Cisco IP Phone Key Expansion Module

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Cisco IP Phone Key Expansion Module Setup Overview

The Cisco IP Phone 8800 Key Expansion Module (KEM) adds additional line appearances, speed dials, or programmable buttons to the phone. The programmable buttons can be set up as phone line buttons, speed-dial buttons, or phone feature buttons.

The following table lists the phones and the number of Key Expansion Modules that each model supports.
Table 1: Cisco IP Phones and Supported KEMs

<table>
<thead>
<tr>
<th>Cisco IP Phone model</th>
<th>Supported KEMs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cisco IP Phone 8851 and 8851NR</td>
<td>2 KEMs with 72 lines or buttons</td>
</tr>
<tr>
<td>Cisco IP Phone 8861</td>
<td>3 KEMs with 108 lines or buttons</td>
</tr>
</tbody>
</table>

Related Topics

Wall Mounts

KEM Power Information

The Cisco IP Phone 8800 Key Expansion Module possesses the following power consumption and power scheme:

Power consumption

48V DC, 5W per KEM

Power scheme

The phone can power one KEM directly. For more information, see the following table.

Table 2: Key Expansion Module Power

<table>
<thead>
<tr>
<th></th>
<th>Cisco IP Phone 8851 and 8851NR</th>
<th>Cisco IP Phone 8861</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Accessories</strong></td>
<td>802.3af PoE</td>
<td>802.3af PoE</td>
</tr>
<tr>
<td>1 KEM</td>
<td>Supported</td>
<td>Supported</td>
</tr>
<tr>
<td>2 KEM</td>
<td>Not supported</td>
<td>Not supported</td>
</tr>
<tr>
<td>3 KEM</td>
<td>Not supported</td>
<td>Not supported</td>
</tr>
<tr>
<td>1 KEM + tablet charging</td>
<td>Not supported</td>
<td>Not supported</td>
</tr>
<tr>
<td>2 KEM + tablet charging</td>
<td>Not supported</td>
<td>Not supported</td>
</tr>
<tr>
<td>3 KEM + tablet charging</td>
<td>Not supported</td>
<td>Not supported</td>
</tr>
</tbody>
</table>
When more than one KEM is attached to the Cisco IP Phone 8861, the fast-charge feature using the back USB port is not supported. In this scenario, the back port will slow-charge the device.

Connect Single KEM to Cisco IP Phone

Procedure

Step 1 Unplug the Ethernet cable from the phone.
Step 2 If installed, remove the footstand from the phone.
Step 3 Locate the accessory connector covers on the side of the phone.
   The following diagram shows the location of the accessory connector covers.

Step 4 Remove the two accessory connector covers.
   The following diagram shows the removal of an accessory connector cover.
The slots are designed for the spine connector only. Inserting other objects will cause permanent damage to the phone.

**Step 5** Position the phone so that the front of the phone is facing up.

**Step 6** Connect one end of the KEM spine connector to the accessory connector on the Cisco IP Phone.

a) Align the spine connector with the accessory connector ports.

   **Note** Install the connector in the orientation shown in the following diagrams.

b) Firmly press the spine connector into the phone.

The following diagram shows the spine connector.

The following diagram shows the installation of the spine connector.
Step 7  Connect the other end of the spine connector to the KEM as shown in the following figure.
   a) Align the spine connector with the KEM accessory connector ports.
   b) Firmly press the KEM into the spine connector.
Step 8  Use a screwdriver to fasten the screws into the phone. This step ensures that the phone and KEM remain connected at all times. The following diagram shows the location of the screw holes on the phone and one KEM.

Note  Make sure that the screws fully inserted into the phone and tightened.
Step 9  (Optional) Install the footstands on the phone and on the KEM, and adjust both footstands to rest evenly on the work surface.

Step 10  Plug the Ethernet cable into the phone.

Connect Two or Three KEMs to Cisco IP Phone

Procedure

Step 1  Unplug the Ethernet cable from the phone.
Step 2  If installed, remove the footstand from the phone.
Step 3  Locate the accessory connector covers on the side of the phone.
The following diagram shows the location of the accessory connector covers.

Step 4  Remove the two accessory connector covers.
The following diagram shows the removal of an accessory connector cover.
Attention The slots are designed for the spine connector only. Inserting other objects will cause permanent damage to the phone.

Step 5 Position the phone so that the front of the phone is facing up.

Step 6 Connect one end of the KEM spine connector to the accessory connector on the Cisco IP Phone.
   a) Align the spine connector with the accessory connector ports.
      Note Install the connector in the orientation shown in the following diagrams.

   b) Firmly press the spine connector into the phone.

The following diagram shows the spine connector.

The following diagram shows the installation of the spine connector.
Step 7 Connect the other end of the spine connector to the KEM as shown in the following figure.

a) Align the spine connector with the KEM accessory connector ports.

b) Firmly press the KEM into the spine connector.
The first KEM is now connected to the Cisco IP Phone.

**Step 8** Use a second KEM spine connector to connect the second KEM to the first KEM.

**Step 9** Use a third KEM spine connector to connect the third KEM to the second (middle) KEM. The following figure shows a Cisco IP Phone with three KEMs attached.

**Step 10** Use a screwdriver to fasten the screws into the phone and each KEM. This step ensures that the phone and KEMs remain connected at all times. The following diagram shows the location of the screw holes.
Note  Make sure that the screws are fully inserted into the phone and tightened.

**Step 11** (Optional) Install the footstands on the phone and on the KEMs, and adjust all footstands to rest evenly on the work surface.

**Step 12** Plug the Ethernet cable into the phone.

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**Set Up Key Expansion Module in Cisco Unified Communications Manager Administration**

During the Key Expansion Module setup, you can configure the KEM to display on one-column or two-column mode.
One-column mode

In one-column mode, each row in the display corresponds to one line, and this line can be accessed by either the button on the left or the button on the right. In this configuration, the Key Expansion Module displays 9 lines on page 1, and 9 lines on page 2. The following graphic shows the one-column mode.

Two-column mode

In two-column mode, each of the buttons on the left and right of the screen is assigned to different lines. In this configuration, the Key Expansion Module displays 18 lines on page 1, and 18 lines on page 2. The following graphic shows the two-column mode.
Note
If the label is longer than the display space in both one- and two-column mode, the text contains an ellipsis (…).

Procedure

Step 1
In Cisco Unified Communications Manager Administration, choose Device > Phone. The Find and List Phones window appears. You can search for one or more phones that you want to configure for the Cisco IP Phone 8800 Key Expansion Module.

Step 2
Select and enter your search criteria and click Find. The Find and List Phones window appears with a list of phones that match your search criteria.

Step 3
Click the phone that you want to configure for the Cisco IP Phone 8800 Key Expansion Module. The Phone Configuration window appears.

Step 4
Scroll down to the Expansion Module Information section on the right pane of the Phone Configuration window, and choose the appropriate expansion module (or “none”) for the Module 1, Module 2 and Module 3 fields, in that order.

Step 5
Be sure to select the phone button template (in the Device Information portion of the Phone Configuration window) that is configured to make full use of the KEMs attached to the phone.

Step 6
Depending on your requirements, enable the One Column Display for KEM field for one-column mode, or disable the field for two-column mode.

Step 7
Click Save.

Access Key Expansion Module Setup

After you install one or more KEMs on the phone and configure them in Cisco Unified Communications Manager Administration, the KEMs are automatically recognized by the phone.

When multiple KEMs are attached, they are numbered according to the order in which they connect to the phone:

• Key Expansion Module 1 is the KEM closest to the phone.
• Key Expansion Module 2 is the KEM in the middle.
• Key Expansion Module 3 is the KEM farthest to the right.

You can select a KEM, and then choose one of the following softkeys:

• Exit: Returns to the Applications menu.
• Details: Provides details about the selected KEM.
• Setup: Allows you to configure the brightness of the selected KEM. Setting the brightness can also be done using the Preferences menu on the phone.
Procedure

**Step 1** On the phone, press Applications.

**Step 2** Press Accessories.
All properly installed and configured KEMs display in the list of accessories.

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**Reset Key Expansion Module**

This procedure gives the steps for the Key Expansion Module factory reset.

**Procedure**

**Step 1** Power on the KEM, press Page 1, and do not release the key. When the LCD turns white, continue pressing Page 1 for at least one second.

**Step 2** Release Page 1; LEDs should turn red. Immediately press Page 2 and continue pressing Page 2 for at least one second.

**Step 3** Release Page 2; all LEDs should turn amber.

**Step 4** Press Lines 5, 14, 1, 18, 10, and 9 in sequence.
The LCD should turn blue, and the spinning loader icon displays in the center.
The KEM resets.

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**Troubleshoot the Key Expansion Module**

To obtain Key Expansion Module (KEM) troubleshooting information, follow these steps:

**Procedure**

**Step 1** Open a CLI.

**Step 2** Enter the following command to enter debug mode:
`debugsh`

**Step 3** Enter `?` to see all available commands and options.

**Step 4** Use the applicable commands and options to find the desired KEM information.

**Step 5** To exit debug mode, press `Ctrl-C`. 