shows the fields of view from the cameras when the table is placed at this distance in an ATX 300 room. Note that the center camera does not capture all the participants completely in the full room view.

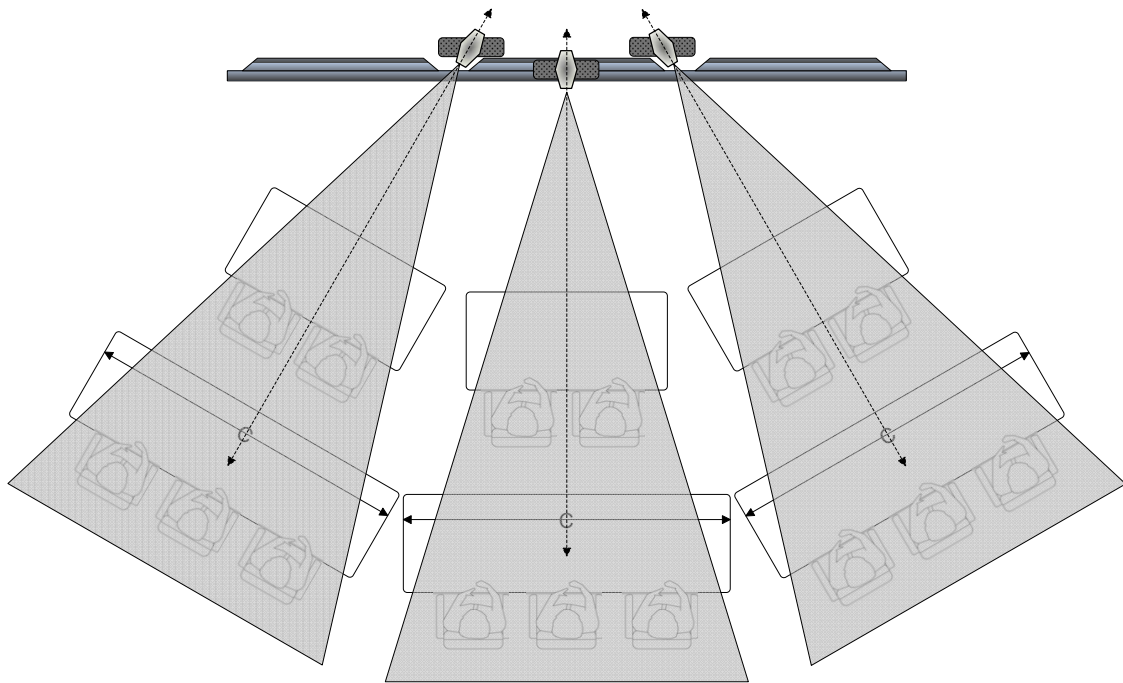


**Figure 2-2** Camera Fields of View with a Table Placed at 110" (279.4 cm) — ATX 300 System

- The table must be centered with the vertical center of the middle display.

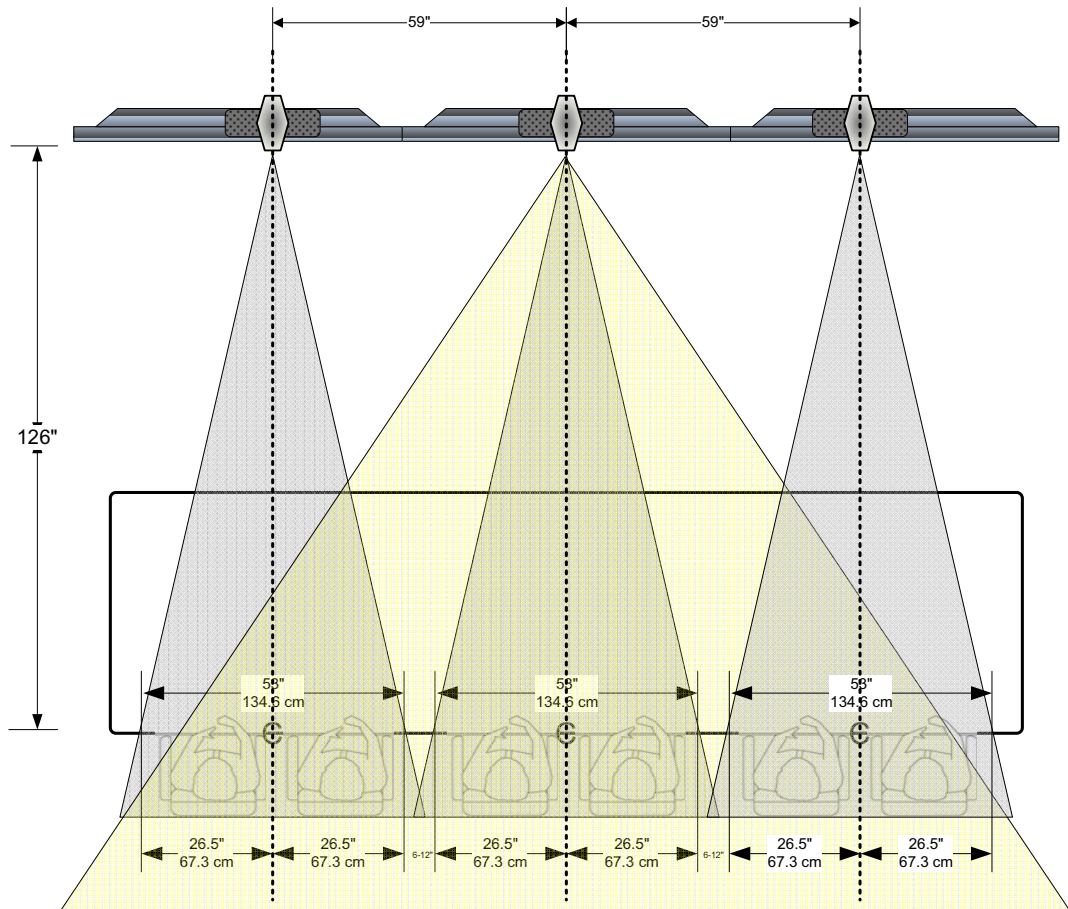
- For non-rectangular seating arrangements, you need to provide the vertical and horizontal fields of view along with the table size into a CAD package. The target is for the sight line to be perpendicular to the table edge and to the people in the room.

Note that the camera line of sight is perpendicular and intersects the tables at their mid point.



**Figure 2-3** Camera Fields of View with Non-Rectangular Seating Arrangement — ATX 300 System

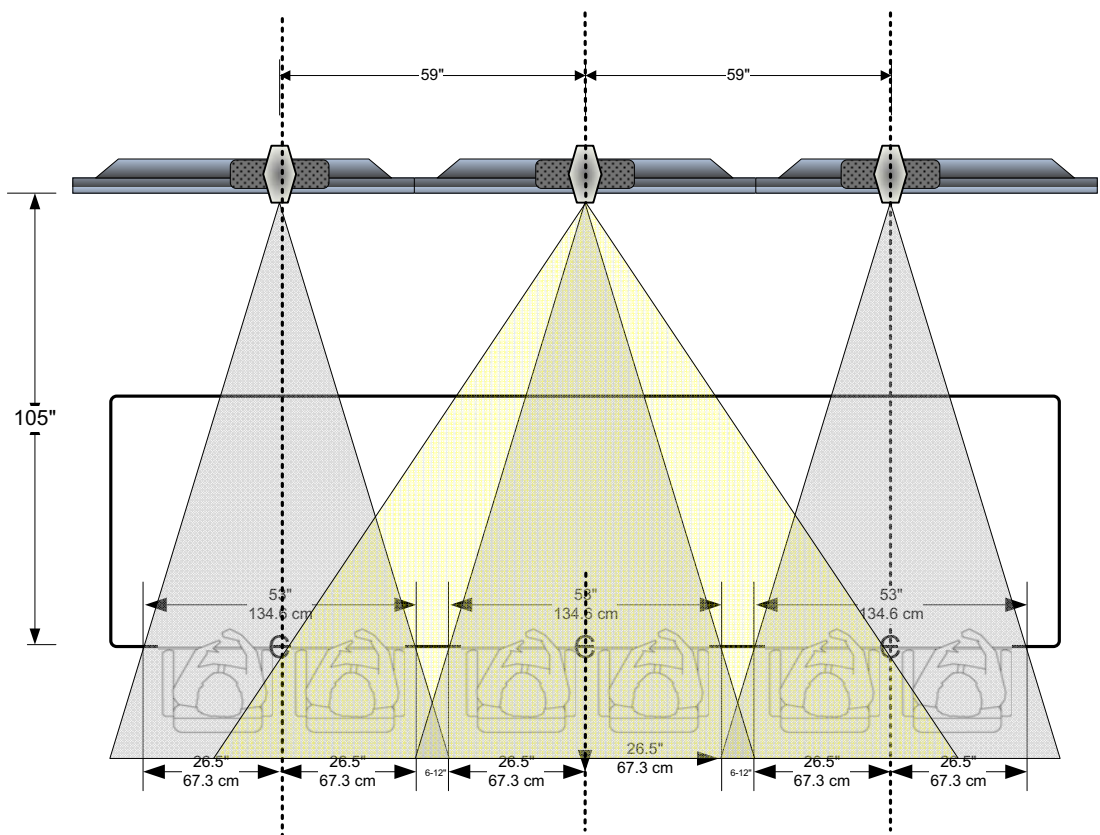
For the ATX 300 system only, if the room is large, you can choose to place the table farther than 110" (279.4 cm). By moving the table out to 126" (320 cm), you will be able to completely see Seats 1 through 6 when the center camera zooms out for the full room view, as shown in [Figure 2-4](#). Note, however, that by moving the table farther than 110" (279.4 cm), the participants will appear somewhat farther from view on the far end of the conference.



**Figure 2-4** Camera Fields of View with a Table Placed at 126" (320 cm) — ATX 300 System

- If, due to room restrictions, you must position the table closer than 110" (279.4 cm), the field of views will widen and, therefore, overlap more than normal. **Figure 2-5** shows the overlap in an ATX 300 room. This increases the likelihood of a person appearing on two displays at the same time. For example, if a person seated at Seat 2 backs up or moves to his/her right, the people at the far end will see that person on two displays at the same time. If you move the table as close as 84" (213.4 cm), Seats 2 through 5 may not appear completely on camera in calls in which only one camera is used to capture Seats 2 through 5.

Note that placing the table closer than 110" (279.4 cm) will prevent the camera from capturing the outside participants.

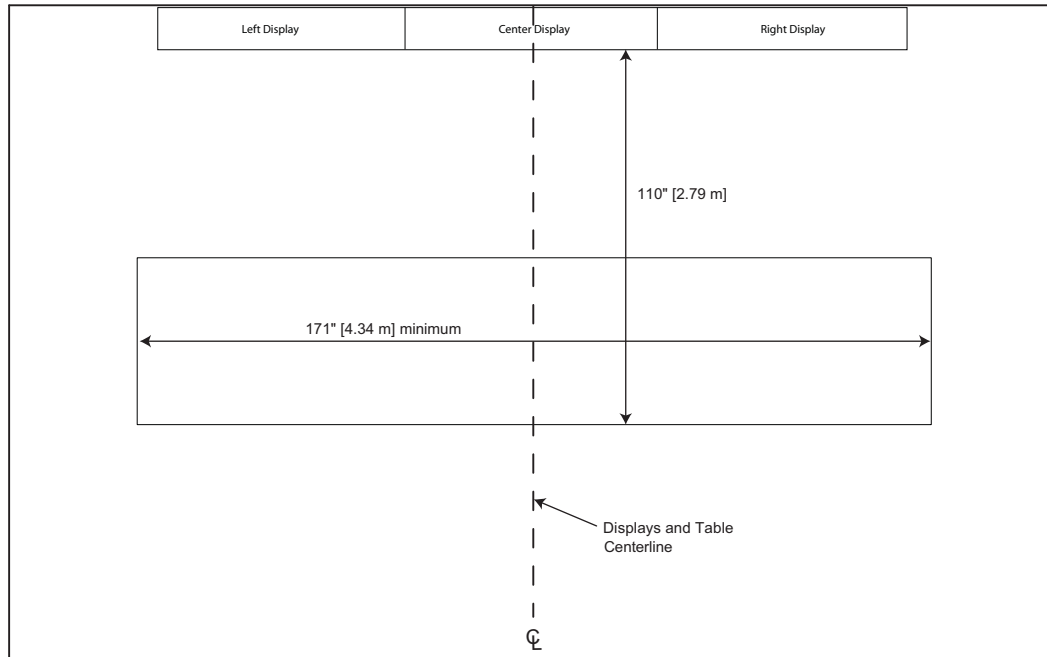


**Figure 2-5** Camera Fields of View with a Table Placed Closer than 110" (279.4 cm) — ATX 300 System



## Installing the Displays and Table

Once you have determined where to place the displays, you can install them on the wall. After installing the displays, place the rear edge of the table 110" (279.4 cm) from the front of the displays. The table should be parallel to the displays and the centerline of the table should align with the centerline of the displays as shown in [Figure 2-6](#).



**Figure 2-6** Placing the Table Relative to the Displays — ATX 300 System

## Installing the Cameras

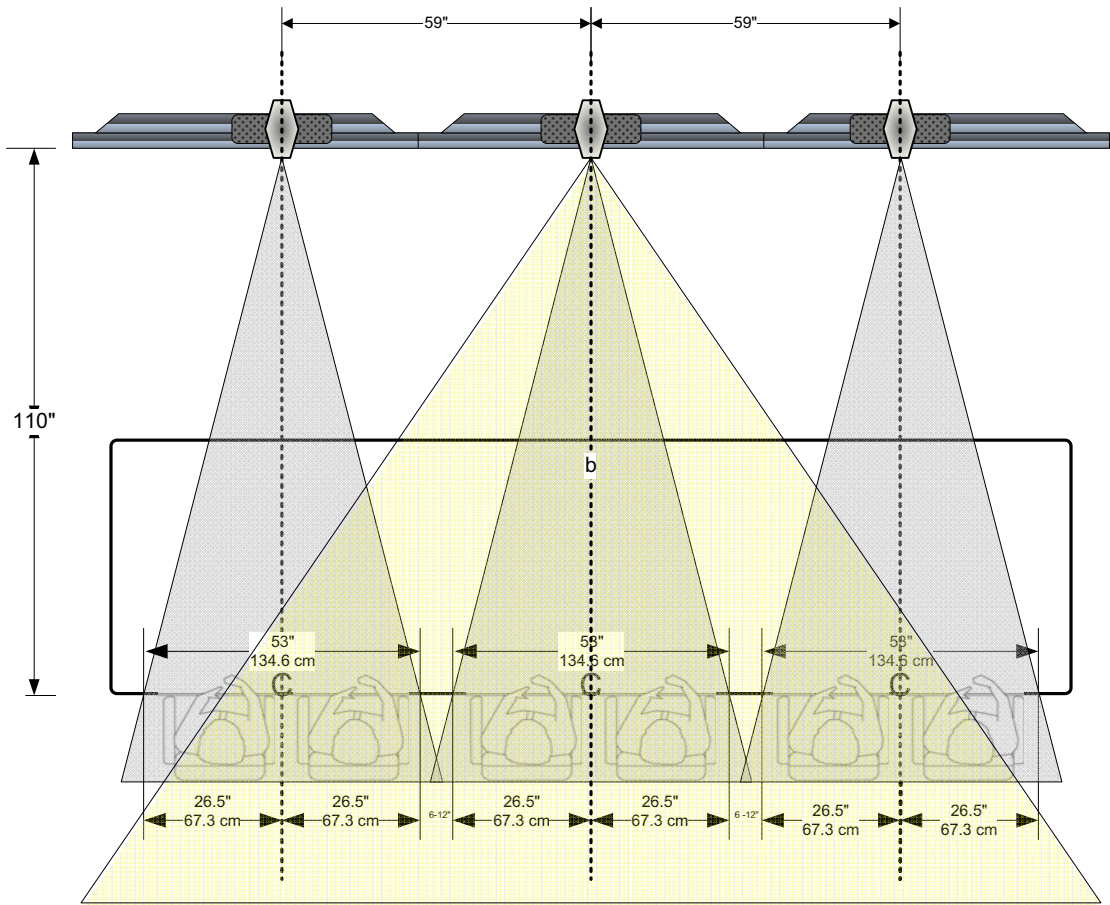
Both the ATX SDK and ATX 300 solutions come equipped with Polycom EagleEye III cameras. When installing the cameras, you must center one camera above each display.

You can either attach the cameras to the wall above the displays or you can install the cameras on top of the displays. Polycom highly recommends attaching the cameras to the wall. By doing so, the cameras are less likely to become misaligned if the displays get bumped. If you choose to install the cameras on top of the displays, carefully secure the cameras and mounts so that the camera alignment is maintained.

Whether you are planning to install the cameras on the wall or on top of the displays, you must first attach them to the Polycom EagleEye shelf. For information about how to attach the cameras to the shelf and how to mount

the shelf to the wall or to the displays, refer to the *Setting up the Polycom EagleEye Shelf* document (part number 1725-24144-002) provided with the shelf.

The camera should be placed on the center of the captured image rather than the center of the display as shown in [Figure 2-7](#). This makes the camera line of sight perpendicular to the table edge.



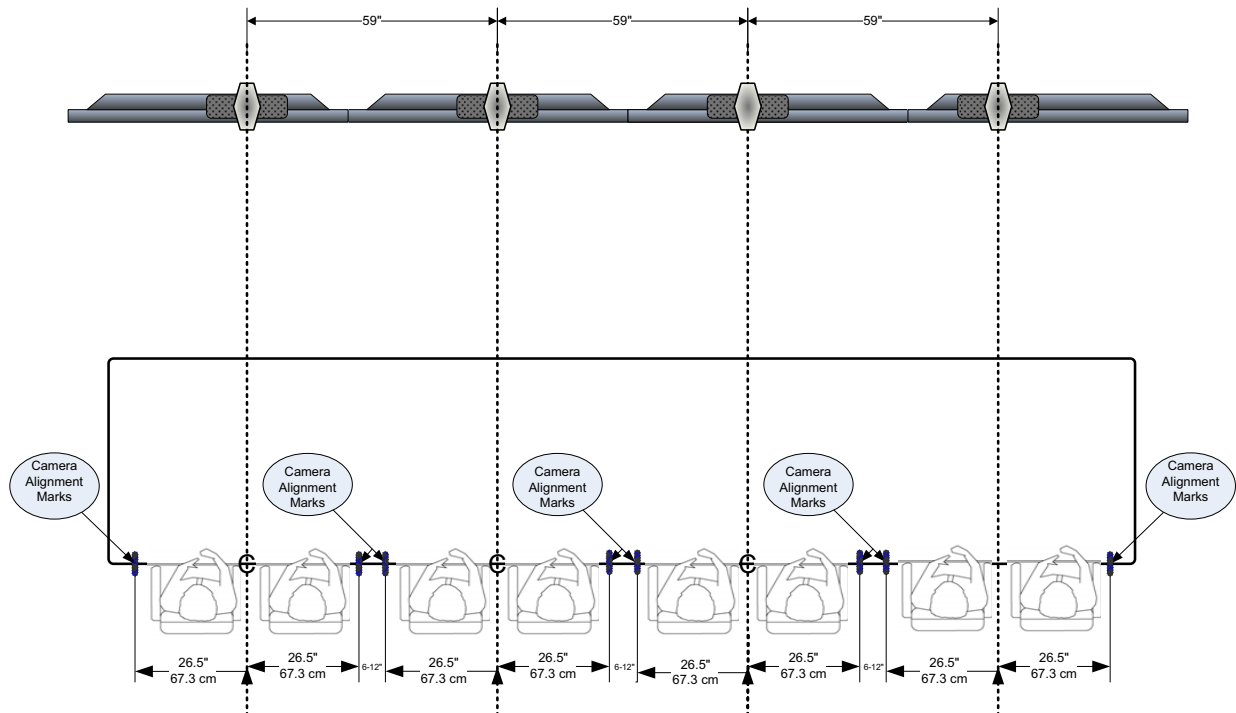
**Figure 2-7** Placing the Cameras — ATX 300 System

## Creating the Camera Alignment Marks

### To create the camera alignment marks:

- 1 Ensure that the vertical centerline of the table aligns with the vertical centerline of the middle display as shown in [Figure 2-6](#).
- 2 Determine the table length required to capture two people on camera in seating positions. The recommended width is 53" (134.6 cm).
- 3 Determine the separation distance between the captured field of view. The recommended distance is 6" (15.2 cm).  
Keep in mind that the wider the distance, the further it takes before the cameras' field of views overlap.
- 4 Adhere painter's tape to the top of the table to create the camera alignment marks as shown in [Figure 2-8](#).

Note that all the cameras are normalized to the same width so that they all have the same scaled factor.



**Figure 2-8** Creating the Camera Alignment Marks

## Placing the Chairs

As shown in [Figure 2-2](#), where a conference participant is seated affects where and how they appear on the displays at the far site. To ensure that the conference participants appear on the displays, but that they do not appear on more than one display, you should place the chairs at the proper locations at the table and mark those locations.

To help participants keep their chairs at the proper locations at the table, Polycom recommends that you use one or more of the following visual or physical markers:

- Place placemats on the tabletop at each of the proper chair locations.
- Mark the tabletop or the floor to indicate where the chairs should be positioned.
- Attach barriers under the table so that the participants cannot physically move their chairs to an incorrect location.

Additionally, the chairs you select must not exceed the following dimensions:

- Arm span: 24½" (62.2 cm)
- Wheel base: 27" (68.6 cm)

---

# Installing the Remaining Electronic Components

Now that you have installed the displays, table, cameras, and chairs, you can install the remaining electronic components, which may include:

- Polycom HDX codecs and, if needed, HDX 2U rack mounting trays
- System Controller, C2ENET-1 Ethernet interface expansion card (may not be needed for ATX SDK version 3.0.3), and mounting ears for the System Controller
- Speakers and, if needed, speaker mounts
- Three Polycom Ceiling Microphone Arrays
- Polycom Touch Control or Crestron Touch Panel
- The TPS-IMPC interface module, which is typically used with the wired Crestron Touch Panel (may not be needed for ATX SDK version 3.0.3)
- Cables for all the components (Refer to the *Polycom ATX 200/300/400 System Wiring Specification* (part number 3823-30099-002) for more information.)

## Installing the Codecs and the System Controller

The integrator is responsible for determining where to place the Polycom codecs and the System Controller. In most cases, the codecs and the System Controller will be installed in a rack. If so, perform the following steps. Note that this is optional if you are using the ATX SDK.

**To prepare the codecs and the System Controller for installation in a rack:**

- 1 Attach each codec to an HDX 2U rack mounting tray using the hardware supplied with the trays.

For more information, refer to the *Setting up the Polycom HDX 2U Rack Mounting Solution* document (part number 1725-28249-002).

- 2 Install the codecs in the rack.
- 3 Install the C2ENET-1 Ethernet interface expansion card in the System Controller, as described in the installation guide supplied with the card (may not be needed for ATX SDK version 3.0.3).
- 4 Attach the mounting ears to the System Controller using the hardware supplied with the System Controller.

For more information, refer to the documentation supplied with the System Controller.

- 5 Install the System Controller in the rack.

## Installing the Speakers

You must connect speakers to the ATX system in order to hear audio. You can provide your own speakers; however, Polycom recommends using the Polycom Stereo Speaker kit, which provides excellent volume and rich sound in large rooms. The Polycom Stereo Speaker kit (part number 2200-21969-120 for 120V power or 2200-21969-240 for 240V power) includes two speakers as well as a subwoofer. If you choose to provide your own speakers, the speakers should be equivalent to the speakers provided with the Stereo Speaker kit. For more information about the Polycom Stereo Speaker kit, refer to <http://www.polycom.com>.

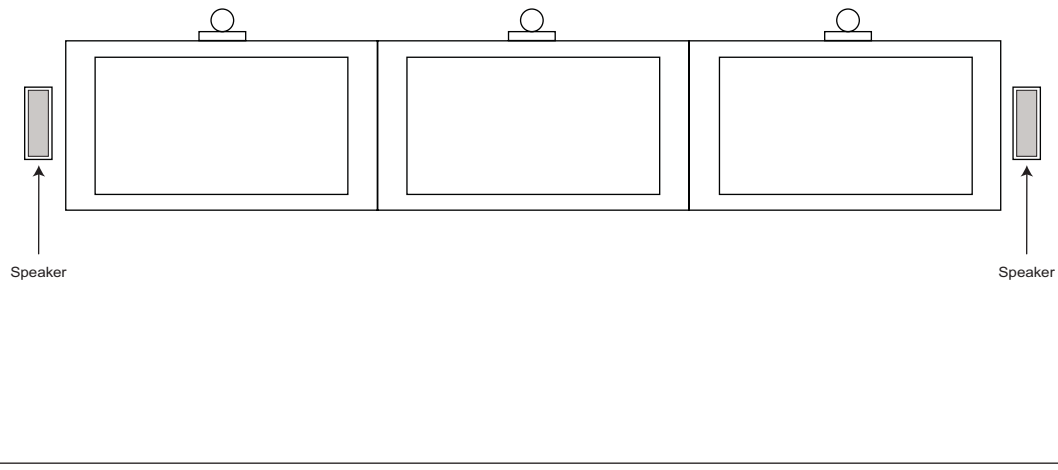
To attach the speakers to the wall near the displays, Polycom recommends using Omnimount universal speaker mounting brackets or an equivalent mounting bracket.

**To install the speakers:**

- 1 Install one speaker mounting bracket on the wall to the left of the displays and one on the wall to the right of the displays by following the directions in the documentation provided with the mounting brackets.

Install the brackets so that the speakers will be centered as much as possible with the side of the displays as shown in [Figure 3-1](#).

- 2 Attach one speaker to each mounting bracket.
- 3 For better audio projection, angle the speakers 40 degrees inwards towards the center of the table.



**Figure 3-1** Installing the Speakers — ATX 300 System

- 4 Place the subwoofer along the same wall as the displays or in a corner near the displays.

## Installing the Microphones

In order to support the Telepresence Interoperability Protocol (TIP), three Ceiling Microphone Arrays are required in ATX 200, ATX 300, and ATX 400 rooms. In addition, the Ceiling Microphone Arrays are required.

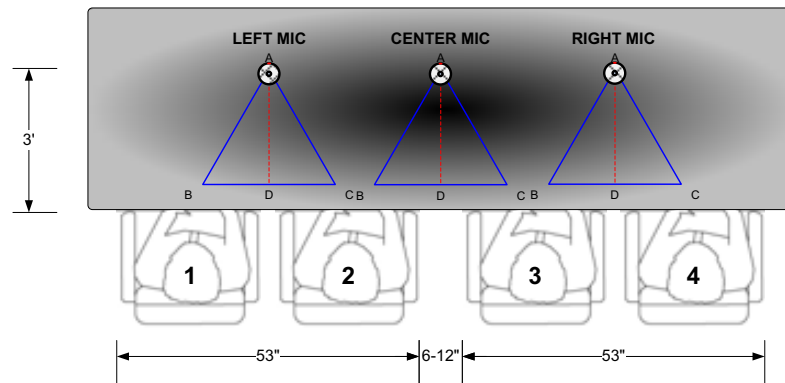
If the Ceiling Microphone Arrays cannot be installed, optional Polycom HDX tabletop microphones can be installed instead, however TIP will not be supported. For information about installing these optional tabletop microphones, see [Installing the Tabletop Microphones](#) on page 3-12.

## Installing the Ceiling Microphone Arrays

Before you begin, check the height of the ceiling in the ATX room. If the ceiling is 10' (304.8 cm) or higher, you will need an optional 6' (182.2 cm) drop cable for each Ceiling Microphone Array. To ensure that you are using the correct cable, verify that the number of pins on the cable connector matches the number of pins on the connector on the electronics enclosure.

### To install the Ceiling Microphone Arrays:

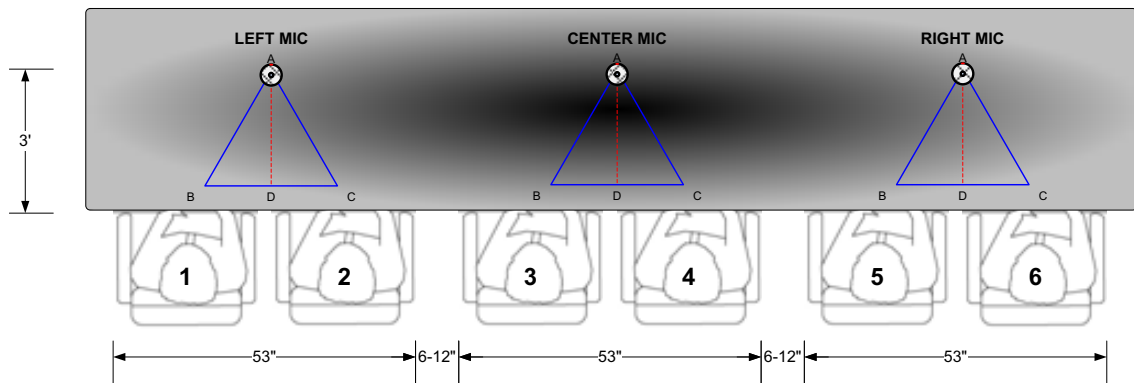
- 1 Determine where you will place the Ceiling Microphone Arrays in the room:
  - For the ATX 200 system:
    - » The center Ceiling Microphone Array must be centered on the table, between seats 2 and 3.
    - » The left Ceiling Microphone Array must be centered between seats 1 and 2.
    - » The right Ceiling Microphone Array must be centered between seats 3 and 4.
    - » The distance from the front edge of the table to the Ceiling Microphone Arrays is 3' (91 cm).
    - » The height of the Ceiling Microphone Arrays from the floor must be between 6'8" (203 cm) and 7' (213 cm).



**Figure 3-2** ATX 200 Ceiling Microphone Array Placement

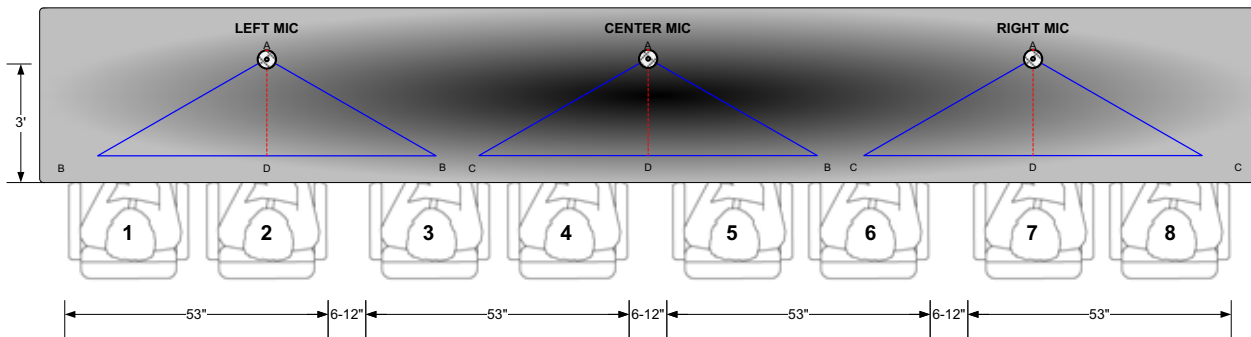


- For the ATX 300 system:
  - » The center Ceiling Microphone Array must be centered on the table, between seats 3 and 4.
  - » The left Ceiling Microphone Array must be centered between seats 1 and 2.
  - » The right Ceiling Microphone Array must be centered between seats 5 and 6.
  - » The distance from the front edge of the table to the Ceiling Microphone Arrays is 3' (91 cm).
  - » The height of the Ceiling Microphone Arrays from the floor must be between 6'8" (203 cm) and 7' (213 cm).



**Figure 3-3** ATX 300 Ceiling Microphone Array Placement

- For the ATX 400 system:
  - » The center Ceiling Microphone Array must be centered on the table, between seats 4 and 5.
  - » The left Ceiling Microphone Array must be centered between seats 2 and 3.
  - » The right Ceiling Microphone Array must be centered between seats 6 and 7.
  - » The distance from the front edge of the table to the Ceiling Microphone Arrays is 3' (91 cm).
  - » The height of the Ceiling Microphone Arrays from the floor must be between 6'8" (203 cm) and 7' (213 cm).

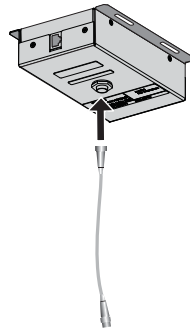


**Figure 3-4** ATX 400 Ceiling Microphone Array Placement

Note that it is important to adhere to the measurements in the Ceiling Microphone Array Placement illustrations in order for TIP segment switching to work properly.

- 2 Attach the 2' (60.9 cm) cable to the bottom of each electronics enclosure. Note that if the ceiling is 10' (304.8 cm) or higher, you will need an optional 6' (182.8 cm) drop cable for each Ceiling Microphone Array rather than the 2' (60.9 cm) drop cable.

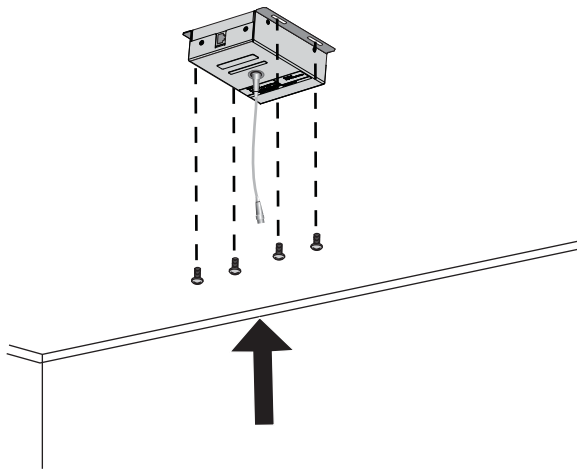
To ensure that you are using the correct cable, verify that the number of pins on the cable connector matches the number of pins on the connector on the electronics enclosure.



**Figure 3-5** Attaching the Drop Cable to the Electronics Enclosure

- 3 If the ceiling is suspended, skip this step and continue with step 4. If the ceiling is not suspended, attach the electronics enclosure to the ceiling using suitable hardware for the ceiling type. Align the electronics enclosure so that, when the microphone ball is attached, the dot on the ball points straight towards the wall behind the credenza as described in step 10.

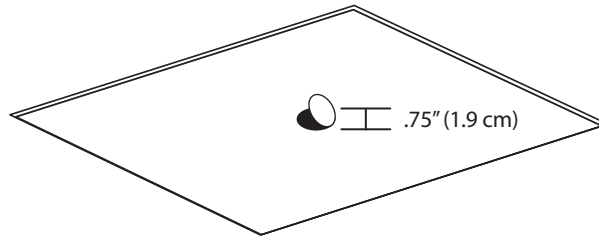
Use caution when climbing a ladder to attach the electronics enclosure.



**Figure 3-6** Attaching the Electronics Enclosure to a Ceiling that is Not Suspended

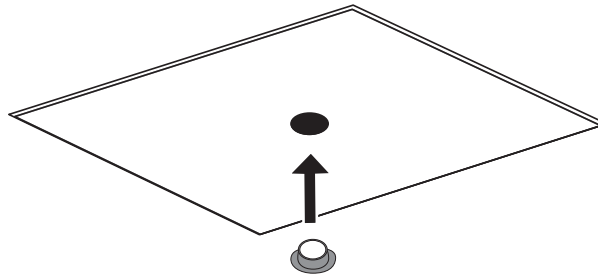
Continue with step 6.

- 4** If the ceiling is suspended:
  - a** Remove a ceiling tile from the drop ceiling in the locations where you will be installing a Ceiling Microphone Array.  
Use caution when climbing a ladder to remove the ceiling tiles.
  - b** Cut a .75" (1.9 cm) hole in each ceiling tile that you removed.



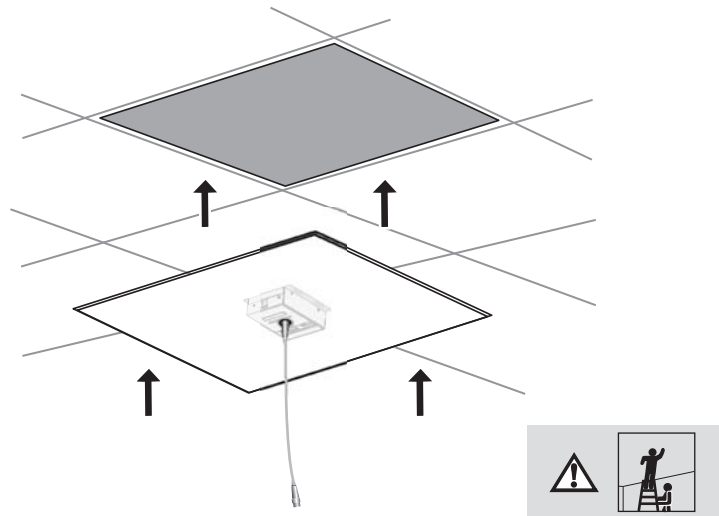
**Figure 3-7** Cutting the Ceiling Tile for the Ceiling Microphone Array

- c** Insert a bushing into the hole in each of the ceiling tiles.



**Figure 3-8** Inserting the Bushing into the Ceiling Tile

- d** Place an electronics enclosure on each ceiling tile, making sure that the drop cable drops through the hole in the tile.
- e** Place the ceiling tile back into the ceiling.  
Use caution when climbing a ladder to replace the ceiling tiles.



**Figure 3-9** *Placing the Ceiling Tile Back into the Ceiling*

- f** For added safety when removing the ceiling tiles at a later time, securely attach the electronics enclosure to the ceiling supports using wire or other hardware appropriate for your ceiling type and in accordance with local regulations.

If you use wire to secure the electronics enclosure, be sure that the length of the wire is short enough to prevent the enclosure from striking a person removing the ceiling tiles.

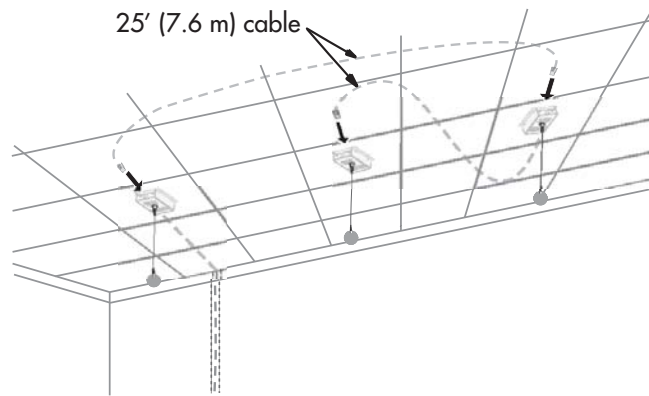
- 5** Attach a microphone ball to each 2-foot cable.



**Figure 3-10** *Attaching the Ceiling Microphone Ball*

- 6** Connect the cables:

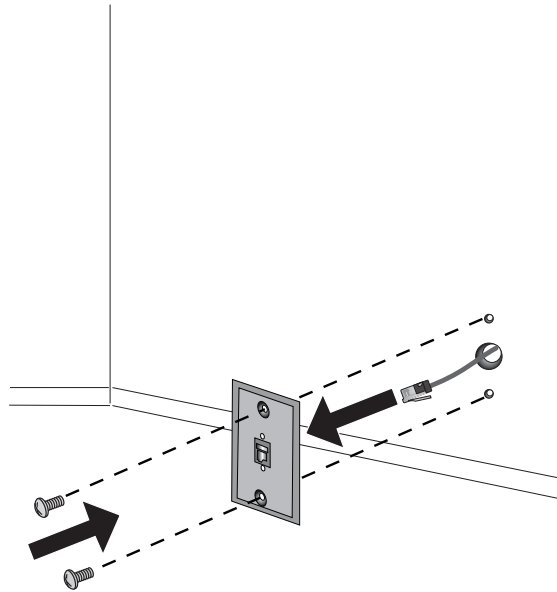
- a** Connect one end of a 25' (7.6 m) plenum crossover cable to the center electronics enclosure, and connect the other end to the electronics enclosure on the right (when facing the credenza).



**Figure 3-11** Connecting the Cables

- b** Connect one end of a 25' (7.6 m) plenum crossover cable to the electronics enclosure on the right, and connect the other end to the electronics enclosure on the left.
- c** Connect one end of a 50' (15.2 m) plenum crossover cable to the electronics enclosure on the left, and then run the cable through the conduit in the wall behind the credenza and down to the junction box. (This conduit and junction box should have been previously installed by an electrician.)
- d** Pull the end of the 50' (15.2 m) cable through the junction box and connect it to the back of the wall plate provided in the Ceiling Microphone Array kit.

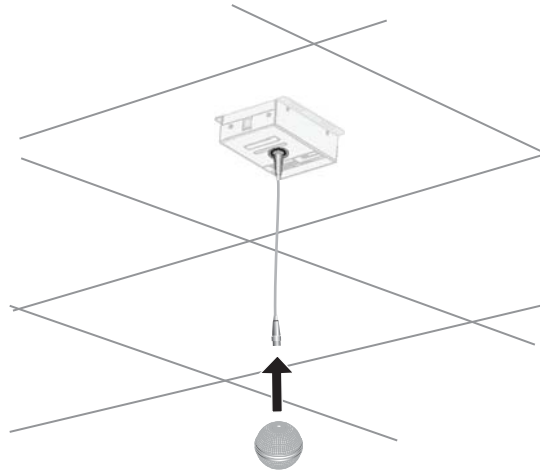
- 7 Attach the wall plate to the junction box using two 6-32 oval head screws. Note that these screws are provided with the ATX; they are not included in the bag with the wall plate.



**Figure 3-12** Attaching the Wall Plate and Connecting the 10' (3.1 m) Cable

- 8 Connect one end of the 10' (3.1 m) non-plenum straight-through cable to the wall plate, and connect the other end to the Primary codec.
- 9 Connect a microphone ball to each drop cable.

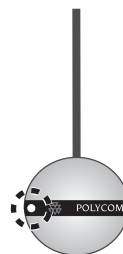
Ensure that the microphone balls are located approximately 7' (213.3 cm) above the floor. If the ceiling is 10' (304.8 cm) or higher, the microphone balls are typically too high. In such cases, you must use an optional 6' (182.8 cm) drop cable (part number 2457-26765-072 for white or 2457-26764-072 for black) for each Ceiling Microphone Array.



**Figure 3-13** Attaching the Ceiling Microphone Ball

- 10** Point the dot, which is located on the band around the middle of the microphone ball, straight towards the wall behind the displays.

Inside the microphone ball are three hypercardioid microphones. You can achieve the best performance of the echo canceller and the best audio pickup of the participants by rotating the ball so that the dot points towards the wall behind the displays.



**Figure 3-14** Aligning the Dot on the Ceiling Microphone Ball

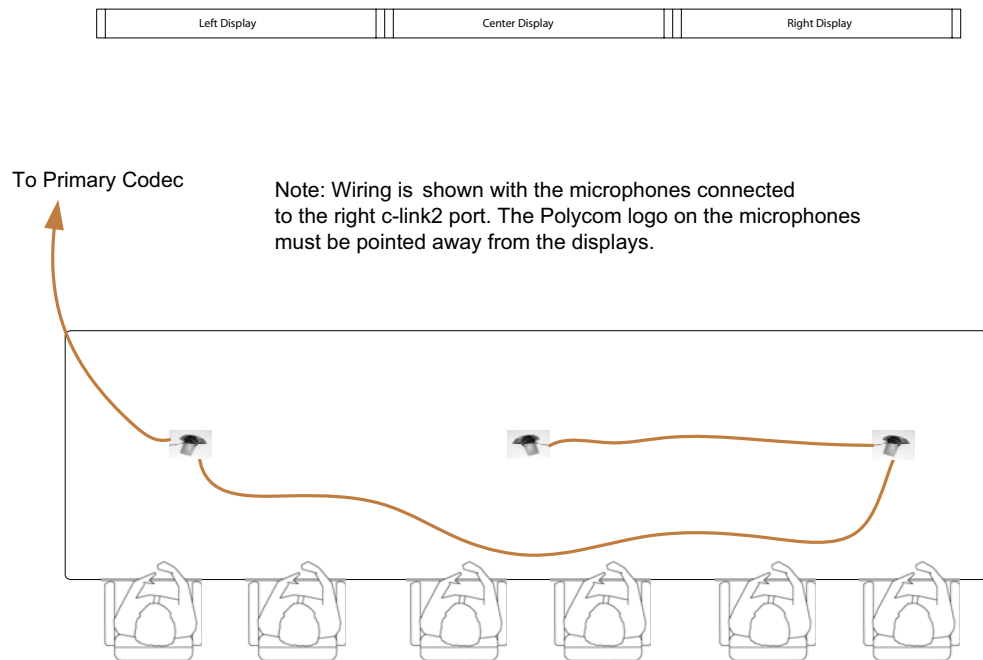
## Installing the Tabletop Microphones

If the Ceiling Microphone Arrays cannot be installed in the ATX room, you can install optional HDX tabletop microphones instead.

To install the tabletop microphones, you must have three HDX tabletop microphone array kits. Each kit contains one microphone array and one 25' (7.62 m) cable. If you need a longer cable to reach the codec, you can order a 50' (15.24 m) cable from Polycom.

The illustration below shows the tabletop microphone setup in an ATX 300 room.

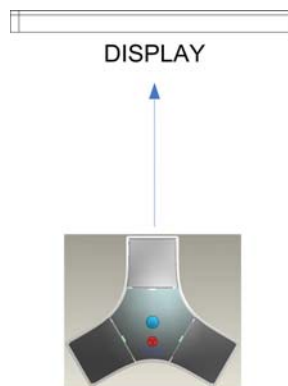




**Figure 3-15** *Tabletop Microphone Placement*

When you install tabletop microphones, you should place them on the table in the positions shown in [Figure 3-15](#). Make sure that the Polycom logo on each microphone points away from the displays as shown in [Figure 3-16](#). To achieve the best imaging, you should keep the microphones from rotating out of position. To do so, you may want to consider detenting the microphones.

Additionally, you may want to add holes or channels to the table to hide the cables.



**Figure 3-16** *Tabletop Microphone Orientation*

## Installing the Polycom Touch Control or the Crestron Touch Panel

This section describes how to install either the Polycom Touch Control (part number 2200-20070-001) or the Crestron Touch Panel.

- If the site has a Polycom Touch Control, refer to the following section.
- If the site has a Crestron Touch Panel, refer to the [Installing the Crestron Touch Panel](#) section on page 3-15.
- If the site has an ATX SDK with a vendor-provided control module, skip this section and install the control module according to the documentation provided with that control module.

### Installing the Polycom Touch Control

#### To install the Polycom Touch Control:

- 1** Connect one end of the power supply cable that is shipped with the Polycom Touch Control to a Power Distribution Unit or other source of power.
- 2** Connect the other end of the power supply cable to the power adapter cable that is shipped with the Polycom Touch Control.
- 3** Connect one end of the power adapter cable to the Primary codec.
- 4** Connect the other end of the power adapter cable to the Ethernet cable that is shipped with the Polycom Touch Control.
- 5** Run the Ethernet cable to the table, and then run it through the oblong hole in the stand that is shipped with the Polycom Touch Control.
- 6** Connect the Ethernet cable to the back of the Polycom Touch Control.
- 7** Attach the stand to the back of the Polycom Touch Control.
- 8** Place the Polycom Touch Control near the center of the table.

Be sure to leave enough slack on the Polycom Touch Control side of the Ethernet cable so that the users can easily move the Polycom Touch Control to a comfortable position on the table.

For more information about how to set up the Polycom Touch Control, refer to the *Setting up the Polycom Touch Control* document (part number 1725-09675-002), which is shipped with the Polycom Touch Control.

## Installing the Crestron Touch Panel

### To install the Crestron Touch Panel:

- 1 Place the Touch Panel on the table.
- 2 For wired panels using the TPS-IMPC interface module, place the TPS-IMPC module in a location where the cable from the Touch Panel can easily reach it.
- 3 Connect one end of the Touch Panel cable to TPS-IMPC and connect the other end to the back of the Touch Panel.

Be sure to leave enough slack on the Touch Panel side of the cable so that users can easily move the Touch Panel to a comfortable position on the table.

## Attaching the Serial Number Label

A serial number label is supplied with each ATX system.

The ATX Warranty and Service Maintenance Agreement is determined by this unique serial number, which applies to the complete list of Polycom components shipped with the ATX system. This single serial number also enables Support to keep track of issues related to the particular ATX system. Therefore, all of the Polycom components shipped with the ATX system must remain together. Do not swap out individual components, such as one codec or one camera, without authorization. In addition, the integrator should keep track of this serial number for the customer.



When you attach the serial number label, it is important to adhere it where it will be easily accessible and will not get discarded. Polycom suggests that you adhere the label to equipment that will permanently reside with the ATX system, such as the electronics rack. Do not adhere the label to an individual component, such as a codec, because if that component needs to be replaced, the label may be lost.

## Connecting the Cables

At this point in the installation, connect the cables to the ATX components according to your own wiring configuration. Polycom provides the *Polycom ATX 200/300/400 System Wiring Specification* (part number 3823-30099-002) with each ATX system as a sample configuration.



The sample configuration in the *Polycom ATX 200/300/400 System Wiring Specification* shows a serial interface between the System Controller and all three codecs. However, for an ATX SDK version 3.0.3, you only need a serial interface between the Primary (Master) codec and the System Controller.



# Configuring the Polycom ATX System

This chapter describes the steps you must take to configure the ATX system.



Do not proceed with the configuration procedures in this chapter until you have wired the ATX system. For a sample wiring configuration, refer to the *Polycom ATX 200/300/400 System Wiring Specification* (part number 3823-30099-002).

Before you begin configuring the ATX system, make sure that:

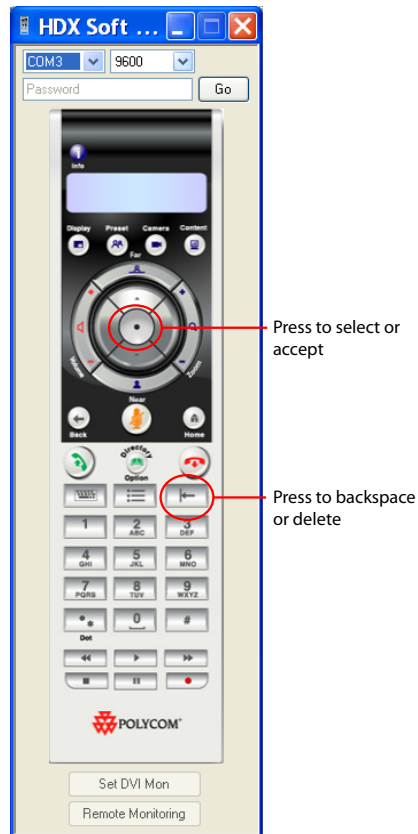
- The room is ready:
  - The displays and cameras are installed correctly.
  - The table is positioned correctly and the camera alignment marks have been created on the table.
  - The codecs are installed and the cables are connected.
- You have a laptop with:
  - A LAN connection in the room.
  - .NET Framework version 2.0 or later installed.
  - Windows 7 SP1, Windows XP SP3, or Windows Vista Business/Enterprise/Ultimate SP2 installed.
  - Serial cable (for loading the System Controller).
  - Null modem cable (for configuring the codec).

## Performing the HDX Out-of-Box Setup

**To perform the HDX out-of-box setup:**

- 1 Power on the displays.
- 2 Power on all of the HDX codecs.

- 3 Connect the null modem serial cable from the laptop to the COMM1 connector on one of the codecs.
- 4 From the Start menu on the laptop, select **Programs**, select **Polycom Telepresence Tool**, and then select **HDX Soft Remote**.



**Figure 4-1** HDX Soft Remote

- 5 From the pull-down box at the top left of the HDX Soft Remote, select the laptop COM port that is connected to the Primary codec. Note that this guide uses Primary, Secondary, Left, and Right to describe the codecs. For ATX SDK, the codecs are typically described as Master and Slaves; however, only the terms Primary, Secondary, Left, and Right are used in this guide.

A second box appears to the right of the first box on the HDX Soft Remote.

- 6 Select **9600** as the baud rate and click **Go**.

Once the laptop is connected, the boxes will turn gray and the text on the **Go** button will change to **Stop**.

**7** Click **Set DVI Mon.**

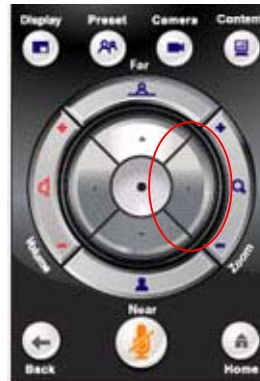
The output settings will change and the setup wizard will appear on the ATX displays. (In order for the wizard to appear on the displays, the displays must be able to handle 1024 x 768 display resolution.)

**8** Complete the setup wizard:

- a** Select **American English**.
- b** Select the country where the system will be installed (**United States** is the default).
- c** For the System Name, as an example for an ATX 300 room, enter **HDX1**, **HDX2**, or **HDX3**. Alternatively, you can enter more specific names if requested by the customer.
- d** For the LAN Properties, select the following:
  - » IP Address: **Specify** or **Automatic** (should be determined by the customer's system administrator).

Polycom recommends selecting **Specify** and then entering the IP address and the LAN settings at this point in the installation.

To insert the periods into the IP address, press the right arrow button on the HDX Soft Remote.



**Figure 4-2** HDX Soft Remote Right Arrow Button

- » Connect to LAN: **Yes**
- » Allow IP calls: **Yes**
- » Enable EAP/802.1X: Leave the check box unchecked.
- » Enable 802.1p/Q: Leave the check box unchecked.
- » Enable PC LAN Port: Leave the check box unchecked.

- e For Security, select the following:
    - » Security mode: Leave the check box unchecked.
    - » Room Password: Using the Backspace button on the HDX Soft Remote, delete the serial number, which appears on the screen as asterisks.
    - » Require Login for System Access: Leave the check box unchecked.
  - f For Registration, select the following:
    - » Name: Do not change the name; it should be the same as on the previous page.
    - » Email address: Do not enter an email address.
    - » Register: Clear the check box.
- 9 Check that the date and time is correctly set (all the codecs should have the same date and time). For more information on how to set the date and time, refer to the *Administrator's Guide for Polycom HDX Systems* available at <http://www.polycom.com/support/video/index.html>.
- 10 Repeat steps 3 through 9 for the remaining codecs.

## Upgrading and Activating the HDX Software

Before upgrading the HDX software, note the following:

- The HDX software that you must download for ATX SDK version 2.0 or earlier and ATX 300 (with the non-customizable Polycom GUI) version 2.7 or earlier is not the same. Therefore, you must ensure that you download the correct HDX software for your particular ATX model and version.
- When you upgrade the HDX software version 3.0 or later for the ATX 300 system, the directory entries are converted to a new format. If you ever have to revert to an HDX software version earlier than version 3.0, you must use the Polycom Telepresence Tool HDX Directory Downgrade tool to revert the entries to the format that existed prior to version 3.0. This will enable the directory entries to work correctly. For more information about the HDX Directory Downgrade tool, refer to the *Polycom Immersive Telepresence (ITP) Administrator's Guide* (part number 3725-26945-005).



**To upgrade and activate the HDX software:**

- 1 Collect the license and serial numbers.
- 2 Obtain option key codes for the software upgrades and options **for all the codecs**.

An *option key code* is the number that activates software or options on a specific system. Polycom generates a key code when you submit the license number and system serial number information.



For complete information about obtaining key codes, activating options, and installing the software, refer to the *Installing Polycom HDX Software and Options* document. To access this document, go to <http://www.polycom.com/support/video/index.html>, click on any HDX model listed under the “HDX Series” heading, and then open the document.

- 3 Log into the Polycom HDX web UI.
- 4 Enter the Admin ID as the user name (the default is admin) and enter the Admin Remote Access Password, if one is set.



Check your HDX software version against the version listed in the Release Notes for your ATX system model. If you already have the correct version loaded, you simply need to perform step 7 and steps 9 through 12.

- 5 Download either the HDX software for ATX SDK version 3.0.3 or the HDX software for ATX 300 version 3.0.3:
  - a Go to the Polycom website at <http://support.polycom.com/PolycomService/support/us/support/video/atx/atx.html>.
  - b In the Downloads section, click on the **ATX 300 Version 3.0.3** link to download the software for ATX 300 version 3.0.3 or click on the **ATX SDK Version 3.0.3** link to download the software for ATX SDK version 3.0.3.
  - c Save the .zip file to your system and then extract the files in the .zip file.
- 6 Install the software:
  - a For the Primary codec, go to **Admin Settings > General Settings > Software Update**.
  - b Click **Next**.
  - c Browse to where the HDX software .pup file is located and click **Begin Update**.  
For the specific name of the .pup file, refer to the *ATX Release Notes*.
  - d Accept all the default choices in the Software Update.

- 7 Enter the option key:
  - a When the codec has finished rebooting, go to **Admin Settings > General Settings > Options** in the web UI.
  - b Enter the option key code in the Key field.

The option key enables the options that are required for Immersive Telepresence.
  - c Click **Update**.
- 8 Repeat steps 6 and 7 for the remaining codecs.
- 9 Go to **Admin Settings > General Settings > Security > Security Settings**.
- 10 If the **Enable Sessions List** check box appears on the screen, clear the check mark from the check box.
- 11 Click **Update**.
- 12 Repeat steps 9 through 11 for the remaining codecs.

## Performing the Remaining Software Configuration

This section describes the tasks you need to perform to complete the software configuration.

### Configuring the System Controller, Telepresence Tool, and ITP Features

Refer to the *Polycom Immersive Telepresence (ITP) Administrator's Guide* (part number 3725-26945-005) to:

- Configure the HDX codecs and the System Controller (Chapter 1)

Because you have already installed the Polycom HDX software, you can skip the "Upgrading the Polycom HDX Software" section in Chapter 1 of the *Administrator's Guide* and begin instead with the "Configuring the System Controller" section.
- Load the Polycom Touch Control (for the ATX 300 system only) or the Crestron Touch Panel software (Chapter 2)

Note that the ATX SDK does not support the Polycom Touch Control.
- For the ATX 300 system only, configure the system parameters with the System\_Config.ini file (Chapter 3)

Note that the ATX SDK does not use the System\_Config.ini file.
- Install and use the Telepresence Tool (Chapter 4)
- Pair the Polycom Touch Control with the HDX codec and the System Controller (for sites with a Polycom Touch Control) (Chapter 5)

- Configure the H.323 gatekeeper, SIP server, and global directory (Chapter 6)
- Manage Favorites (for sites with a Polycom Touch Control) or manage the local directory (for sites with a Crestron Touch Panel) (Chapter 7)
- Manage TIP, user-initiated multipoint conferences, and DBA (Chapter 8)



If you are using ATX SDK version 3.0.3, some of the functionality described in the *Polycom Immersive Telepresence (ITP) Administrator's Guide* (part number 3725-26945-005) may not be available depending upon your system configuration.

## Configuring HDX Passwords

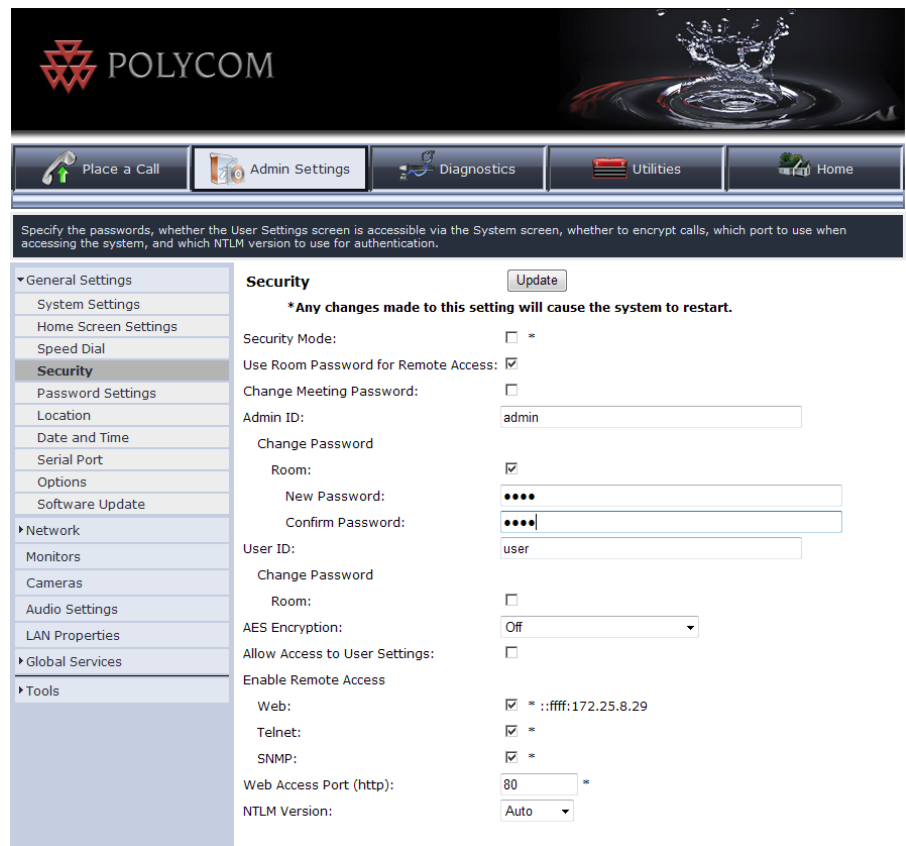
You can restrict access to the codecs by configuring HDX passwords.

### Creating HDX Passwords

#### To create HDX passwords:

- 1 Log into the Polycom HDX web UI.
- 2 Go to **Admin Settings > General Settings > Security**.
- 3 Select the **Use Room Password for Remote Access** check box.
- 4 Select the **Admin ID > Change Password > Room** check box.  
Password fields will appear.
- 5 Enter a new password in both password fields. Alternatively, you can leave the fields blank to erase the current password.

- 6 Click **Update** to save the change.



**Figure 4-3** HDX Security Screen

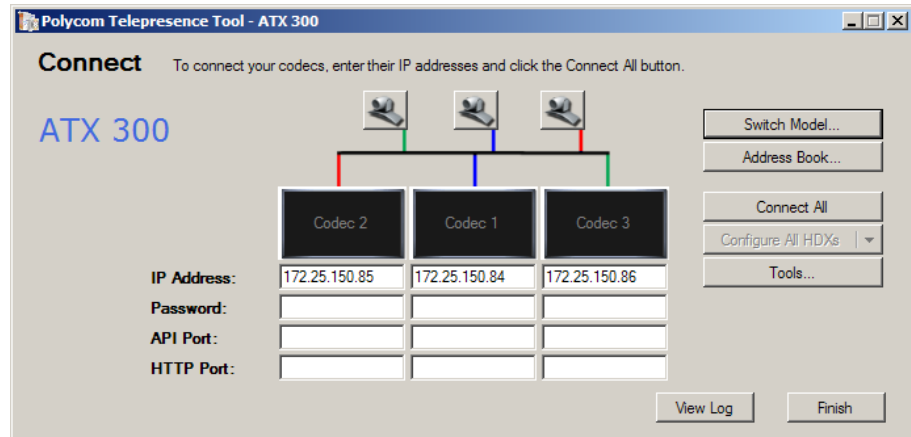
- 7 Repeat steps 1 through 6 to configure passwords on the remaining codecs.
- 8 Log out of the Polycom HDX web UI.

## Configuring the HDX Passwords in the Telepresence Tool

### To configure the HDX passwords in the Telepresence Tool

- 1 From the Start menu on your laptop, go to **Polycom > Telepresence Tool > Polycom Telepresence Tool**.
- 2 Connect to the Polycom HDX codecs:
  - a In the IP Address field, enter the IP address of the codecs.
  - b In the Password field, enter the password for the codecs in the Password field.

- c In the API Port field, the default is 24. However, if you have a NAT, it may map the API port to a different port. If so, enter the number of the mapped port in the API Port field.
  - d In the HTTP Port field, the default is 80. However, if you have a NAT, it may map the HTTP port to a different port. If so, enter the number of the mapped port in the HTTP Port field.
- 3 Click **Connect All**.



**Figure 4-4** ATX 300 Telepresence Tool Main Screen (Before Connection)

- 4 When the codecs are connected, click **Configure All HDXs** to run the configuration script on the codecs.
- The config script will save the Secondary codecs' passwords on the Primary codec.



If a codec fails to connect, you may have forgotten to remove the password for that codec (the default password is the serial number of the codec). If you need to remove the password, use the Polycom HDX web UI.



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# Configuring the Displays, Cameras, and Audio

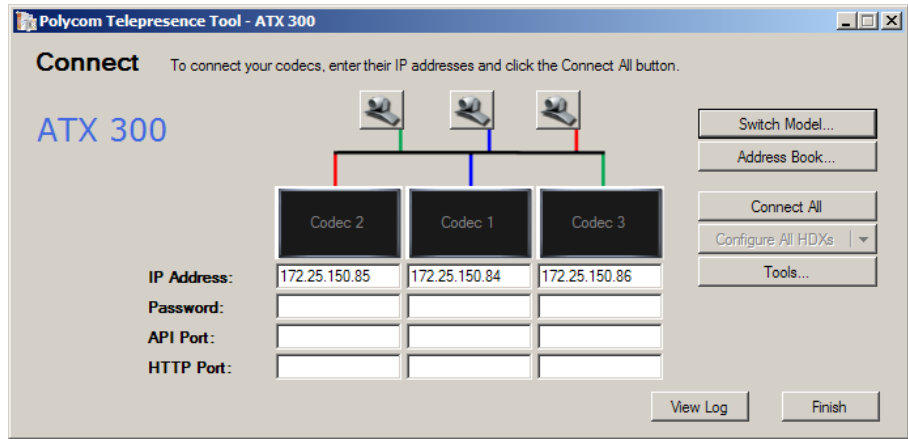
Once you have completed the software configuration as described in the *Polycom Immersive Telepresence (ITP) Administrator's Guide* (part number 3725-26945-005), you must finish the ATX system installation by:

- Configuring the display settings
- Preparing for the camera alignment
- Aligning the cameras for the presets
- Matching the cameras for color and brightness
- Verifying the microphone and speaker audio
- Measuring the room lighting
- Checking the display behavior when calling and hanging up

## Configuring the Display Settings

**To configure the display settings:**

- 1 Make sure that the Telepresence Tool is launched on the laptop.

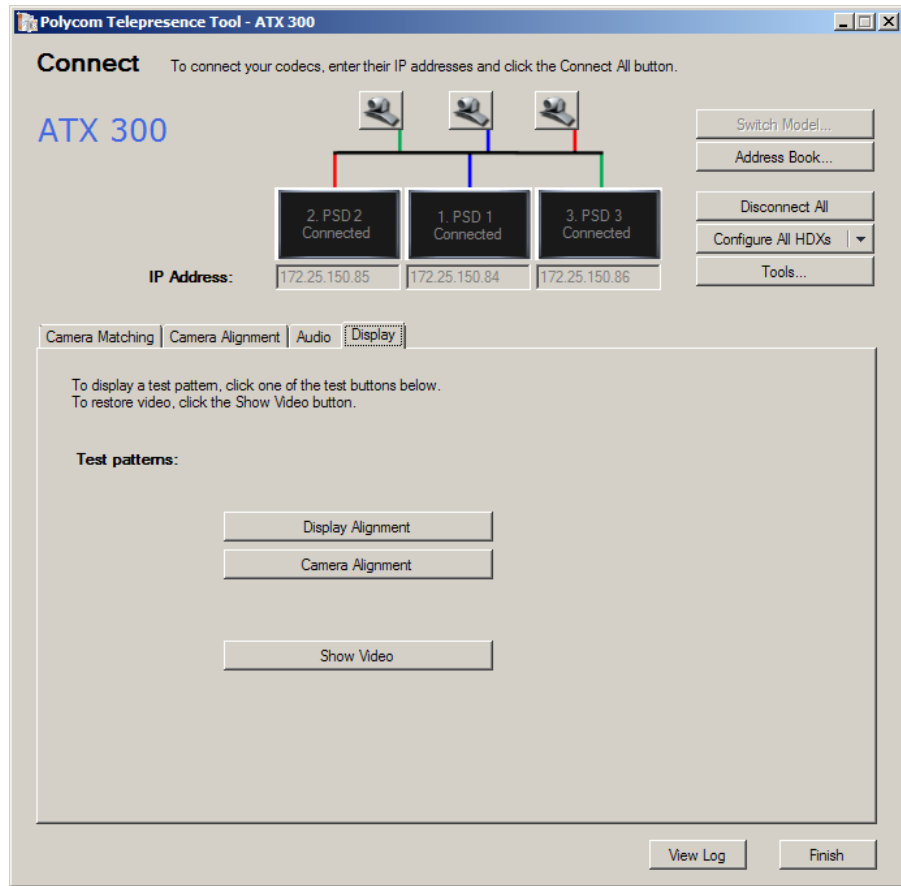


*Figure 5-1 ATX 300 Telepresence Tool Main Screen (Before Connection)*

- 2** If the appropriate ATX model name does not appear on the Main screen, click **Switch Model**.
- 3** Click **Connect All** to connect to the codecs.
- 4** Select the Display tab.

The following illustration shows the Display tab for an ATX 300 system.

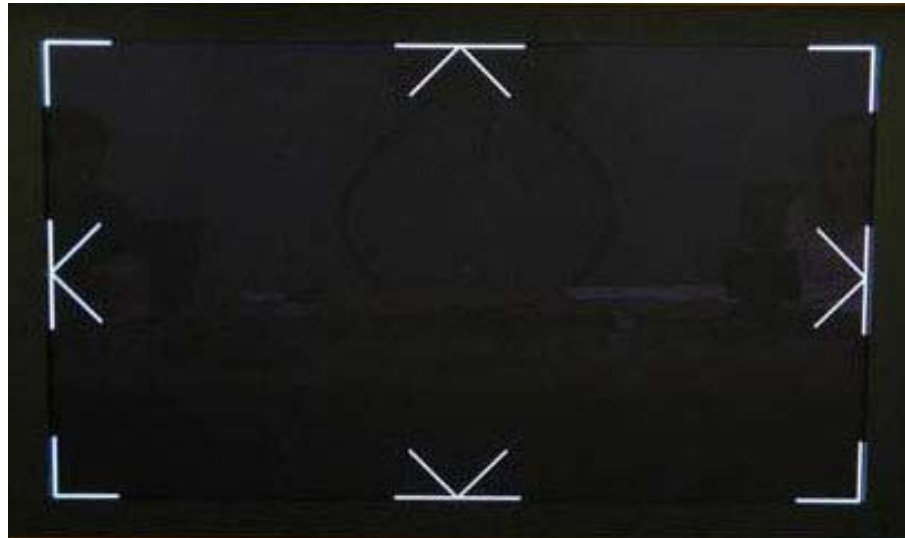




**Figure 5-2** ATX 300 Telepresence Tool Display Tab

**5 Click Display Alignment.**

The display alignment pattern appears on the screens.



*Figure 5-3 Display Alignment Pattern*

**6** The display alignment pattern should align with the edges of each screen. If it does not, check the display settings and ensure that the display is set to a mode (such as dot-by-dot mode) where no scaling is done to the incoming image.

**7** Access the settings for each display and configure the following:

- a** Set the Standby setting so that the display goes into Standby mode when no video is received.

Note that the name for this setting varies depending on your brand of display. Besides Standby, some common names for this setting include Sleep, Sleep Timer, Power Save, and Power Management.

- b** If possible, disable all the onscreen menus and alerts (such as “No Signal” and “Video Input 2”).

## Preparing for the Camera Alignment

To continue with the configuration of the ATX system, you must align the cameras to point to particular locations in the room. Once you have aligned the cameras, you can store the camera positions as *presets* in the Polycom HDX codecs. Depending on what model of ATX system you have and who you are calling, the system will activate the different presets to make the cameras point to the appropriate location for that call. This section describes more about camera alignment. The following section, [Aligning the Cameras for the Presets](#) on page 5-15, describes how to store the camera positions into the proper presets.

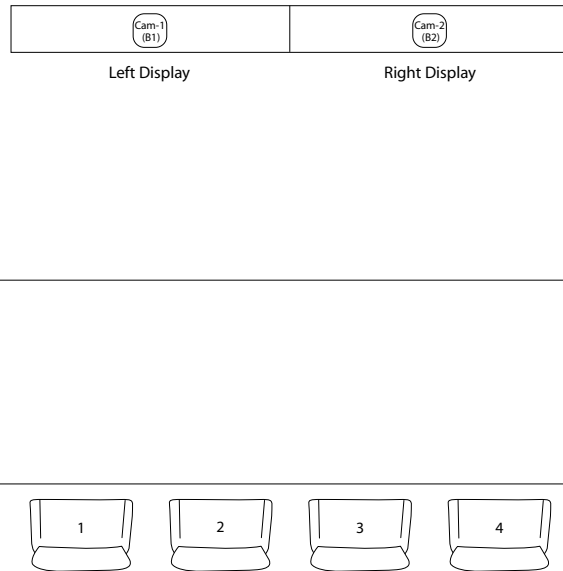
For ATX SDK, the integrator has the option to disable or override these automatic camera presets.

### Preparing for the Camera Alignment in an ATX 200 Room

The ATX 200 system has two codecs, two displays, and two cameras. As you are seated in the room facing the displays, the displays are designated left and right. Each camera is connected to a particular codec, and each codec is connected to a particular display as described in the following table.

Camera	Camera Location	Display on which Video Appears	Codec	Seating Position the Camera Normally Points to
Camera-1 (B1)	Left display	Right display	1 (Primary)	1 and 2
Camera-2 (B2)	Right display	Left display	2 (Secondary)	3 and 4

The ATX 200 table has four seats facing the displays. These seats are numbered 1 through 4, from left to right, as you are facing the displays.



**Figure 5-4** Location of Displays and Seats — ATX 200 System



As described in [Chapter 2](#), “Installing the Displays, Table, Cameras, and Chairs,” where a conference participant is seated affects where and how they appear on the displays at the far site. To ensure that the conference participants appear on the displays, but do not appear on more than one display, you should place the chairs at the proper locations at the table and mark those locations.

The following table shows how the cameras are positioned differently for different call scenarios. It also indicates how many codecs are in the call.

Number of Codecs in the Call	Scenario	Preset Number	Camera-1 (B1) View	Camera-2 (B2) View
2	Call ATX 200, TPX HD 204M, or RPX HD 200 Series system	99	Seats 1 and 2	Seats 3 and 4
1	Call stand-alone video conferencing system	97	Seats 1 through 4	Points towards Seats 3 and 4. Note, however, that the codec for this camera is not connected to the far site, therefore no video is sent and the near site display remains black.
2	Multipoint call (Continuous Presence)	96	Seats 1 through 4	Seats 1 through 4
2	Multipoint call (VARs)	99	Seats 1 and 2	Seats 3 and 4

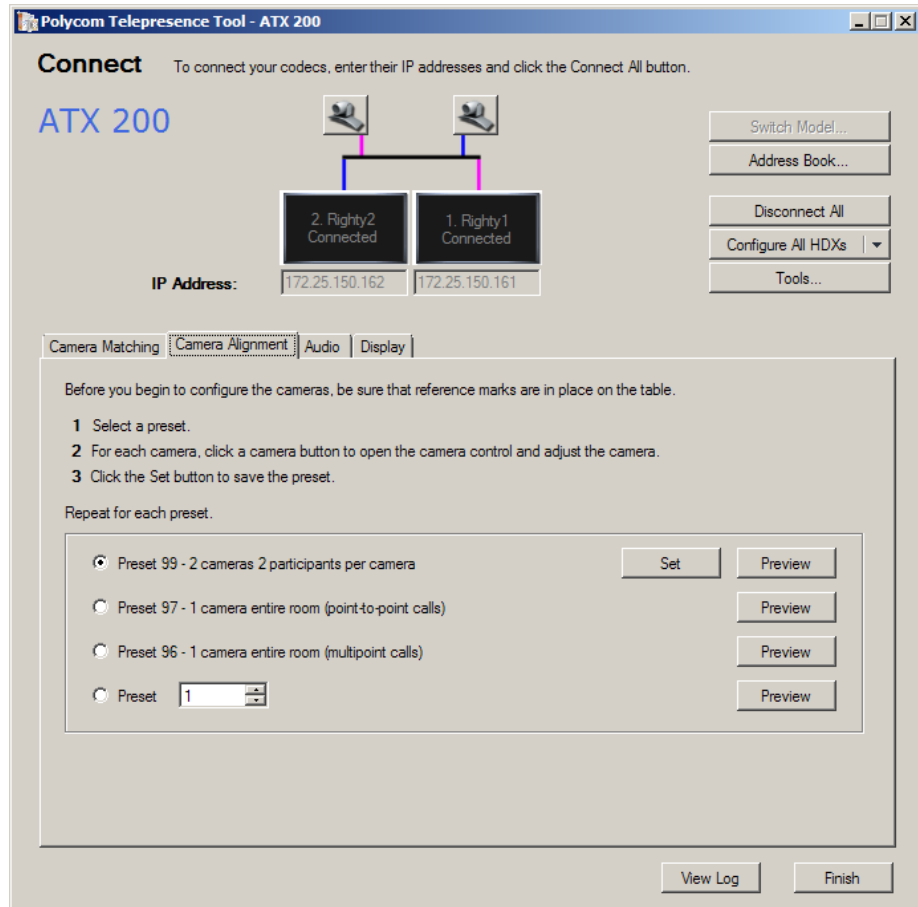
### To prepare for the camera alignment in an ATX 200 room:

- 1 Click the Display tab in the Telepresence Tool application.
- 2 If the displays are not showing the video from the cameras:
  - For ATX SDK version 3.0.3, press the button preconfigured to show the display.
  - For ATX 300 version 3.0.3, access the Admin screen on the Polycom Touch Control or on the Crestron Touch Panel, and then press **Show Display**.
- 3 Click **Camera Alignment**.

Colored lines appear on all display screens. You will use the yellow and blue lines, but not the other colors, for the ATX system.

**4** Click the Camera Alignment tab.

The following illustration shows the Camera Alignment tab for an ATX 200 system.



*Figure 5-5 Telepresence Tool Camera Alignment Tab — ATX 200 System*

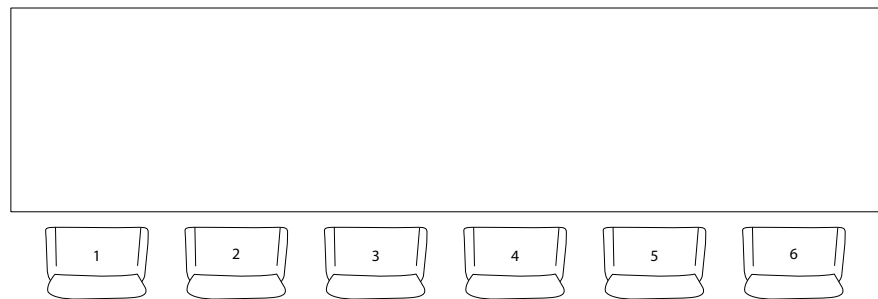
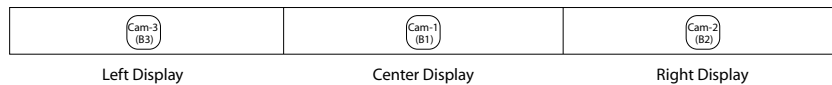
## Preparing for the Camera Alignment in an ATX 300 Room

The ATX 300 system has three codecs, three displays, and three cameras. As you are seated in the room facing the displays, the displays are designated center, left, and right. Each camera is connected to a particular codec, and each codec is connected to a particular display as described in the following table.

Camera	Camera Location	Display on which Video Appears	Codec	Seating Position the Camera Normally Points to
Camera-1 (B1)	Center display	Center display	1 (Primary)	3 and 4
Camera-2 (B2)	Right display	Left display	2 (Left)	5 and 6
Camera-3 (B3)	Left display	Right display	3 (Right)	1 and 2

Note that this guide uses Primary, Secondary, Left, and Right to describe the codecs. For ATX SDK version 3.0.3, the codecs are typically described as Master and Slaves; however, only the terms Primary, Secondary, Left, and Right are used in this guide.

The ATX 300 table has six seats facing the displays. These seats are numbered 1 through 6, from left to right, as you are facing the displays.



**Figure 5-6** Location of Displays and Seats — ATX 300 System



As described in [Chapter 2](#), “Installing the Displays, Table, Cameras, and Chairs,” where a conference participant is seated affects where and how they appear on the displays at the far site. To ensure that the conference participants appear on the displays, but do not appear on more than one display, you should place the chairs at the proper locations at the table and mark those locations.

The following table shows how the cameras are positioned differently for different call scenarios. It also indicates how many codecs are in the call.

Number of Codecs in the Call	Scenario	Preset Number	Camera-1 (B1) View	Camera-2 (B2) View	Camera-3 (B3) View
3	Call ATX 300, RPX 400 Series, OTX 300, or TPX 306M system	99	Seats 3 and 4	Seats 5 and 6	Seats 1 and 2
2	Call RPX HD 200 Series or TPX 204M system	98	Seats 2 through 5 and a portion of seats 1 and 6	Points towards Seats 5 and 6. Note, however, that the camera is disabled and will not send video.	Points towards Seats 1 and 2. Note, however, that the codec for this camera is not connected to the far site, therefore no video is sent and the near site display remains black.
1	Call stand-alone video conferencing system	97	Seats 2 through 5 and a portion of seats 1 and 6	Points towards Seats 5 and 6. Note, however, that the codec for this camera is not connected to the far site, therefore no video is sent and the near site display remains black.	Points towards Seats 1 and 2. Note, however, that the codec for this camera is not connected to the far site, therefore no video is sent and the near site display remains black.
3	Multipoint call (Continuous Presence)	96	Seats 2 through 5 and a portion of seats 1 and 6	Seats 2 through 5 and a portion of seats 1 and 6	Seats 2 through 5 and a portion of seats 1 and 6
(Note that only one of these three camera views will be seen at each of the far sites.)					
3	Multipoint call (VARS)	99	Seats 3 and 4	Seats 5 and 6	Seats 1 and 2



**To prepare for the camera alignment in an ATX 300 room:**

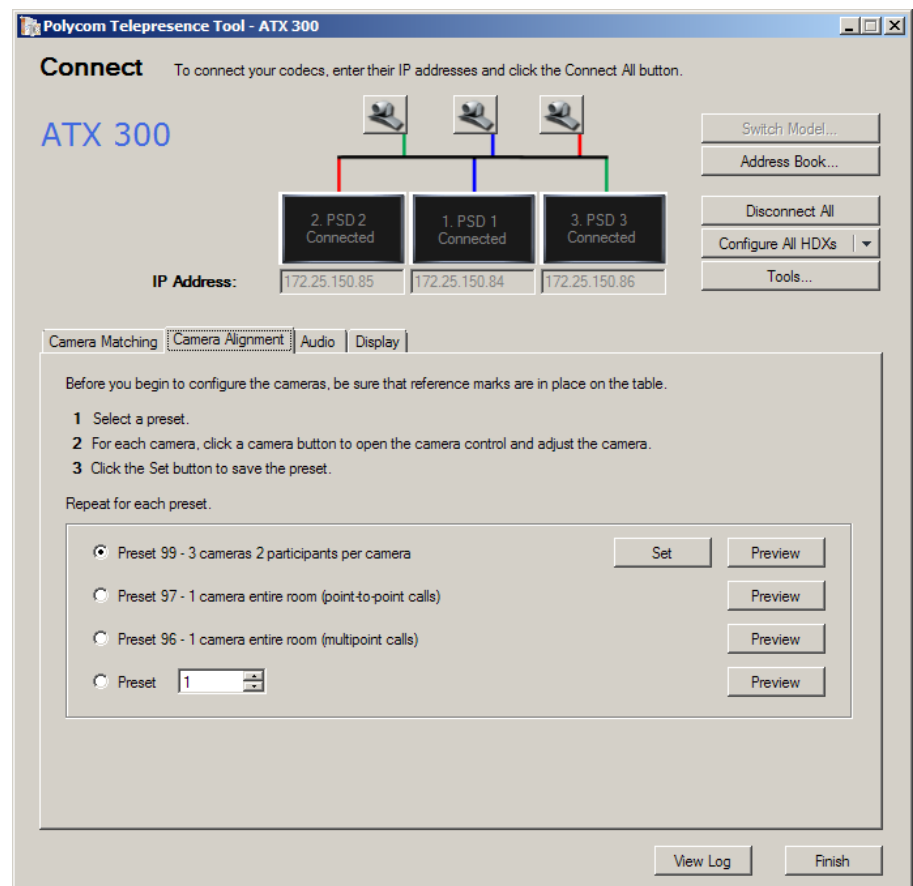
- 1 Click the Display tab in the Telepresence Tool application.
- 2 If the displays are not showing the video from the cameras:
  - For ATX SDK version 3.0.3, press the button preconfigured to show the display.
  - For ATX 300 version 3.0.3, access the Admin screen on the Polycom Touch Control or on the Crestron Touch Panel, and then press **Show Display**.

**3 Click Camera Alignment.**

Yellow, blue, and red lines appear on all display screens. You will use the yellow and blue lines, but not the red lines, for the ATX system.

**4 Click the Camera Alignment tab.**

The following illustration shows the Camera Alignment tab for an ATX 300 system.



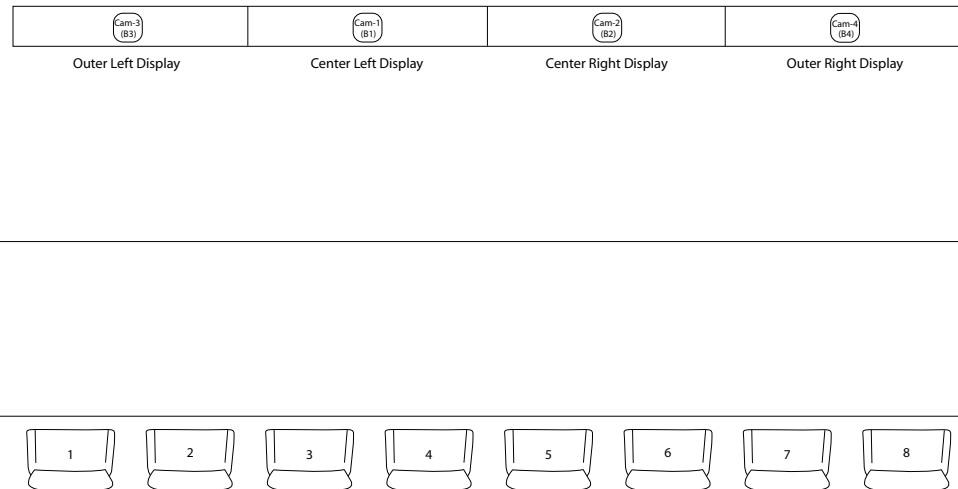
**Figure 5-7** Telepresence Tool Camera Alignment Tab — ATX 300 System

## Preparing for the Camera Alignment in an ATX 400 Room

The ATX 400 system has four codecs, four displays, and four cameras. As you are seated in the room facing the displays, the displays are designated outer left, center left, center right, and outer right. Each camera is connected to a particular codec, and each codec is connected to a particular display as described in the following table.

Camera	Camera Location	Display on which Video Appears	Codec	Seating Position the Camera Normally Points to
Camera-3 (B3)	Outer left display	Outer right display	3 (Right)	1 and 2
Camera-2 (B2)	Center right display	Center left display	2 (Secondary)	5 and 6
Camera-1 (B1)	Center left display	Center right display	1 (Primary)	3 and 4
Camera-4 (B4)	Outer right display	Outer left display	4 (Left)	7 and 8

The ATX 400 table has eight seats facing the displays. These seats are numbered 1 through 8, from left to right, as you are facing the displays.



**Figure 5-8** Location of Displays and Seats — ATX 400 System



As described in [Chapter 2](#), “Installing the Displays, Table, Cameras, and Chairs,” where a conference participant is seated affects where and how they appear on the displays at the far site. To ensure that the conference participants appear on the displays, but do not appear on more than one display, you should place the chairs at the proper locations at the table and mark those locations.

The following table shows how the cameras are positioned differently for different call scenarios. It also indicates how many codecs are in the call.

Number of Codecs in the Call	Scenario	Preset Number	Camera-1 (B1) View	Camera-2 (B2) View	Camera-3 (B3) View	Camera-4 (B4) View
4	Call ATX 400 or RPX HD 400 Series system	99	Seats 3 and 4	Seats 5 and 6	Seats 1 and 2	Seats 7 and 8
3	Call ATX 300, OTX 300, or TPX 306M system	95	Seats 1 through 4	Seats 5 through 8	Points towards Seats 1 and 2. Note, however, that the camera is disabled and will not send video.	Points towards Seats 7 and 8. Note, however, that the codec for this camera is not connected to the far site, therefore no video is sent and the near site display remains black.
2	Call RPX 200 Series, TPX 204M, or ATX 200 system	94	Seats 1 through 4	Seats 5 through 8	Points towards Seats 1 and 2. Note, however, that the codec for this camera is not connected to the far site, therefore no video is sent and the near site display remains black.	Points towards Seats 7 and 8. Note, however, that the codec for this camera is not connected to the far site, therefore no video is sent and the near site display remains black.

Number of Codecs in the Call	Scenario	Preset Number	Camera-1 (B1) View	Camera-2 (B2) View	Camera-3 (B3) View	Camera-4 (B4) View
1	Call stand-alone video conferencing system	97	Points towards Seats 3 through 6 and a portion of seats 2 and 7.	Points towards Seats 5 and 6. Note, however, that the codec for this camera is not connected to the far site, therefore no video is sent and the near site display remains black.	Points towards Seats 1 and 2. Note, however, that the codec for this camera is not connected to the far site, therefore no video is sent and the near site display remains black.	Points towards Seats 7 and 8. Note, however, that the codec for this camera is not connected to the far site, therefore no video is sent and the near site display remains black.
4	Multipoint call (Continuous Presence)	96	Seats 3 and 4	Seats 5 and 6	Seats 1 and 2	Seats 7 and 8
4	Multipoint call (VARs)	99	Seats 3 and 4	Seats 5 and 6	Seats 1 and 2	Seats 7 and 8

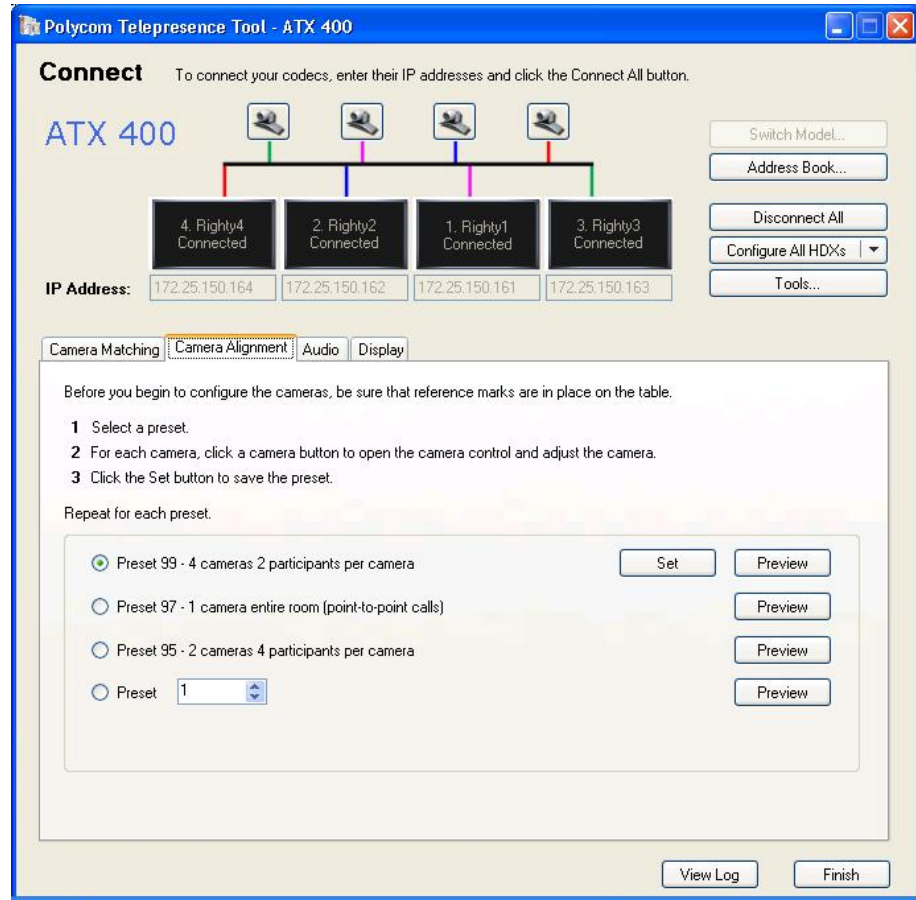
### To prepare for the camera alignment in an ATX 400 room:

- 1 Click the Display tab in the Telepresence Tool application.
- 2 If the displays are not showing the video from the cameras:
  - For ATX SDK version 3.0.3, press the button preconfigured to show the display.
  - For ATX 300 version 3.0.3, access the Admin screen on the Polycom Touch Control or on the Crestron Touch Panel, and then press **Show Display**.
- 3 Click **Camera Alignment**.

Yellow, blue, and red lines appear on all display screens. You will use the yellow and blue lines, but not the red lines, for the ATX system.

#### 4 Click the Camera Alignment tab.

The following illustration shows the Camera Alignment tab for an ATX 400 system.



**Figure 5-9** Telepresence Tool Camera Alignment Tab — ATX 400 System

## Aligning the Cameras for the Presets

This section describes how to align the cameras for the following presets:

- Preset 99 for the ATX 200, ATX 300, and ATX 400 systems
- Preset 97 for the ATX 200, ATX 300, and ATX 400 system
- Preset 96 for the ATX 200 and ATX 300 systems
- Preset 95 for the ATX 400 systems

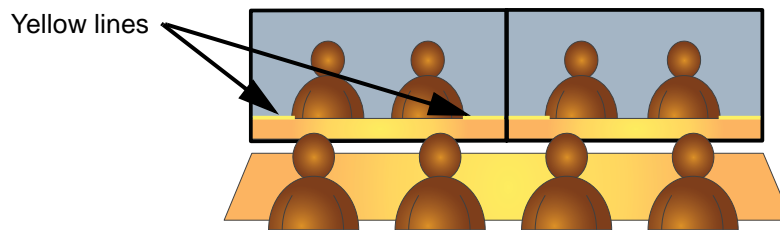
## Setting Preset 99

This section describes how to align the cameras for Preset 99 in an ATX 200, ATX 300, and ATX 400 room.

### Setting Preset 99 for an ATX 200 Systems

#### To set Preset 99 for an ATX 200 system:

- 1 On the Telepresence Tool Camera Alignment tab, select **Preset 99**.
- 2 Use the camera controls to adjust the pan, tilt, and zoom so that each camera views the two seating positions specified in the table on pages 5-7, 5-10, and 5-13.
  - a Adjust the pan and zoom of each camera so that the two camera alignment marks on the table are as close as possible to the edges of the displayed video. Refer to the [Creating the Camera Alignment Marks](#) section on page 2-11.
  - b Adjust the tilt so that the top edge of the table aligns with the yellow lines on the left and right sides of each display as shown in [Figure 5-11](#).



**Figure 5-10** Aligning the Cameras for Preset 99 — ATX 200 System

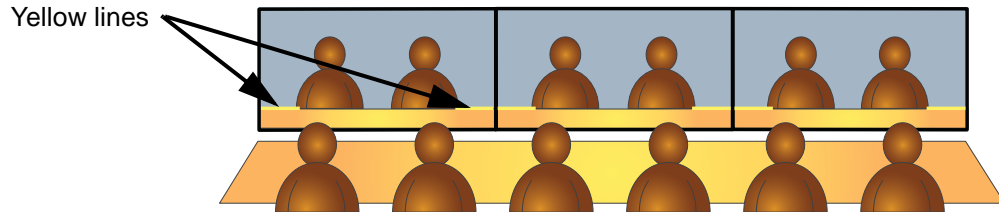
- c If the table edge in any display does not align with the yellow lines, physically adjust the corresponding camera using shims.
- 3 After all the cameras are aligned, make sure Preset 99 is selected and then press **Set** to save Preset 99 for all the codecs.

### Setting Preset 99 for an ATX 300 System

#### To set Preset 99 for an ATX 300 system:

- 1 On the Telepresence Tool Camera Alignment tab, select **Preset 99**.
- 2 Use the camera controls to adjust the pan, tilt, and zoom so that each camera views the two seating positions specified in the table on pages 5-7, 5-10, and 5-13.

- a Adjust the pan and zoom of each camera so that the two camera alignment marks on the table are as close as possible to the edges of the displayed video. Refer to the [Creating the Camera Alignment Marks](#) section on page 2-11.
- b Adjust the tilt so that the top edge of the table aligns with the yellow lines on the left and right sides of each display as shown in [Figure 5-11](#).



**Figure 5-11** Aligning the Cameras for Preset 99 — ATX 300 System

- c If the table edge in any display does not align with the yellow lines, physically adjust the corresponding camera using shims.
- 3 After all the cameras are aligned, make sure Preset 99 is selected and then press **Set** to save Preset 99 for all the codecs.

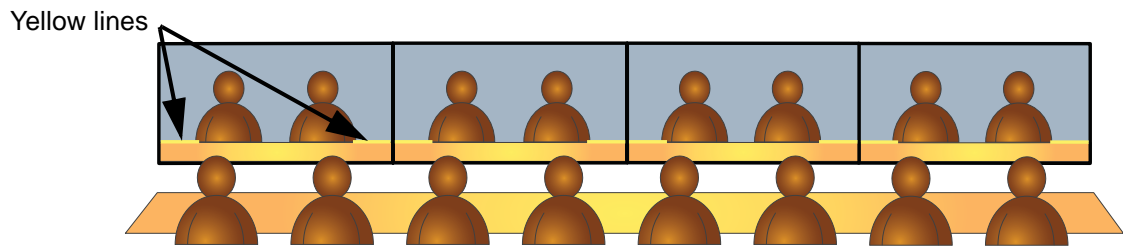


The Telepresence Tool does not offer a radio button for creating Preset 98. Because Preset 98 has the same alignment as Preset 97, the Telepresence Tool will automatically set Preset 98 once Preset 97 has been created.

## Setting Preset 99 for an ATX 400 System

### To set Preset 99 for an ATX 400 system:

- 1 On the Telepresence Tool Camera Alignment tab, select **Preset 99**.
- 2 Use the camera controls to adjust the pan, tilt, and zoom so that each camera views the two seating positions specified in the table on pages 5-7, 5-10, and 5-13.
  - a Adjust the pan and zoom of each camera so that the two camera alignment marks on the table are as close as possible to the edges of the displayed video. Refer to the [Creating the Camera Alignment Marks](#) section on page 2-11.
  - b Adjust the tilt so that the top edge of the table aligns with the yellow lines on the left and right sides of each display as shown in [Figure 5-11](#).



**Figure 5-12** Aligning the Cameras for Preset 99 — ATX 400 System

- c If the table edge in any display does not align with the yellow lines, physically adjust the corresponding camera using shims.
- 3 After all the cameras are aligned, make sure Preset 99 is selected and then press **Set** to save Preset 99 for all the codecs.

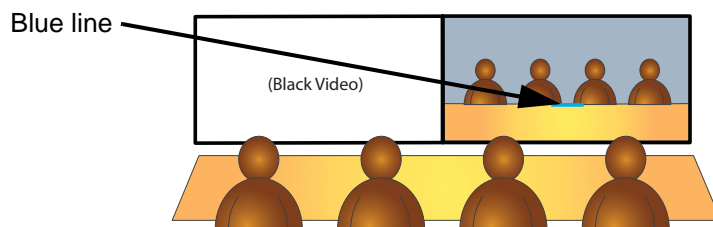
## Setting Preset 97

This section describes how to align the cameras for Preset 97 in an ATX 200, ATX 300, and ATX 400 room.

### Setting Preset 97 for an ATX 200 System

**To set Preset 97 for an ATX 200 system:**

- 1 On the Telepresence Tool Camera Alignment tab, select **Preset 97**.
- 2 Use the camera controls to adjust the pan, tilt, and zoom of the camera connected to the Primary codec:
  - a Pan, tilt, and zoom the camera to view the four seats.
  - b Adjust the pan and zoom so that the two camera alignment marks on the outside of the table are as close as possible to the edges of the displayed video.
  - c Adjust the tilt so that the edge of the table aligns with the blue line as shown in [Figure 5-15](#).



**Figure 5-13** Aligning the Cameras for Preset 97 — ATX 200 System



- 3 Do not pan, tilt, or zoom the other cameras at this point.
- 4 Open the camera controls for the camera attached to codec 2 and select 2 from the Select Camera drop-down list. This will result in the codec sending black video.



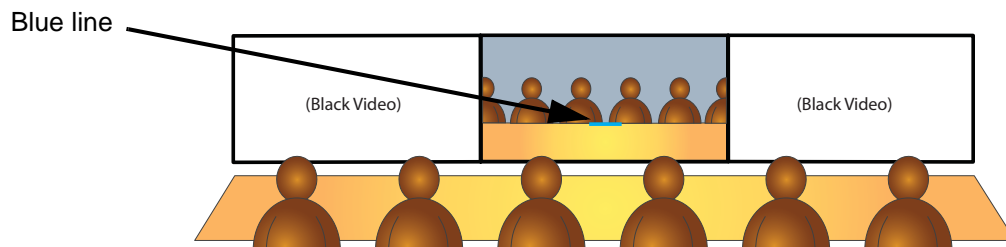
**Figure 5-14** Camera Control Screen

- 5 Make sure Preset 97 is selected and then press **Set** to save Preset 97 for all the codecs.

## Setting Preset 97 for an ATX 300 System

### To set Preset 97 for an ATX 300 system:

- 1 On the Telepresence Tool Camera Alignment tab, select **Preset 97**.
- 2 Use the camera controls to adjust the pan, tilt, and zoom of the camera connected to the Primary codec:
  - a Pan, tilt, and zoom the camera to view the middle four seats and, if desired, a portion of the adjacent seat on both sides.
  - b Adjust the pan and zoom so that the two camera alignment marks on the outside of the table are as close as possible to the edges of the displayed video.
  - c Adjust the tilt so that the edge of the table aligns with the blue line as shown in [Figure 5-15](#).



**Figure 5-15** Aligning the Cameras for Preset 97 — ATX 300 System

- 3 Do not pan, tilt, or zoom the other cameras at this point.
- 4 Open the camera controls for the camera attached to codec 2 and select 2 from the Select Camera drop-down list. This will result in the codec sending black video.



**Figure 5-16** Camera Control Screen

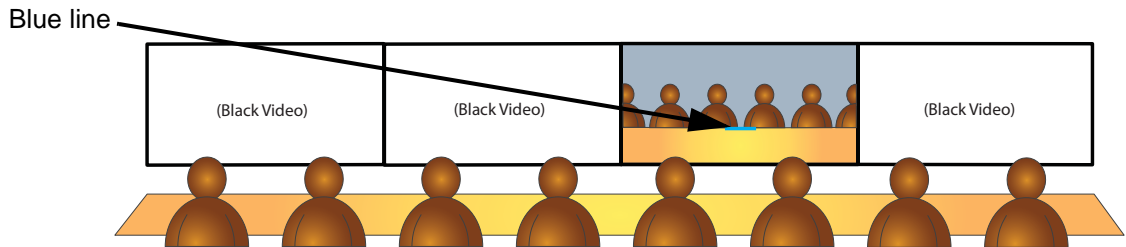
- 5 Open the camera controls for the camera attached to codec 3 and select 2 from the Select Camera drop-down list. This will result in the codec sending black video.
- 6 Make sure Preset 97 is selected and then press **Set** to save Preset 97 for all the codecs.

## Setting Preset 97 for an ATX 400 System

### To set Preset 97 for an ATX 400 system:

- 1 On the Telepresence Tool Camera Alignment tab, select **Preset 97**.
- 2 Use the camera controls to adjust the pan, tilt, and zoom of the camera connected to the Primary codec:
  - a Pan, tilt, and zoom the camera to view the middle four seats and, if desired, a portion of the adjacent seat on both sides.
  - b Adjust the pan and zoom so that the two camera alignment marks on the outside of the table are as close as possible to the edges of the displayed video.

- c Adjust the tilt so that the edge of the table aligns with the blue line as shown in [Figure 5-15](#).



**Figure 5-17** Aligning the Cameras for Preset 97 — ATX 400 System

- 3 Do not pan, tilt, or zoom the other cameras at this point.
- 4 Open the camera controls for the camera attached to codec 2 and select 2 from the Select Camera drop-down list. This will result in the codec sending black video.



**Figure 5-18** Camera Control Screen

- 5 Open the camera controls for the camera attached to codec 3 and select 2 from the Select Camera drop-down list. This will result in the codec sending black video.
- 6 Open the camera controls for the camera attached to codec 4 and select 2 from the Select Camera drop-down list. This will result in the codec sending black video.
- 7 Make sure Preset 97 is selected and then press **Set** to save Preset 97 for all the codecs.

## Setting Preset 96

This section describes how to align the cameras for Preset 96 in an ATX 200 and ATX 300 room.

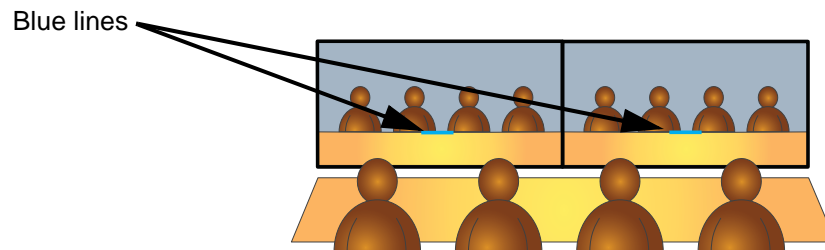


Note that no alignment is necessary for Preset 96 for the ATX 400 system. For the ATX 400, Preset 96 has the same alignment as Preset 99 and will be automatically set by the Telepresence Tool.

### Setting Preset 96 for an ATX 200 System

**To set Preset 96 for an ATX 200 system:**

- 1 On the Telepresence Tool Camera Alignment tab, select **Preset 96**.
- 2 Use the camera controls to adjust the pan, tilt, and zoom of each camera:
  - a Pan, tilt, and zoom the camera to view the four seats.
  - b Adjust the tilt so that the top edge of the table aligns with the blue line at the center of all screens as shown in [Figure 5-20](#).



**Figure 5-19** Aligning the Cameras for Preset 96 — ATX 200 System

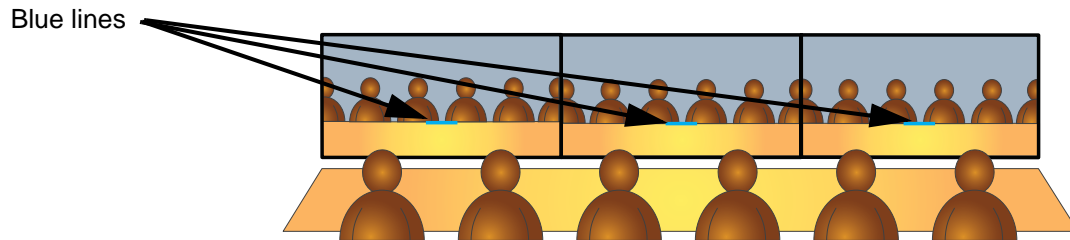
- 3 After all cameras are aligned, make sure Preset 96 is selected and then press **Set** to save Preset 96 for all the codecs.

### Setting Preset 96 for an ATX 300 System

**To set Preset 96 for an ATX 300 system:**

- 1 On the Telepresence Tool Camera Alignment tab, select **Preset 96**.
- 2 Use the camera controls to adjust the pan, tilt, and zoom of each camera:
  - a Pan, tilt, and zoom the camera to view the middle four seats and, if desired, a portion of the adjacent seat on both sides.

- b Adjust the tilt so that the top edge of the table aligns with the blue line at the center of all screens as shown in [Figure 5-20](#).



**Figure 5-20** Aligning the Cameras for Preset 96 — ATX 300 System

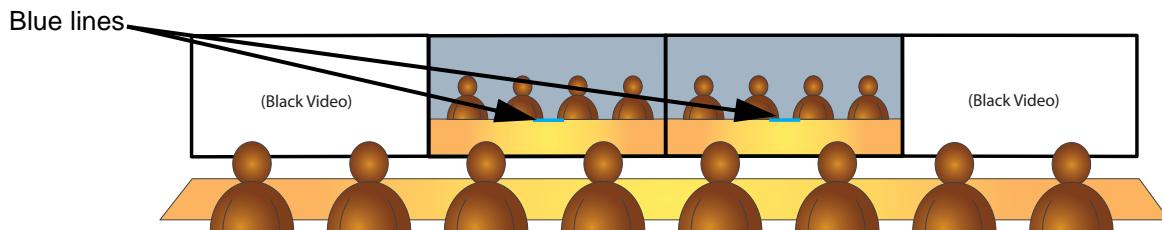
- 3 After all the cameras are aligned, make sure Preset 96 is selected and then press **Set** to save Preset 96 for all the codecs.

## Setting Preset 95

This section describes how to align the cameras for Preset 95 in an ATX 400 room.

### To set Preset 95 for an ATX 400 system:

- 1 On the Telepresence Tool Camera Alignment tab, select **Preset 95**.
- 2 Use the camera controls to adjust the pan, tilt, and zoom of Camera-1 (B1) and Camera-2 (B2):
  - a Pan, tilt, and zoom Camera-1 (B1) to view seats 1, 2, 3, and 4.
  - b Pan, tilt, and zoom Camera-2 (B2) to view seats 5, 6, 7, and 8.
  - c Adjust the tilt so that the top edge of the table aligns with the blue line at the center of both screens as shown in [Figure 5-21](#).



**Figure 5-21** Aligning the Cameras for Preset 95 — ATX 400 System

- 3 Open the camera controls for the camera attached to codec 3 and select 2 from the Select Camera drop-down list. This will result in the codec sending black video.



*Figure 5-22 Camera Control Screen*

- 4 After both cameras are aligned, make sure Preset 95 is selected and then press **Set** to save Preset 95 for all the codecs.



Note that no alignment is necessary for Preset 94. Preset 94 has the same alignment as Preset 95 and will be automatically set by the Telepresence Tool.

## Verifying the Camera Alignment

### To verify the camera alignment:

- 1 Press **Preview** on the Telepresence Tool Camera Alignment screen to recall the presets for each of the presets.
- 2 For each preset, verify the pan, zoom, and tilt:
  - Pan and zoom: Verify that the camera alignment marks on the table are barely visible at the edges each display.
  - Tilt: Verify that the top edge of the table is positioned at the correct height as specified previously.
- 3 Check if the Ceiling Microphones Arrays are visible at the top of the displays. If so, you should not change the camera alignment; rather, you should raise the microphones (if possible) so that they do not appear.

## Matching the Cameras for Color and Brightness

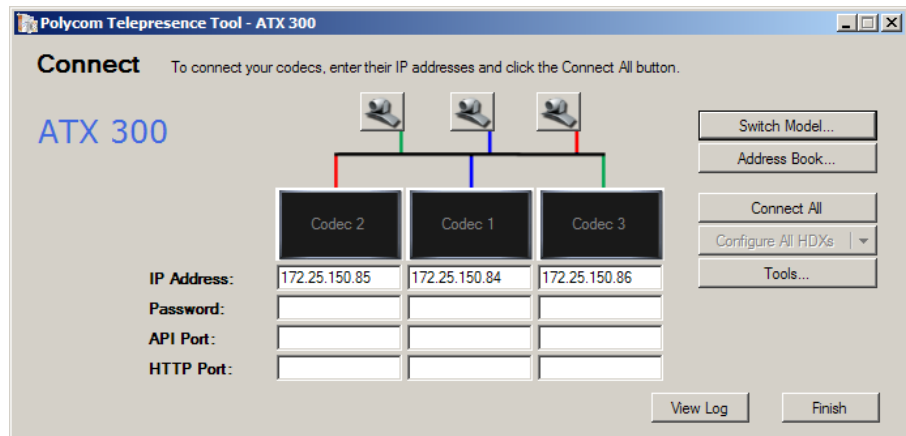
This section describes how to configure the Polycom EagleEye III cameras for use in ATX rooms. The procedure in this section explains how to configure the cameras so that they match in terms of brightness and color.

To perform this procedure, you will need a gray card, which is part of the integrator's toolkit.

### To match the cameras for color and brightness:

- 1 Make sure that the Telepresence Tool is launched on the laptop.
- 2 Click **Connect All** to connect to the codecs.

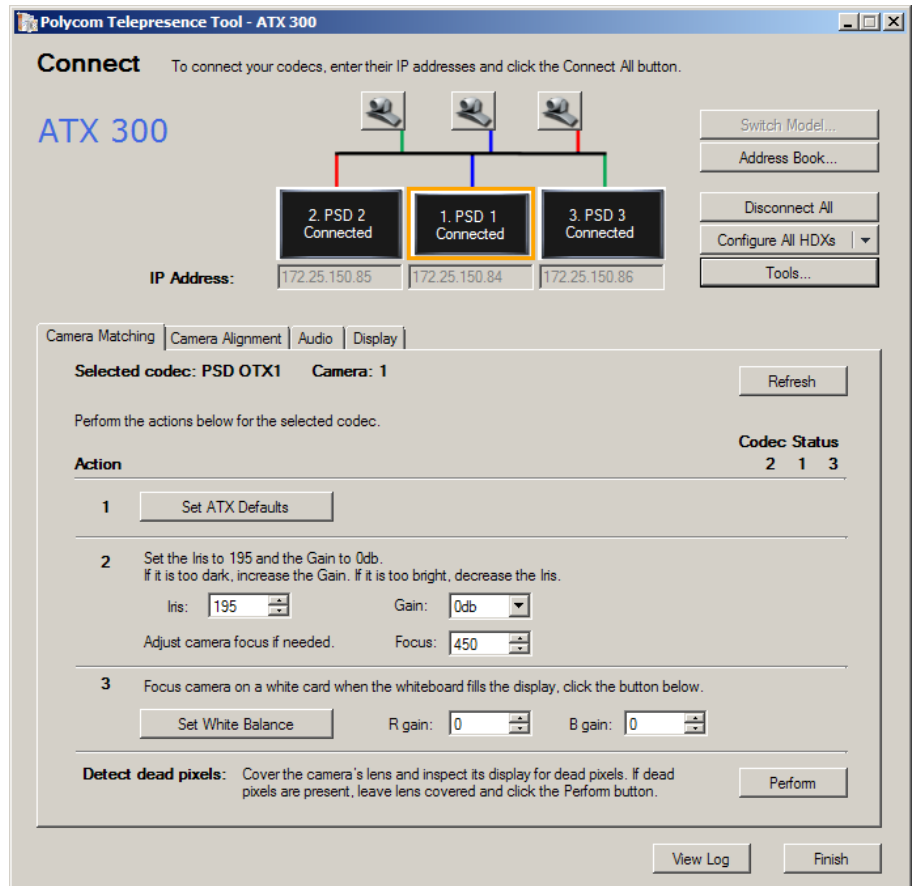
The following illustration shows the Main screen for an ATX 300 system.



**Figure 5-23** Telepresence Tool Main Screen

**3** Select the Camera Matching tab.

The following illustration shows the Camera Matching tab for an ATX 300 system.



**Figure 5-24** Telepresence Tool Camera Matching Tab

**4** Click **Codec 1**.

An orange border appears around the selected codec.

**5** Click **Set ATX Defaults**, and then wait for the camera settings to be updated.

**6** If the camera image looks too bright or too dim, adjust the gain in the **Gain** field, but do not set the gain below 0db.

**7** If you set the gain to 0db, but the camera image still looks too bright, adjust the iris down in the **Iris** field.

**8** If needed, adjust the focus:

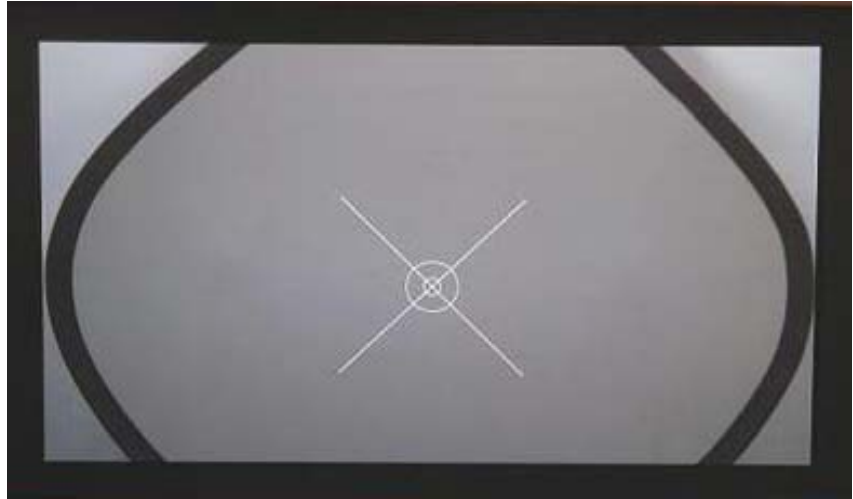
**a** Set the **Focus** field to a value that results in a sharply focused view.

**b** Move a chair between seats 3 and 4 and then place the gray card on the arms of that chair.



It is best to tilt the gray card slightly backwards so that it captures some of the room lighting.

- c Pan, tilt, and zoom all three cameras until the gray card appears as shown in [Figure 5-25](#).



**Figure 5-25** Gray Card Onscreen

- d If necessary, change the **Focus** value until the pattern on the gray card is sharply focused.
- 9 Click **Codec 2** and repeat steps 5 through 8.
  - 10 Click **Codec 3** and repeat steps 5 through 8.
  - 11 Click **Set White Balance**.

The gray pattern on all displays should match. However, if you think that you need to adjust the colors or check them more closely, select each codec (depending on which one you want to change) and adjust the values for the **R gain** and **B gain** as needed.

The R and B gains give you very fine control over white balance. Changing one of the values by only one or two steps is barely noticeable on the display.

Symptom	Adjustment
Too much red	Decrease red
Too much cyan	Increase red
Too much magenta	Decrease red and blue
Too much green	Increase red and blue
Too much blue	Decrease blue
Too much yellow	Increase blue

## Configuring the Audio

This section describes how to:

- Configure the audio mixer
- Verify the microphone and speaker audio
- Calibrate the Ceiling Microphone Arrays (required only for TII support)

### Configuring the Audio Mixer

**To configure the audio mixer:**

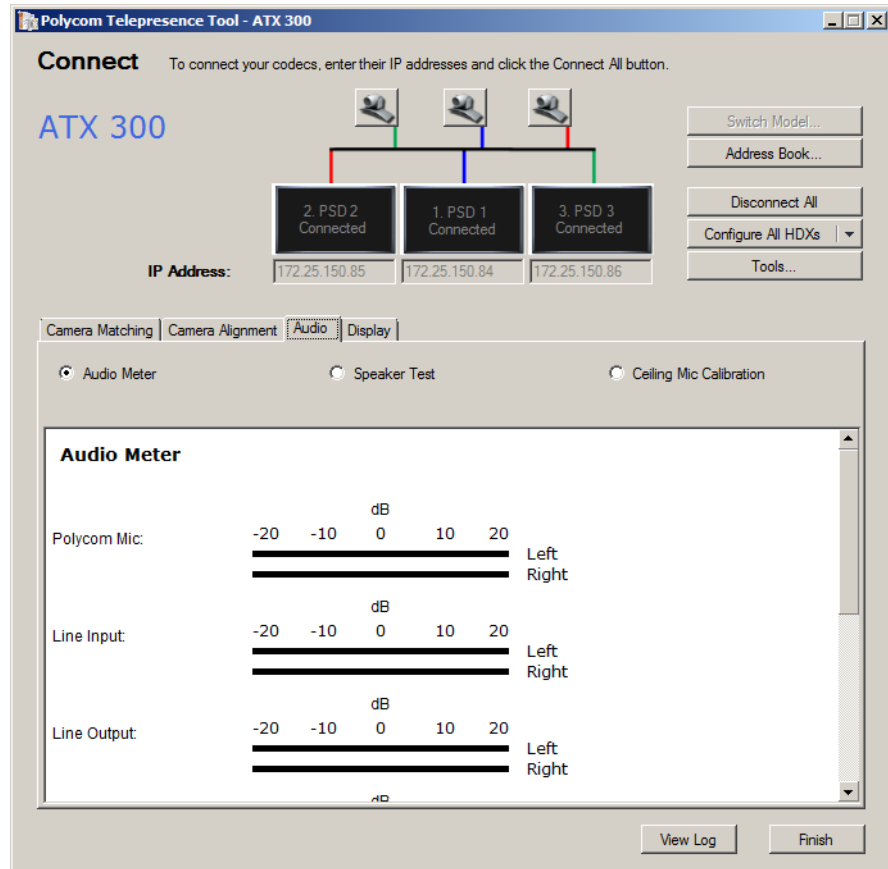
- 1 Set Channel 1 Left and Right of the audio mixer to 6db.
- 2 Set Channel 2 Left and Right of the audio mixer to 8.5db.

Refer to the audio mixer documentation for information on how to configure the Channel settings.

### Verifying the Microphone and Speaker Audio

**To verify the microphone and speaker audio:**

- 1 Make sure that the Telepresence Tool is launched on the laptop.
- 2 Enter the IP addresses of the codecs and enter the passwords (if needed), and then click **Connect All** to connect to the codecs.
- 3 Click the Audio tab.
- 4 To verify the microphone audio:
  - a Click **Audio Meter**.

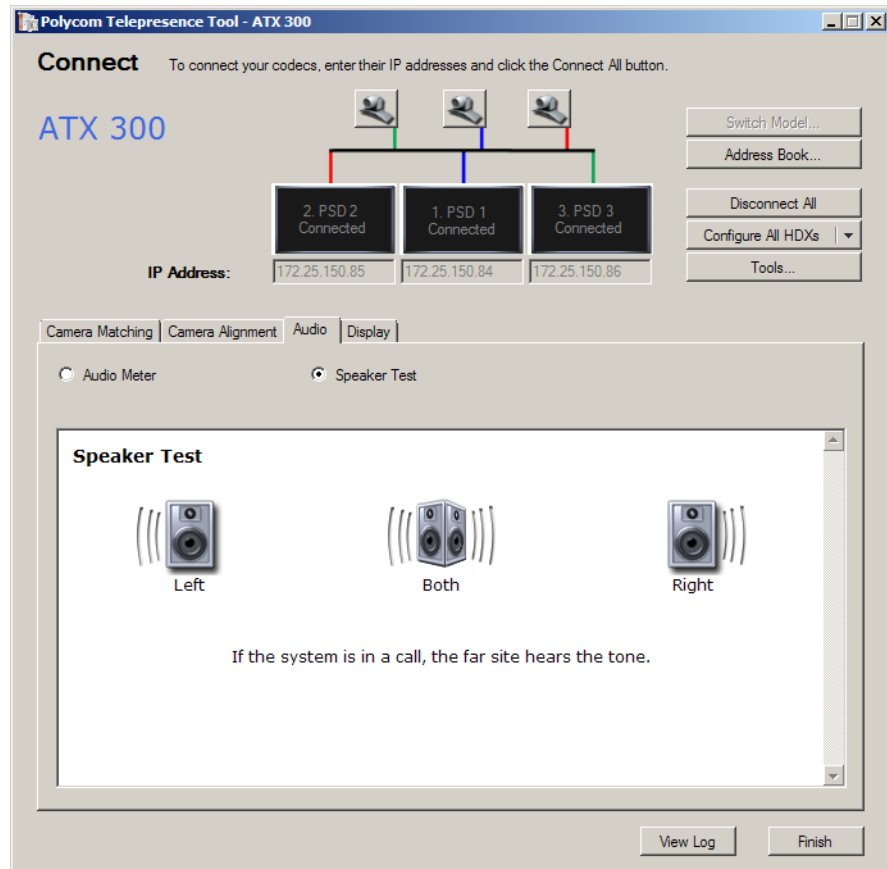


**Figure 5-26** Telepresence Tool Audio Meter

- b** Tap the left Ceiling Microphone Array ball and check that the audio meter for the Left Polycom Mic channel responds accordingly.
- c** Tap the right Ceiling Microphone Array ball and check that the audio meter for the Right Polycom Mic channel responds accordingly.
- d** Using a coffee straw or drinking straw, blow lightly into the left side of the center Ceiling Microphone Array ball and check that the audio meter for the Left Polycom Mic channel responds accordingly.
- e** Using a coffee straw or drinking straw, blow lightly into the right side of the center Ceiling Microphone Array ball and check that the audio meter for the Right Polycom Mic channel responds accordingly.

If the audio meters do not respond as expected, the microphones may be cabled incorrectly. Refer to the *Polycom ATX 200/300/400 System Wiring Specification* (part number 3823-30099-002) for more information.

- 5 To verify the speaker audio:
  - a Click **Speaker Test**.



**Figure 5-27** Telepresence Tool Speaker Test

- b Click **Left** and check that you hear audio from the left speaker only.
    - c Click **Right** and check that you hear audio from the right speaker only.
    - d Click **Both** and check that you hear audio from both speakers.
    - e If the audio you hear from the left and right speakers is transposed, check the speaker wires at the subwoofers and at the audio mixer, and make sure that they are wired according to the *Polycom ATX 200/300/400 System Wiring Specification* (part number 3823-30099-002).
- 6 Click **Finish** to exit the Telepresence Tool.

## Calibrating the Ceiling Microphone Arrays

You must calibrate the Ceiling Microphone Arrays if TIP support is required. In order for camera segment switching to work properly, before you begin the Ceiling Microphone calibration procedure, ensure that:

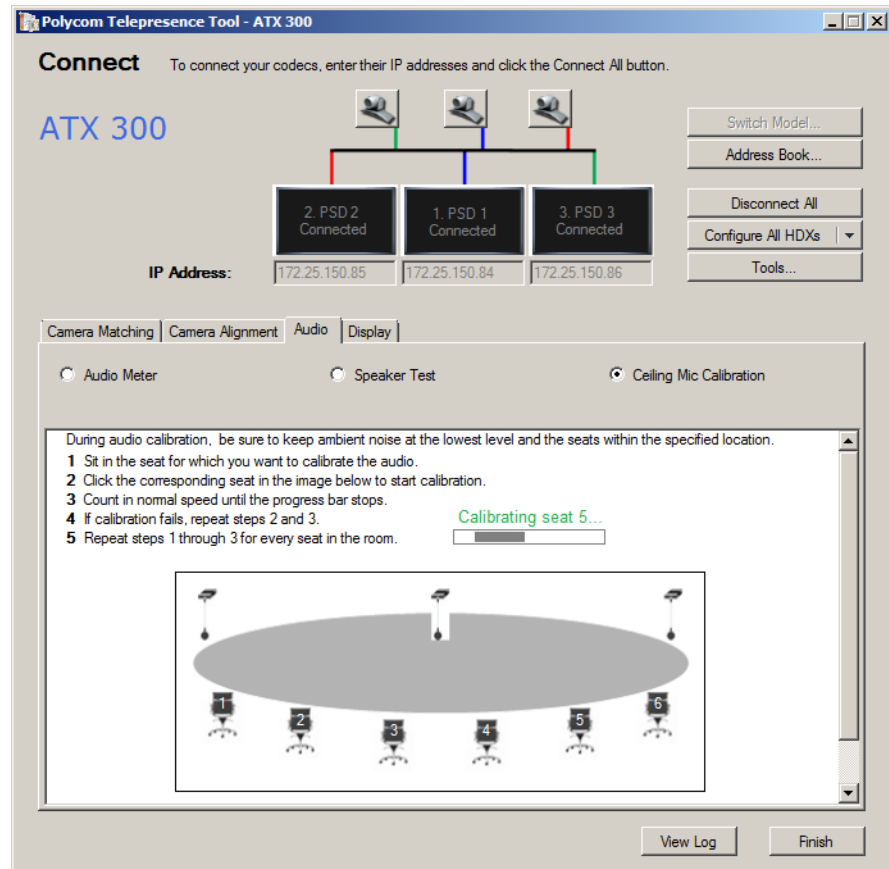
- The Ceiling Microphone Arrays have been installed according to the instructions in the [Installing the Ceiling Microphone Arrays](#) section on page 3-4.
- Ambient noise is at the lowest level possible.
- The chairs are at their proper locations around the ATX table.
- You can move your laptop to each of the seat locations around at the table.

Note that the screens in the following section show the ATX 300 system. The calibration instructions for the ATX 200 and ATX 400 are the same, except that the tables shown in the ATX 200 and ATX 400 screens are different.

### To calibrate the Ceiling Microphone Arrays:

- 1 Log into the Polycom HDX web UI.
- 2 Go to **Diagnostics > System Log > System Log Settings**.
- 3 In the Log Level field, select **DEBUG** and click **Update**.
- 4 Make sure that the Telepresence Tool is launched on the laptop.
- 5 Enter the IP addresses of the codecs and enter the passwords (if needed), and then click **Connect All** to connect to the codecs.
- 6 Click the Audio tab.

## 7 Click Ceiling Mic Calibration.

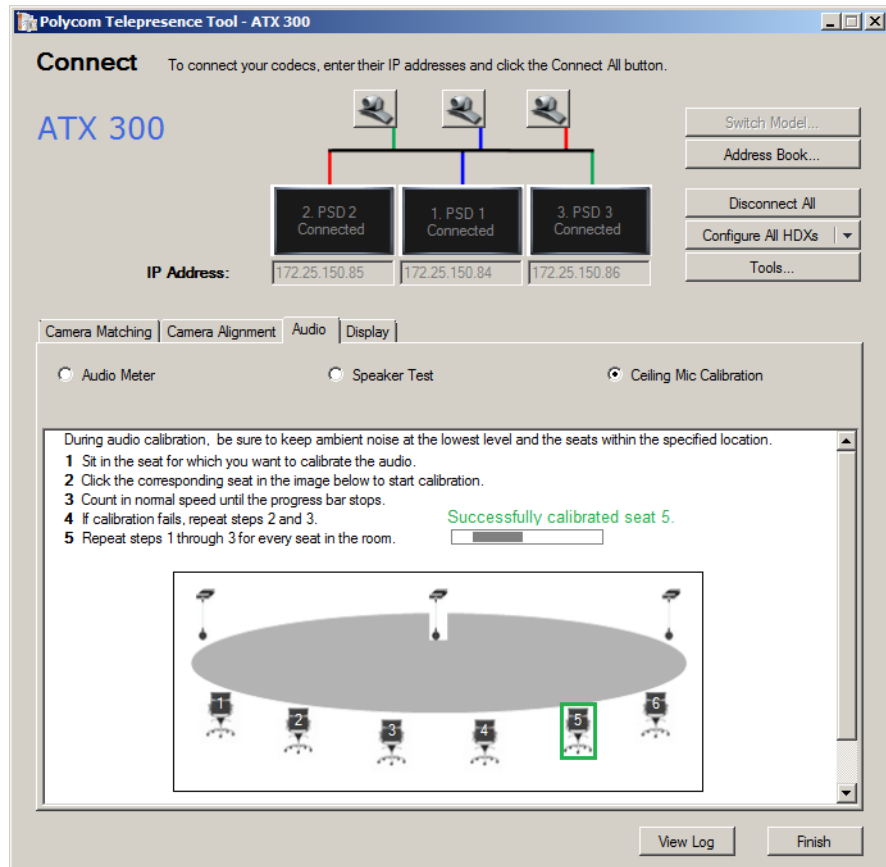


**Figure 5-28** Telepresence Tool Ceiling Mic Calibration

- 8 Sit at Seat 1 at the ATX table.
- 9 On the Audio tab, click the image that corresponds to the seat at which you are sitting. For example, if you are seated at Seat 1, click the chair marked 1 on the screen.
- 10 Ensure that there is no other sound in the room (such as keyboard typing, paper rustling, foot tapping, etc.), and then start counting loudly at a normal speed while facing the video wall. Keep your head as stationary as possible and continue counting until the progress bar stops, which typically takes about 10 to 20 seconds.

**11** Do one of the following:

- If the calibration succeeds, a message appears on the screen informing you that the calibration for that seat was successful, and you must repeat steps 8 through 10 for the remaining seats in the room.



**Figure 5-29** Telepresence Tool Audio/Ceiling Mic Calibration

- If the calibration fails, a message appears on the screen informing you that the calibration for that seat failed, and you must repeat steps 9 and 10 again for that particular seat.

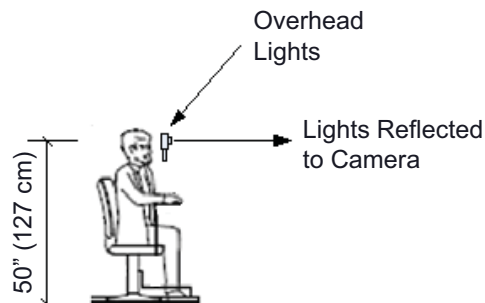
## Measuring the Room Lighting

Measure the lighting at each seat in the room to make sure that the light levels are in the correct range. Light levels vary depending on the room environment; however, Polycom recommends the following:

- Lighting level should be 45 foot candles.
- Lighting should be evenly lit for all participants.
- Camera dynamic range should be maximized.
- Provide good depth of field so that the rear wall will be in focus.
- Avoid hot spots to ensure proper exposure of the participants, the table, and the rear wall.

### To measure the room lighting:

- 1 Sit in one of the chairs at the table.
- 2 Hold a light meter (such as a Sekonic® L-758C) 50" (127 cm) above the floor and point it vertically at the displays.



**Figure 5-30** *Measuring the Room Lighting*

- Check that the light meter dome is fully retracted.
  - Use a tripod to maintain height consistency.
- 3 Measure the light level in foot candles and record the values where you can retrieve them later should you need to.
  - 4 Repeat steps 1 through 3 for each chair at the table.

The ideal light levels for the participants seated at each of the seats should be 45 foot candles. The difference in light levels between any two participants must be less than 10 foot candles.

If the light levels are below the recommended level of 45 foot candles, you should consult with a lighting firm to adjust the lighting as needed.



## Checking the Display Behavior when Calling and Hanging Up

This section describes what you can expect to see on the displays when placing or hanging up a video call or when placing a loopback call.

- When placing a video call, each of the displays associated with a codec that is participating in the call will show near-end video until the call connects. Any displays associated with a codec that is *not* participating in the call will show the following when the call is placed:
  - a** For ATX 300 systems only, a black screen with the near camera icon and system name displayed on the screen.
  - b** A completely black screen.

Note that the display is showing black video rather than the camera's output. For more information, refer to the table on page [5-10](#).

Steps a and b will take about five seconds to complete.

- When hanging up a video call, each of the displays will show the following:
  - a** Near-site video.
  - b** A completely black screen.

Steps a and b will take about five seconds to complete. The video signal will then stop being sent, which will cause the displays to go into Standby mode (if the displays were correctly configured as described on page [5-4](#)).

- For ATX 300 systems version 3.0.1, 3.0.2, and 3.0.3, if you place a loopback call, blank video appears on the center display. This occurs because a loopback call uses Preset 97. When Preset 97 is used, the Left codec sends video from Camera-2 (B2). Because Camera-2 (B2) is not used for Preset 97, the Left codec sends no video to the Primary codec, resulting in blank video on the center display.



# Preliminary Site Information

This appendix lists questions that the customer and integrator can answer together in order to help determine if the selected room is appropriate for installing a Polycom ATX system. If you are planning to install an ATX system in more than one room, review the questions in this appendix for each room.

Please answer the questions as thoroughly as you can. You may need to enlist the help of others in the organization to answer some of the questions. For example, you may need to get information from:

- Facilities personnel
- IT/Network administrators
- Site administrators
- Electricians

## About the Room

This section asks questions that will help determine what changes, if any, need to be made to the facilities at the site in order for the room to be ready for the ATX. Each question has an "Anything Else?" row where you can add additional information.

Question 1	
What are the width, depth, and height of the room in which you plan to locate the ATX? (Please indicate English or Metric units of measurement.)	Width: Depth: Height:
Anything Else?	
<p>Here's Why We're Asking:</p> <p>The equipment must fit into the room properly. See <a href="#">Chapter 2, "Installing the Displays, Table, Cameras, and Chairs,"</a> for more information.</p>	

Question 2	
Are there windows in the room? If so, what percent of the room has windows? What are the dimensions of the windows?	<input type="checkbox"/> Yes Percent: Dimensions: <input type="checkbox"/> No
Anything Else?	
<p><b>Here's Why We're Asking:</b></p> <p>Less than 20% of the room should have windows or other vertical glass walls. Because natural light always varies, it can affect the quality of the video. Windows also create audio reverberation. If the room you selected does have windows, see Question 3.</p>	
Question 3	
If the room has windows, are there curtains or blinds on the windows?	<input type="checkbox"/> Yes <input type="checkbox"/> No
Anything Else?	
<p><b>Here's Why We're Asking:</b></p> <p>Polycom highly recommends adding acoustical window treatments to windows, especially in rooms with more than 20% windows or other glass walls. Blackout curtains or blinds that block out the natural light and that match the color of the walls within the camera view are preferable.</p>	
Question 4	
Does the room have HVAC (Heating, Ventilation, and Air Conditioning)?	<input type="checkbox"/> Yes <input type="checkbox"/> No
Anything Else?	
<p><b>Here's Why We're Asking:</b></p> <p>The room where the ATX is located requires an HVAC system. Keep in mind, however, that HVAC can introduce noise into the environment that will be picked up by the Ceiling Microphone Arrays. Polycom typically recommends at least a 4' (1.22 m) distance between the HVAC and the Ceiling Microphone Arrays; however, your room may require a greater distance depending on the noise level of your particular HVAC (see Question 14 for more information).</p> <p>Polycom also recommends installing an independently controlled thermostat in the room. The operating temperature for the equipment in the room should be within 41° to 86° F (5° to 30 C°).</p>	

Question 5	
Are there any architectural elements in the room, such as columns, that the integrator should be aware of?	<input type="checkbox"/> Yes <input type="checkbox"/> No
Anything Else?	
<p>Here's Why We're Asking:</p> <p>The equipment must fit into the room properly. See <a href="#">Chapter 2, "Installing the Displays, Table, Cameras, and Chairs,"</a> for more information.</p>	
Question 6	
Are there any obstructions on the floor in the room?	<input type="checkbox"/> Yes <input type="checkbox"/> No
Anything Else?	
<p>Here's Why We're Asking:</p> <p>The floor must be free from obstructions so that the displays and table can be set up at the proper location in the room. Additionally, the floor should be free from any obstructions so that people can walk around the room easily and safely.</p>	
Question 7	
Where is the door located?	Location:
Anything Else?	
<p>Here's Why We're Asking:</p> <p>If possible, doors should be located out of the camera view. Doors located on the side walls are preferable to doors located behind the participants seated at the table. See <a href="#">Chapter 2, "Installing the Displays, Table, Cameras, and Chairs,"</a> for a top view of the display and table placement within a room.</p>	
Question 8	
Is the ceiling in the room a suspended ceiling? (If not, please specify.)	<input type="checkbox"/> Yes <input type="checkbox"/> No
Anything Else?	
<p>Here's Why We're Asking:</p> <p>To accommodate the Polycom Ceiling Microphone Arrays and to obtain the best acoustics, Polycom highly recommends using a room with a suspended ceiling (also known as a dropped ceiling). See <a href="#">Chapter 3, "Installing the Remaining Electronic Components,"</a> and Question 15 for more information about the Ceiling Microphone Arrays.</p>	

<b>Question 9</b>																					
Is the flooring in the room carpeted? (If not, please specify.)	<input type="checkbox"/> Yes <input type="checkbox"/> No																				
Anything Else?																					
<b>Here's Why We're Asking:</b> To obtain the best acoustics, Polycom highly recommends using a room where the floor is carpeted or that you have carpeting installed in the room.																					
<b>Question 10</b>																					
Are the walls in the room composed of drywall? (If not, please specify.)	<input type="checkbox"/> Yes <input type="checkbox"/> No																				
Anything Else?																					
<b>Here's Why We're Asking:</b> To obtain the best acoustics, Polycom highly recommends using a room where the walls are composed of drywall. If the walls in the room you have selected are cinder block or another highly reverberant surface, you will likely need to add acoustical wall treatments.																					
<b>Question 11</b>																					
What are the colors of the room's walls? (Indicate the color of each wall if they vary.)	Color(s):																				
Anything Else?																					
<b>Here's Why We're Asking:</b> The walls in the room where the ATX is located should be non-textured and non-patterned. For the paint on the walls, Polycom recommends using eggshell finish and selecting one of these Benjamin Moore® paint colors:																					
<table border="1" style="margin: auto; border-collapse: collapse;"> <tr> <td style="background-color: #444; width: 100px; height: 30px;"></td> <td style="background-color: #555; width: 100px; height: 30px;"></td> <td style="background-color: #666; width: 100px; height: 30px;"></td> </tr> <tr> <td style="font-size: small;">Gravel Gray 2127-30</td> <td style="font-size: small;">Evening Dove 2128-30</td> <td style="font-size: small;">Blue Note 2129-30</td> </tr> <tr> <td style="background-color: #777; width: 100px; height: 30px;"></td> <td style="background-color: #888; width: 100px; height: 30px;"></td> <td style="background-color: #999; width: 100px; height: 30px;"></td> </tr> <tr> <td style="font-size: small;">Wolf Gray 2127-40</td> <td style="font-size: small;">Oxford Gray 2128-40</td> <td style="font-size: small;">Normandy 2129-40</td> </tr> <tr> <td style="background-color: #aaa; width: 100px; height: 30px;"></td> <td style="background-color: #bbb; width: 100px; height: 30px;"></td> <td style="background-color: #ccc; width: 100px; height: 30px;"></td> </tr> <tr> <td style="font-size: small;">Pike's Peak Gray 2127-</td> <td style="font-size: small;">November Skies 2128-50</td> <td style="font-size: small;">Winter Lake 2129-50</td> </tr> </table>					Gravel Gray 2127-30	Evening Dove 2128-30	Blue Note 2129-30				Wolf Gray 2127-40	Oxford Gray 2128-40	Normandy 2129-40				Pike's Peak Gray 2127-	November Skies 2128-50	Winter Lake 2129-50		
Gravel Gray 2127-30	Evening Dove 2128-30	Blue Note 2129-30																			
Wolf Gray 2127-40	Oxford Gray 2128-40	Normandy 2129-40																			
Pike's Peak Gray 2127-	November Skies 2128-50	Winter Lake 2129-50																			
If you cannot obtain Benjamin Moore paint, you can use a Sherwin-Williams® custom match for one of these colors or use an equivalent from another manufacturer. For example, Sherwin-Williams custom match for Benjamin Moore November Skies (2128-50) is:																					
<table style="margin: auto;"> <tr> <td>BAC Colorant</td> <td>OZ</td> <td>32</td> <td>64</td> <td>128</td> </tr> <tr> <td>L1- Blue</td> <td>-</td> <td>27</td> <td>-</td> <td>-</td> </tr> <tr> <td>R2 - Maroon</td> <td>-</td> <td>7</td> <td>-</td> <td>-</td> </tr> <tr> <td>R3 - Magenta</td> <td>-</td> <td>10</td> <td>1</td> <td>1</td> </tr> </table>		BAC Colorant	OZ	32	64	128	L1- Blue	-	27	-	-	R2 - Maroon	-	7	-	-	R3 - Magenta	-	10	1	1
BAC Colorant	OZ	32	64	128																	
L1- Blue	-	27	-	-																	
R2 - Maroon	-	7	-	-																	
R3 - Magenta	-	10	1	1																	

Question 12	
Do fluorescent lights provide most of the light in the room? (If not, please specify the types of lighting fixtures.)	<input type="checkbox"/> Yes <input type="checkbox"/> No
Anything Else?	
<p><b>Here's Why We're Asking:</b></p> <p>The ATX is designed to work best in a room with evenly dispersed, ambient light.</p> <ul style="list-style-type: none"> <li>• Light levels should be between 40 and 70 foot candles, with an ideal of 45 foot candles and a minimum of 40 foot candles.</li> <li>• Only electronic ballast fluorescent lights should be used. (Do not use magnetic ballast lights.)</li> <li>• The optimal color temperature is 4100K.</li> <li>• Although some regions of Japan operate on 50 Hz and some operate on 60 Hz, the camera power frequency for all of Japan should always be set for 60 Hz.</li> </ul> <p>Polycom recommends using a lighting designer and having the lighting professionally installed.</p>	
Question 13	
Does the room have thermostats, fire alarms, light switches, or other controls on the wall behind where the displays will be located?	<input type="checkbox"/> Yes <input type="checkbox"/> No
Anything Else?	
<p><b>Here's Why We're Asking:</b></p> <p>Because the displays are installed on a wall, they may cover up any thermostats, fire alarms, light switches, or other controls located on that wall. Polycom recommends selecting a wall that does not have any thermostats or light switches, or that you have the thermostats or light switches moved prior to the display installation.</p>	
Question 14	
Are there any rooms near the ATX room that may be noisy (for example, meeting rooms, offices, kitchen, reception areas, restrooms, or copy centers)? Polycom recommends that the NC rating for the room should be under 30, which is an SPL meter reading of about 40 dBA.	<input type="checkbox"/> Yes <input type="checkbox"/> No  If Yes, rooms nearby:
Anything Else?	
<p><b>Here's Why We're Asking:</b></p> <p>Sounds from adjacent rooms may interfere with the audio during conferences. If the room does not meet the specifications above, the customer may want to consider another room or the integrator may be able to determine ways to reduce noise within the room (whether the noise comes from adjacent rooms, HVAC, or other sources).</p>	

Question 15	
Are you planning to use the Polycom Ceiling Microphone Arrays in the room?	<input type="checkbox"/> Yes <input type="checkbox"/> No
Anything Else?	
<p><b>Here's Why We're Asking:</b></p> <p>Polycom highly recommends the use of Ceiling Microphone Arrays in ATX rooms. To prepare for the installation of these microphones, an electrician must do the following:</p> <ul style="list-style-type: none"> <li>• Install a single gang junction box in the wall behind the displays on the side near the electronic components.</li> <li>• Install a conduit in the wall behind the displays. The conduit should extend in a straight run from the junction box to the plenum space in the ceiling, and should be at least 1.2" (30 mm) in diameter.</li> <li>• Stub up the conduit (that is, bend it approximately 90°) into the plenum area.</li> </ul> <p>Polycom recommends at least a 4' (1.2 m) separation between any HVAC equipment (particularly air conditioning equipment) and the Ceiling Microphone Arrays.</p> <p>For more information about the Ceiling Microphone Arrays, see <a href="#">"Installing the Ceiling Microphone Arrays"</a> on page 3-4. Additionally, if your ceiling is 10' (3.05 m) or higher, you should order an optional 6' (1.82 m) drop cable for each Ceiling Microphone Array from Polycom.</p> <p>If you want to use tabletop microphones rather than the standard Ceiling Microphone Arrays in your ATX room, you must purchase three HDX tabletop microphone array kits (part number 2215-23327-001). Each kit contains one microphone array and one 25' (7.62 m) cable. For more information about the tabletop microphones, see <a href="#">"Installing the Tabletop Microphones"</a> on page 3-12.</p>	
Question 16	
Is there an analog phone line available in the room?	<input type="checkbox"/> Yes <input type="checkbox"/> No
Anything Else?	
<p><b>Here's Why We're Asking:</b></p> <p>If you want to use the ATX audio add-on feature, you must have an analog phone line in the room.</p>	



Question 17	
Are you willing to make the facilities changes needed to support the ATX?	<input type="checkbox"/> Yes <input type="checkbox"/> No
Anything Else?	
<p>Here's Why We're Asking:</p> <p>Examples of facilities changes may include but are not limited to the following:</p> <ul style="list-style-type: none"> <li>• Curtains or shades may have to be added to the windows.</li> <li>• If the power requirements are not met, it may be necessary to run new circuits to the room. All circuits used for the ATX must be wired to the same electrical panel to ensure common ground.</li> <li>• The back wall may have to be painted or covered.</li> <li>• Floors may have to be carpeted.</li> <li>• Ceilings may have to change, depending on the material and height.</li> <li>• Lighting may have to be changed.</li> <li>• Acoustical wall coverings may have to be added.</li> <li>• Network connections and phone jacks may have to be added.</li> </ul>	

## About the Network

This section asks questions that will help you determine if the network at the proposed ATX site is adequate or if changes need to be made prior to installation. Each question has an "Anything Else?" row where you can add additional information you think might be helpful for Polycom to know.

Note that you may need the help of the network administrators to answer these questions. Polycom recommends that the network administrators read these documents prior to installation:

- *Supporting Real-time Traffic: Preparing Your IP Network for Video Conferencing*, available at [http://www.polycom.com/products/resources/white\\_papers/index.html](http://www.polycom.com/products/resources/white_papers/index.html).
- *Preparing Your IP Network for High Definition Video Conferencing*, available at [http://www.polycom.com/global/documents/services/professional\\_services/high\\_definition\\_readiness\\_services/whitepaper\\_preparing\\_your\\_ip\\_network\\_for\\_hd\\_video\\_conferencing.pdf](http://www.polycom.com/global/documents/services/professional_services/high_definition_readiness_services/whitepaper_preparing_your_ip_network_for_hd_video_conferencing.pdf).

<b>Question 18</b>		
Are you planning for this room to be managed by Video Network Operations Center (VNOc) services? (If yes, please indicate the provider.)	<input type="checkbox"/> Yes <input type="checkbox"/> No	
Anything Else?		
<b>Here's Why We're Asking:</b> You should coordinate with the VNOc to assure a good overall telepresence solution.		
<b>Question 19</b>		
Are the required LAN connections available in the room?	<input type="checkbox"/> Yes <input type="checkbox"/> No	
Anything Else?		
<b>Here's Why We're Asking:</b> The ATX requires the following number of 100/1000VASE-T network connections on RJ-45 connectors as well as static IP addresses:		
<b>HDXs</b>	<b>System Controller</b>	<b>Total</b>
2	1	3
3	1	4
4	1	5

Question 20	
Do you have bandwidth available to support the ATX?	<input type="checkbox"/> Yes <input type="checkbox"/> No
Anything Else?	
<p><b>Here's Why We're Asking:</b>                      Polycom recommends the following bandwidth for H.264 High Profile video calls:</p> <ul style="list-style-type: none"> <li>• ATX 200: 1080p30: 3 Mbps minimum; 6 Mbps recommended</li> <li>• ATX 200: 720p60: 3 Mbps minimum; 6 Mbps recommended</li> <li>• ATX 300: 1080p30: 4.5 Mbps minimum; 9 Mbps recommended</li> <li>• ATX 300: 720p60: 4.5 Mbps minimum; 9 Mbps recommended</li> <li>• ATX 400: 1080p30: 6 Mbps minimum; 12 Mbps recommended</li> <li>• ATX 400: 720p60: 6 Mbps minimum; 12 Mbps recommended</li> </ul> <p>Polycom recommends the following bandwidth for H.264 non-High Profile video calls:</p> <ul style="list-style-type: none"> <li>• ATX 200: 1080p30: 6 Mbps minimum; 12 Mbps recommended</li> <li>• ATX 200: 720p60: 9 Mbps minimum; 18 Mbps recommended</li> <li>• ATX 300: 1080p30: 6 Mbps minimum; 12 Mbps recommended</li> <li>• ATX 300: 720p60: 4 Mbps minimum; 8 Mbps recommended</li> <li>• ATX 400: 1080p30: 12 Mbps minimum; 24 Mbps recommended</li> <li>• ATX 400: 720p60: 8 Mbps minimum; 16 Mbps recommended</li> </ul>	
Question 21	
What other real-time media/VoIP systems are installed on site?	
Anything Else?	
<p><b>Here's Why We're Asking:</b>                      If you are already running real time video or VoIP, then it is more likely that you have the experience to manage telepresence on your network.</p>	
Question 22	
What is the bandwidth on the WAN connections?	
Anything Else?	
<p><b>Here's Why We're Asking:</b>                      Knowing the expected WAN connectivity can help you assess the impact of telepresence on the network.</p>	

<b>Question 23</b>	
What QoS mechanisms are in place in the network?	
Anything Else?	
<p><b>Here's Why We're Asking:</b>                  If you already have QoS, then it is more likely that you have the experience to manage real time media, including telepresence. If you are using Diffserv, then the HDX Diffserv markings can be used to fit into your current QoS mechanisms.</p>	
<b>Question 24</b>	
Does your network meet the following requirements end-to-end? <ul style="list-style-type: none"> <li>• Packet loss: &lt; 0.1%</li> <li>• End-to-end latency: &lt; 150ms</li> <li>• Packet jitter: &lt; 40ms</li> </ul>	<input type="checkbox"/> Yes <input type="checkbox"/> No
Anything Else?	
<p><b>Here's Why We're Asking:</b>                  Your network must meet the above requirements for an optimal telepresence experience.</p>	



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