Field-Replaceable Unit Guide

Revised: October 8, 2008, OL-14522-01

This chapter provides you with the information you need to remove and install field-replaceable units (FRUs) and includes the following sections:

- Complete List of Spares for the Cisco TelePresence System 500, page A-1
- Replacing the Camera—Part Number CTS500-CAMERA=, page A-3
- Replacing the Microphone Assembly—Part Number CTS-MIC-ARRAY=, page A-5
- Replacing the Speaker—Part Number CTS-LDSPKR-SM=, page A-7
- Replacing a Codec—Part Number CTS-500-CODEC-G2=, page A-10
- Replacing a Light Fixture—Part Number CTS500-LIGHT-FIXT=, page A-11
- Replacing a Light Reflector—Part Number CTS500-LIGHT-REFL=, page A-13
- Replacing the Display—Part Number CTS-DISP-37-GEN1=, page A-15

⚠️ Warning Only trained and qualified personnel should be allowed to install, replace, or service this equipment.

⚠️ Warning Installation of the equipment must comply with local and national electrical codes.

Complete List of Spares for the Cisco TelePresence System 500

Table A-1 shows the list of the field-replaceable units (spares) for the Cisco TelePresence System 500.

<table>
<thead>
<tr>
<th>FRU Part Number</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>CTS500-ACC-KIT=</td>
<td>Accessory Kit for the Cisco TelePresence System 500-37</td>
</tr>
<tr>
<td>CTS500-CAMERA=</td>
<td>Camera for the Cisco TelePresence System 500-37</td>
</tr>
<tr>
<td>CTS500-LIGHT-FIXT=</td>
<td>Light fixture for the Cisco TelePresence System 500-37</td>
</tr>
<tr>
<td>CTS-CAB-HDMI-DVID=</td>
<td>HDMI-to-DVI-D cable, 3.0 meters</td>
</tr>
<tr>
<td>CTS-CAB-HDMI-HDMI=</td>
<td>HDMI-to-HDMI cable, 6.0 meters</td>
</tr>
</tbody>
</table>
### Table A-1  List of Field-Replaceable Units for the Cisco TelePresence System (continued)

<table>
<thead>
<tr>
<th>FRU Part Number</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>CTS-CABL-DVIA-VGA=</td>
<td>DVI-A-to-15VGA cable, 8.0 meters</td>
</tr>
<tr>
<td>CTS-CABL-RJ45-10=</td>
<td>RJ45-to-RJ45 cable, 10 meters</td>
</tr>
<tr>
<td>CTS-CABL-RJ45-3=</td>
<td>RJ45-to-RJ45 cable, 3 meters</td>
</tr>
<tr>
<td>CTS-CABL-RJ45-6=</td>
<td>RJ45-to-RJ45 cable, 6 meters</td>
</tr>
<tr>
<td>CTS-CAM-TOOL=</td>
<td>TelePresence Camera Calibration Tool—Includes large target, small target, ruler, and easel</td>
</tr>
<tr>
<td>CTS-CAM-TOOL-G2=</td>
<td>TelePresence Camera Calibration Tool—Includes large target, small target, and easel</td>
</tr>
<tr>
<td>CTS-CODEC-PRI-G2=</td>
<td>Primary codec used in all countries except China for the following systems:</td>
</tr>
<tr>
<td></td>
<td>• Cisco TelePresence System 500-37 (PID: CTS-500)</td>
</tr>
<tr>
<td></td>
<td>• Cisco TelePresence System 1000 (PID: CTS-1000)</td>
</tr>
<tr>
<td></td>
<td>• Cisco TelePresence System 1100 (PID: CTS-1100)</td>
</tr>
<tr>
<td></td>
<td>• Cisco TelePresence System 1300-65 (PID: CTS-1300)</td>
</tr>
<tr>
<td></td>
<td>• Cisco TelePresence System 3000 (PID: CTS-3000)</td>
</tr>
<tr>
<td></td>
<td>• Cisco TelePresence System 3010 (PID: CTS-3010)</td>
</tr>
<tr>
<td></td>
<td>• Cisco TelePresence System 3200 (PID: CTS-3200)</td>
</tr>
<tr>
<td></td>
<td>• Cisco TelePresence System 3210 (PID: CTS-3210)</td>
</tr>
<tr>
<td>CTS-CODEC-SEC=</td>
<td>Secondary Codec</td>
</tr>
<tr>
<td>CTS-CODEC-SEC-CH=</td>
<td>Secondary codec used in China for the following systems:</td>
</tr>
<tr>
<td></td>
<td>• Cisco TelePresence System 500-37 (PID: CTS-500)</td>
</tr>
<tr>
<td></td>
<td>• Cisco TelePresence System 1000 (PID: CTS-1000)</td>
</tr>
<tr>
<td></td>
<td>• Cisco TelePresence System 1100 (PID: CTS-1100)</td>
</tr>
<tr>
<td></td>
<td>• Cisco TelePresence System 1300-65 (PID: CTS-1300)</td>
</tr>
<tr>
<td></td>
<td>• Cisco TelePresence System 3000 (PID: CTS-3000)</td>
</tr>
<tr>
<td></td>
<td>• Cisco TelePresence System 3010 (PID: CTS-3010)</td>
</tr>
<tr>
<td></td>
<td>• Cisco TelePresence System 3200 (PID: CTS-3200)</td>
</tr>
<tr>
<td></td>
<td>• Cisco TelePresence System 3210 (PID: CTS-3210)</td>
</tr>
<tr>
<td>CTS-DISP-37-GEN1=</td>
<td>Spare Display for Cisco TelePresence System 500-37 (PID: CTS-500)</td>
</tr>
<tr>
<td>CTS-LDSPKR=</td>
<td>Loudspeaker and speaker cable for the Cisco TelePresence Systems 500, 1100, 1300, 3010, and 3210</td>
</tr>
<tr>
<td></td>
<td><strong>Note</strong>  This speaker does not work for the Cisco TelePresence System 3000 or 3200.</td>
</tr>
<tr>
<td>CTS-LDSPKR-SM=</td>
<td>High Fidelity Loudspeaker—All Systems except the Cisco TelePresence System 3000 and 3200—No speaker cable</td>
</tr>
<tr>
<td>CTS-LIGHT-CTRL=</td>
<td>Auxiliary Control Unit for the Cisco TelePresence Systems 1000, 3000, 3010, 3200, and 3210</td>
</tr>
<tr>
<td>CTS-MIC-ARRAY=</td>
<td>Microphone Array</td>
</tr>
</tbody>
</table>
Replacing the Camera—Part Number CTS500-CAMERA=

Required Information, Tools, and Equipment

After you replace the camera, you will need a laptop computer to access the Cisco TelePresence System to realign and refocus the new camera. No other special tools are required.

Removing and Replacing the Camera

Caution

Take care not to scratch or mar the display screen during the replacement procedure.

Note

The directions left and right refer to the assembly as you face it.

Step 1

Power off the system by turning off the display and codec.

- The power switch for the display is on the underside of the display, next to the power inlet on the right.
- The power switch for the codec is on the top left of the codec.

Step 2

Remove the speaker cover by grasping the cover underneath the camera and gently pushing up to unlock it from the top edge. Then, rock the cover upward the outward and remove it from the display assembly.

Step 3

Remove the camera haze cover from the front of the camera lens.
Step 4  From the rear of the display, disconnect the DVI cable and Ethernet cables for the camera. These connections are located between the speaker connections in the upper part of the display. See Figure A-8 for more information.

Step 5  Remove the camera from the front of the display by pressing the rear of the camera mount from the rear of the display assembly, while gently pulling the camera from the front of the display.

**Tip**  The camera seats in the display with a tight friction fit. Do not use force when removing the camera. If removal is difficult, gently rock the camera from side to side from the front of the display while pressing it from the rear of the display.

Step 6  From the front of the display, take the new camera and route the cables through to the rear of the display.

Step 7  Gently push the camera until it fully seats into the display.

Step 8  From the rear of the display, connect the DVI and Ethernet cables for the camera.

Step 9  Reattach the camera haze cover to the front of the camera lens.

Step 10  Reattach the speaker cover to the display screen assembly by hooking the mounting tabs of the speaker cover on the bottom edge of the speaker assembly, then gently rocking the speaker cover upward and forward until it fully seats onto the assembly.

Step 11  Power on the system by turning the power switches for the display and codec to On.
Replacing the Microphone Assembly—Part Number CTS-MIC-ARRAY=

Required Information, Tools, and Equipment

To replace the microphone assembly, you need a #2 (medium) Phillips screwdriver.

Removing and Replacing the Microphone Assembly

Caution
Take care not to scratch or mar the display screen during the replacement procedure.

Note
The directions left and right refer to the assembly as you face it.

Step 1
Unplug the microphone cable from the microphone. The connector is located on the center rear of the microphone assembly.

Note
The microphone assembly is located on the underside of the display and is covered with a black perforated mesh screen.

Step 12
Perform camera adjustment procedures by completing the steps in the “Setting Up the Camera” section on page 5-7.
Step 2  Remove the four screws that attach the microphone assembly to the display.

Figure A-2  Removing the Microphone Assembly

Step 3  Attach the new microphone assembly to the display assembly using the screws.

Step 4  Connect the microphone cable to the microphone.
See Figure 2-8 for the microphone connector location on the display.

Step 5  Power on the system by turning the power switches for the display and codec to On.
Replacing the Speaker—Part Number CTS-LDSPKR-SM=

Required Information, Tools, and Equipment

To replace the microphone assembly, you need a #2 (medium) Phillips screwdriver.

Removing and Replacing the Speakers

⚠️ Caution
Take care not to scratch or mar the display screen during the replacement procedure.

✍ Note
The directions left and right refer to the assembly as you face it.

Step 1
Power off the system by turning off the display and codec.

- The power switch for the display is on the underside of the display, next to the power inlet on the right.
- The power switch for the codec is on the top left of the codec.
Step 2  Remove the speaker cover by grasping the cover underneath the camera and gently pushing up to unlock it from the top edge. Then, rock the cover upward the outward and remove it from the display assembly.

Step 3  Remove the camera haze cover from the front of the camera lens.

Figure A-3   Removing the Speaker Cover and Camera Haze Cover
Step 4 Disconnect the speaker wires from the speaker connections on rear of the display assembly. See Figure 2-6 for the location of the speaker connections.

Step 5 Using a Phillips screwdriver, unscrew the screws that attach the speaker to the display assembly, then remove the speaker.

Figure A-4 Removing the Speaker

Step 6 Attach the new speaker to the display assembly.

Step 7 From the rear of the display, connect the speaker wires.

Step 8 Reattach the camera haze cover to the front of the camera lens.

Step 9 Reattach the speaker cover to the display screen assembly by hooking the mounting tabs of the speaker cover on the bottom edge of the speaker assembly, then gently rocking the speaker cover upward and forward until it fully seats onto the assembly.

Step 10 Power on the system by turning the power switches for the display and codec to On.

Note If required, perform camera adjustment procedures by completing the steps in the “Setting Up the Camera” section on page 5-7.
### Replacing a Codec—Part Number CTS-500-CODEC-G2=

#### Required Information, Tools, and Equipment

To remove and replace a codec unit for the Cisco TelePresence CTS-500-37, you need the following information, tools, and equipment:

For a wall-mounted or table stand-mounted CTS-500-37, you need a #2 Phillips screwdriver.

For a pedestal stand-mounted CTS-500-37, the following tools are required:

- 3/16-inch Allen driver (wrench and bit are provided with the pedestal stand kit)
- 3 mm Allen wrench (provided with pedestal stand kit)

#### Removing and Replacing a Codec

**Step 1**  
Power off the system by turning off the display and codec.

- The power switch for the display is on the underside of the display, next to the power inlet on the right.
- The power switch for the codec is on the top left of the codec.

**Step 2**  
Access the codec by performing one of the following actions:

- For a pedestal stand-mounted CTS-500-37, lift and remove the codec cover. See Figure 2-14 for more information.
- For a wall-mounted or table stand-mounted CTS-500-37, remove the codec left and right end caps, top cover, and rear cover, and disconnect the codec from the base.

**Tip**  
Removal is the opposite of installation. See Step 9 through Step 13 in Chapter 4, “Assembling a Table Stand-Mounted CTS-500-37” for installation instructions.

**Step 3**  
Remove the cables from the codec. Label each cable with masking tape for identification as it is removed.

**Step 4**  
Remove the brackets that attach the codec to its mounting by completing one of the following actions:

- For a pedestal stand-mounted CTS-500-37, remove the screws that attach the codec to its mounting base. See Figure 2-9 for more information. Then remove the codec from its mounting base.
- For a wall-mounted or table stand-mounted CTS-500-37, detach the codec from its base. Removal is the opposite of installation. See Step 9 through Step 13 in Chapter 4, “Assembling a Table Stand-Mounted CTS-500-37” for installation instructions.

**Step 5**  
Take the new codec and attach it to its mounting by completing one of the following actions:
For a pedestal stand-mounted CTS-500-37, set the codec on its base plates, then attach the codec to the base plates using the codec attachment plates, hex screws and washers. See Figure 2-9 for more information.

For a wall-mounted or table stand-mounted CTS-500-37, attach the codec to its base. See Step 9 through Step 13 in Chapter 4, “Assembling a Table Stand-Mounted CTS-500-37” for installation instructions.

Note
Do not yet attach the end caps or top cover.

Step 6 Reattach the cables, using the masking tape labels from Step 3 as a guide.

Step 7 Replace the codec cover by performing one of the following actions:

- For a pedestal stand-mounted CTS-500-37, replace the codec cover. See Figure 2-14 for more information.

- For a wall-mounted or table stand-mounted CTS-500-37, replace the codec left and right end caps and the top cover. See Step 9 through Step 13 in Chapter 4, “Assembling a Table Stand-Mounted CTS-500-37” for installation instructions.

Step 8 Power on the system by turning the power switches for the display and codec to On.

Step 9 Reconfigure Cisco Unified Communications Manager to reflect the new MAC address of the codec. For more information, refer to the Cisco Unified Communications Manager Installation Guide for Cisco TelePresence System.

Step 10 Configure the codec to work with the other CTS-500-37 components by completing the tasks in Chapter 5, “First-Time Setup.”

Replacing a Light Fixture—Part Number CTS500-LIGHT-FIXT=

Required Information, Tools, and Equipment

No tools are required to replace the light fixture.

Removing and Replacing a Light Fixture

Note
The directions left and right refer to the assembly as you face it.

Step 1 Power off the system by turning off the display and codec.

- The power switch for the display is on the underside of the display, next to the power inlet on the right.

- The power switch for the codec is on the top left of the codec.

Step 2 Remove the light fixture by disconnecting the wiring connector on the left side of the display assembly and lifting the fixture straight up.
Replacing a Light Fixture—Part Number CTS500-LIGHT-FIXT=

Tip
If the wires bind when you remove the light fixture, access the wires by opening the access panel on the left side of the display and unbind the wires. See Figure 6-1 for the location of the access panel.

Note
In the following figure, the light reflector panel has been removed for clarity.

Figure A-5 Removing the Light Fixture

Step 3 Connect the new light fixture to the connector and seat the fixture into the display.
Step 4    Power on the system by turning the power switches for the display and codec to On.

Replacing a Light Reflector—Part Number CTS500-LIGHT-REFL=

Required Information, Tools, and Equipment

No tools are required to replace the light reflector.

Removing and Replacing a Light Reflector

**Note**  The directions *left* and *right* refer to the assembly as you face it.

**Step 1**    Remove the light reflector by lifting it straight up from the display assembly.

**Note**  The callout numbers in Figure A-6 refer to the part numbers; see Table 2-1 for the parts list.
Step 2  Attach the new light reflector to the display assembly by sliding the reflector straight down onto the display.
Replacing the Display—Part Number CTS-DISP-37-GEN1=

Required Information, Tools, and Equipment

To replace the display, you need a #2 (medium) Phillips screwdriver.

Removing and Replacing the Display

⚠️ Caution
Take care not to scratch or mar the display screen during the replacement procedure.

✏️ Note
The directions left and right refer to the assembly as you face it.

Step 1
Power off the system by turning off the display and codec.

• The power switch for the display is on the underside of the display, next to the power inlet on the right.

• The power switch for the codec is on the top left of the codec.
Step 2  Remove the display top rear cover from the display.

Figure A-7  Removing Display Top Rear Cover
Step 3 Disconnect the cables from the following connections on the top of the display:

- Disconnect the speaker connections to the spade terminal connections. The cables are labeled red for the right speaker and white for the left.

Note Because you are viewing the display from the rear, left and right are reversed.

- Disconnect the Ethernet cable to the Ethernet connection for the camera.
- Disconnect the DVI cable to the DVI camera connection.

Figure A-8 Cable Connections for the Display, Top
Step 4  Disconnect the cables from the following connections on the underside of the display:

- Disconnect the HD video cable from the HD video connection for the display.
- Disconnect the power cord from the power inlet.
- Disconnect the microphone. The microphone connection is on the lower rear of the display.
- If present, disconnect the Auxiliary HD Video connection from the Digital Media Player (DMP).

Figure A-9  Cable Connections for the Display, Underside and Lower Rear

Note  The microphone assembly is located on the underside of the display and is covered with a black perforated mesh screen.
Step 5  Remove the four screws that attach the microphone assembly to the display.

*Figure A-10  Removing the Microphone Assembly*
Step 6  Remove the speaker cover by grasping the cover underneath the camera and gently pushing up to unlock it from the top edge. Then, rock the cover upward the outward and remove it from the display assembly.

Step 7  Remove the camera haze cover from the front of the camera lens.

*Figure A-11  Removing the Speaker Cover and Camera Haze Cover*
Step 8  Using a Phillips screwdriver, unscrew the screws that attach the speakers to the display assembly, then remove the speakers.

**Figure A-12  Removing the Speaker**

Step 9  Remove the camera from the front of the display by pressing the rear of the camera mount from the rear of the display assembly, while gently pulling the camera from the front of the display.

**Tip**  The camera seats in the display with a tight friction fit. Do not use force when removing the camera. If removal is difficult, gently rock the camera from side to side from the front of the display while pressing it from the rear of the display.
Step 10 Remove the light reflector panel.

Step 11 Remove the light fixture by disconnecting the wiring connector on the left side of the display assembly and lifting the fixture straight up.

Tip If the wires bind when you remove the light fixture, access the wires by opening the access panel on the left side of the display and unbind the wires. See Figure 6-1 for the location of the access panel.

Figure A-13 Removing Light Fixture
Replacing the Display—Part Number CTS-DISP-37-GEN1=

Step 13
Remove the display from the stand or mount by performing one of the following actions:

Note
To prevent injury to personnel or damage to equipment, use at least two people to remove the display.

- For a pedestal stand-mounted or table stand-mounted system, remove the display from the stand by lifting the display until the buttons on the display disengage from the keyhole slots in the stand. See Figure 2-4 to remove the display from the pedestal stand and Figure 4-1 to remove the display from the table stand.
- For a wall-mounted system, complete the following steps:
  a. Remove the set screw on the bottom of the interface bracket, then lift the display and mount from the interface bracket on the wall.
  b. Remove the four screws that attach the wall-mounted bracket to the display.

Note
Consult the instructions that came with the wall-mounted bracket kit for more information.

Step 14
Remove the new display from its packaging.

Step 15
Attach the display to the stand or mount by completing one of the following steps:

Note
To prevent injury to personnel or damage to equipment, use at least two people to remove the display.

- For a pedestal stand-mounted or table stand-mounted system, hang the display on the stand by lifting the display until the buttons on the display engage and overhang the keyhole slots in the stand. See Figure 2-4 to attach the display to pedestal stand and Figure 4-1 to attach the display to table stand.
- For a wall-mounted system, complete the following steps:
  a. Remove the buttons from the rear of the display.

Note
Save the screws; you use the screws when you attach the interface bracket to the display.

  b. Attach the interface bracket to the display using the screws that you removed in a. and the spacers that are provided in the wall mount kit. Detailed instructions are provided in the wall mount kit.
  c. Attach the mounting cup to the interface bracket using the screws that are provided in the wall mount kit. Detailed instructions are provided in the wall mount kit.

Note
Consult the instructions that came with the wall-mounted bracket kit for more information.

Step 16
Connect the light fixture to the connector and seat the fixture into the display.

See Figure A-13 for more information.

Step 17
Attach the light reflector panel to the display.

See Figure A-13 for more information.
Step 18  Attach the speakers to the display assembly.
        See Figure A-12 for more information.

Step 19  From the rear of the display, connect the speaker wires to the spade terminal connections.
        The cables are labeled red for the right speaker and white for the left.

Note    Because you are viewing the display from the rear, left and right are reversed.

Figure A-14  Cable Connections for the Display, Top
Step 20 From the front of the display, take the camera and route the cables through to the rear of the display.

Step 21 Gently push the camera until it fully seats into the display.

Step 22 From the rear of the display, connect the DVI and Ethernet cables for the camera.
   See Figure A-14 for the cable connections.

Step 23 Reattach the camera haze cover to the front of the camera lens.

Step 24 Reattach the speaker cover to the display screen assembly by hooking the mounting tabs of the speaker cover on the bottom edge of the speaker assembly, then gently rocking the speaker cover upward and forward until it fully seats onto the assembly.

Step 25 Reattach the microphone assembly to the display assembly using the screws.
   See Figure A-10 for more information.

Step 26 Connect the microphone cable to the microphone.
   See Figure A-15 for the microphone connector location on the display.
Step 27 Connect the cables to the following connections on the underside of the display:

- Connect the HD video cable to the HD video connection for the display.
- Connect the power cord to the power inlet. Use the power cord that does not have a 90 degree right angle at the power inlet; the part number is 37-0984-01.

**Note** Keep the power and signal cables separate; route the power cables on one side of the pedestal stand, route the signal cables on the other side of the stand.

- (Optional) Connect the Auxiliary HD Video connection to the Digital Media Player (DMP).

*Figure A-15 Cable Connections for the Display, Underside and Lower Rear*
Step 28  Replace the display top rear cover.

Tip  To make cover replacement easier, make sure that the ferrite cores on the wires are outside of the cover.

Figure A-16  Replacing the Display Top Rear Cover
Step 29  Power on the system by turning on the display and codec.

- The power switch for the display is on the underside of the display, next to the power inlet on the right.
- The power switch for the codec is on the top left of the codec.

Step 30  Perform camera adjustment procedures by completing the steps in the “Setting Up the Camera” section on page 5-7.