



Your Phone

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The Cisco Wireless IP Phone 8821 and 8821-EX

The Cisco Wireless IP Phone 8821 and 8821-EX are 802.11 dual-band wireless devices that provide comprehensive voice communications in conjunction with Cisco Unified Communications Manager and with Cisco Aironet and Cisco Meraki access points (APs) in a private business communications network.



(注)

The Cisco Wireless IP Phone 8821-EX is not currently supported.

The phones provide voice communication over the same wireless LAN that your computer uses, allowing you to place and receive phone calls, put calls on hold, transfer calls, make conference calls, and so on. Both phones have Ingress Protection 67 (IP67) level protection, which indicates dust-tight equipment that is protected against water (see below).

The Cisco Wireless IP Phone 8821-EX is certified for Potentially Explosive Atmosphere ATEX Class I Zone 2, North America Class I Division 2/Zone 2. The phone is certified for use in potentially explosive (hazardous) environments where flammable gasses, vapors or liquids may be present for a short period of time or under abnormal conditions. The phone has an industry-standard yellow styling that offers fast recognition in emergency situations.

The following figure shows the Cisco Wireless IP Phone 8821 on the left and the Cisco Wireless IP Phone 8821-EX on the right.

☒ 1 : Cisco Wireless IP Phone 8821 and 8821-EX



These phones, like other network devices, must be configured and managed. The phones support G.711a, G.711u, G.722, G.729a, G.729ab, iLBC, and iSAC codecs. The phones also support uncompressed wideband (16 bits, 16 kHz) audio.

The phones are hearing aid compatible (HAC) but do not have any TTY features. They have ridges on the sides of the 5 key that is a tactile identifier.

The physical characteristics include:

- Resistance to damage from dropping the phone
- Tolerance of antibacterial and alcohol-based wipes
- Latex- and lead-free
- Shockproof and vibration-proof
- USB On-the-Go (OTG) 2.0 interface
- IP67 protection, which indicates dust-tight equipment that is protected against water (see below)
- Cisco Wireless IP Phone 8821-EX only:
 - Certified for use in Potentially Explosive Atmosphere:
 - ATEX Class I Zone 2
 - CSA Certified for Class I Division 2/Zone 2
 - Industry-standard yellow styling offers fast recognition in emergency situations.

In addition to basic call-handling features, your phone can provide enhanced productivity features that extend your call-handling capabilities.

Depending on the configuration, your phone supports:

- Use of Bluetooth wireless headsets, including certain hands-free call features
- Wireless access to your phone number and the corporate directory
- Access to network data, XML applications, and web-based services
- Online customizing of phone features and services from your Self Care portal

IP67 Information

The Cisco Wireless IP Phone 8821 and 8821-EX are tested under controlled laboratory conditions with a rating of IP67 under IEC standard 60529. Ingress Protection 67 (IP67) level protection indicates dust-tight equipment that is protected against water. Splash, water, and dust resistance are not permanent conditions, and resistance might decrease as a result of normal wear. Users are expected to take care of the phone and should not deliberately expose the device to a hostile environment of dust, splash, or water immersion.

To prevent device damage:

- Don't bathe or swim with the phone.
- Don't expose phone to pressurized water or high velocity water, such as when showering, cleaning, or hand washing.
- Don't use the phone in a sauna or steam room.
- Don't intentionally submerge phone in water.
- Don't operate the phone outside the suggested temperature ranges or in extremely humid, hot, or cold conditions.
- Don't store phones, batteries, and accessories outside the suggested temperature ranges or in extremely humid, hot, or cold conditions.
- Don't drop the phone or subject it to other impacts.
- Don't disassemble the phone; don't remove any screws.
- Don't use harsh cleaning agents like bleach and more to clean phone exterior
- Don't use a broken battery door or a battery door with a broken seal.

Minimize the exposure of your phone to soap, detergent, acids or acidic foods, and any liquids; for example, salt water, soapy water, pool water, perfume, insect repellent, lotions, sun screen, oil, adhesive remover, hair dye, soft drinks, and solvents. For more information, see [Care of Your Phone](#), (7 ページ) .


Buttons and Hardware












Your wireless phone has many buttons and hardware features that you will use regularly. Use the following figure and table to identify the important button and hardware features. The figure shows the Cisco Wireless








IP Phone 8821, but the Cisco Wireless IP Phone 8821-EX is similar in appearance. The table describes the functions of the keys on the phones.

図 2 : Cisco Wireless IP Phone 8821 Buttons and Hardware



Item	Name or Grouping	Description
1	Indicator light (LED) Headset port	<p>Indicator light—Use the light to identify states:</p> <ul style="list-style-type: none"> • Solid red—the phone is connected to the AC power source and battery is charging. • Solid green—the phone is connected to the AC power source and battery is fully charged. • Fast blinking amber—There is an incoming call. Phone can be charging or fully charged. • Fast blinking green—There is a voice message. When phone is connected to the AC power source, the green light displays longer than when using only the battery. • Slow blinking green (every 2 seconds): The phone is using only battery power. The phone is registered with the wireless network and is within service coverage area. <p>Headset port with cover  Remove the protective cover and plug in a headset or ear buds.</p>

Item	Name or Grouping	Description
2	Speaker button	Speaker  Toggle the speaker mode on or off for the phone.
3	Softkey buttons Navigation cluster Call control buttons	<p>Softkeys </p> <ul style="list-style-type: none"> • The More  softkey accesses a list of menus or functions. • The softkey activates the option displayed on the screen. <p>Navigation cluster  Navigation ring and Select button</p> <p>Navigation ring (outer ring):</p> <ul style="list-style-type: none"> • Move up, down, left, or right for these home screen apps: <ul style="list-style-type: none"> ◦ Recents  ◦ Contacts  ◦ Apps  ◦ Settings  • Scroll up and down menus to highlight options and to move left and right through phone numbers and text entries. <p>Select  button (center of the cluster):</p> <ul style="list-style-type: none"> • Make a call from the main screen. • Select a menu item, a softkey, a call, or an action. <p>Answer/Send  Answer a ringing call or, after dialing a number, place the call.</p> <p>Power/End Call  Turn the phone on or off, or end a connected call. When you use menus or when you are in an app, it acts as a shortcut to return to the main screen.</p>

Item	Name or Grouping	Description
4	Keypad	<p>Dial numbers, enter letters, and choose menu items by number.</p> <p>One (1) </p> <ul style="list-style-type: none"> • Enter “1” when you dial a number. • Access voicemail. Press and hold to automatically dial the voicemail system. • Enter these special text characters: / . @ : ; = ? - _ & % <p>Asterisk (*) </p> <ul style="list-style-type: none"> • Before you enter an international phone number, press and hold for a few seconds to add the plus (+) symbol to the phone number. • Enter these special text characters: + * ~ ` < > <p>Zero (0) </p> <ul style="list-style-type: none"> • Enter “0” when you dial a number. • Lock the keypad. • Enter a space or these special text characters: 0 , ! ^ ' " <p>Pound (#) </p> <ul style="list-style-type: none"> • Press to silence the phone ringer. If configured, the phone will vibrate instead. • Enter these special text characters: # \$ % & ' () { } []
5	Left Side Buttons	<p>Application  Use with XML applications, such as Push to Talk.</p> <p></p> <p>Volume</p> <ul style="list-style-type: none"> • When the phone is idle, change the ring volume or turn off the ringer. • When you have an incoming (ringing) call, press the button once to silence the ringer. • During a call, control the speaker volume for the active handset, headset, or speaker. • When the phone is docked in the desktop charger, control the volume of the charger speaker. <p>Mute  Toggle the mute feature on or off.</p>

Startup Sequence

When a wireless phone powers up, the startup sequence is:

- 1 The red LED lights up.
- 2 The phone loads the firmware image that is stored in nonvolatile memory.
- 3 The screen turns on.
- 4 The phone scans for an access point.
- 5 The phone authenticates with the access point.
- 6 The phone connects with the Cisco Unified Communications Manager. If necessary, the phone obtains an updated firmware load and configuration file.

Care of Your Phone

You can clean your phone. Make sure you follow our cleaning instructions.

Clean your phone immediately if it comes in contact with anything that may cause stains, or other damage; for example, dirt or sand, ink, makeup, soap, detergent, acids, acidic foods, or lotions.

If you happen to drop the phone into water, or it gets splashed, you need to dry off the phone using our instructions. See [If You Drop Your Phone in Water](#), (8 ページ) .

Clean the Phone Exterior

You can clean the phone exterior using a dry, lint-free cloth. For the health-care environment, we recommend that you use Caviwipes™ and Saniwipes™ to thoroughly clean the phone. Caviwipes and Saniwipes contain up to 17% isopropanol.

Any cleaning solution containing a higher amount of isopropanol, including pure isopropanol, or an alternative alcohol-based liquid could potentially damage the phone. Do not clean the phone with bleach or other caustic products.

Excessive use of Caviwipes and Saniwipes more than 3 times a day will damage the phone surface coating and will change the appearance of phone.

Clean your phone immediately if it comes in contact with anything that may cause stains, or other damage; for example, dirt or sand, ink, makeup, soap, detergent, acids, acidic foods, or lotions.



注意

Do not use compressed air to clean the openings of the phone. The air can damage the phone and voids the phone warranty.

手順

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- ステップ 1 Remove the phone from the charger or unplug it from the charging cable.
- ステップ 2 If the phone is in a protective case, remove the phone from the case.
- ステップ 3 Wipe the phone and screen with a soft, lint-free cloth.
-

If You Drop Your Phone in Water

If you drop your phone in water, here's what you do:

- *Gently* shake the water off the phone.
- Dry the phone with a soft, dry, lint-free cloth.
- Leave your phone in a dry area with some air flow; for example, a fan blowing *cool* air can be directed onto the phone speaker grill to help the phone dry out.

Here are some things you don't do:

- Don't open the battery door while the phone is wet.
- Don't use compressed air to blow off the water.
- Don't use a hair dryer to dry off the phone.
- Don't put a cotton swab, paper towel, or cloth into the headset jack or inside the battery compartment.
- Don't tap the phone on a hard surface.
- Don't charge a wet phone using the charging cable. You must wait until the phone is completely dry.
- Don't put a wet phone into the desktop charger, or multicharger. You must wait until the phone is completely dry.



注意

To ensure that the phone does not get water into the battery compartment, make sure that the compartment is tightly closed. See [Install the Phone Battery](#).

If the sound is muffled after you dry the phone, there may still be water in the microphone or speaker compartments. Place your phone, speaker-side down, on a dry, lint-free cloth to see if water drips out. If there is still water in the phone, allow the phone to completely dry before you use it.

Best Practices for Battery Power Conservation

The Cisco Wireless IP Phone 8821 and 8821-EX has a 2060-mAh smart battery. The battery capacity is reduced to 80% after 500 full charging cycles (charging from empty to full). The battery life also depends on the phone state and AP scanning configuration.

表 1 : *Battery Life*

Call State	Scan Mode	Expected Battery Time
On Call	Continuous	Up to 13 hours
	Auto	Up to 13 hours
Idle	Continuous	Up to 48 hours
	Auto	Up to 170 hours

Follow these best practices to ensure that the phone conserves battery power.

User Actions

Remind your users that the battery life is reduced when the phone is turned on. Calls, messages, application use, Bluetooth use, and actions like menu navigation use power.

Users should ensure that the phone remains in a good RF coverage area and that the phone can maintain a constant connection to the Cisco Unified Communications Manager. If the phone moves out of range and remains out of range for a significant time, battery life can be reduced.

For more information about RF coverage, see [Cisco Wireless IP Phone 882x Deployment Guide](#).

Phone Configuration

Configure the Scan mode field in Cisco Unified Communications Manager to suit your enterprise. The phone supports Continuous, Auto, and Single AP scanning, where Continuous is the default. The configured scan mode determines the battery life baseline.

- Continuous scan mode is designed for phone users that are constantly on the move and for whom frequent roaming events occur. This mode maximizes performance and connectivity, but at the expense of battery power.
- Auto scan mode is designed for phone users that only roam occasionally, and who require more idle battery life than Continuous scan mode can offer.
- Single AP scan mode is designed for phone users that do not roam and require maximum idle battery life.

Access Point Configuration

- For optimal idle battery life, we recommend that you use an access point that supports the Cisco Compatible Extensions (CCX) Proxy ARP feature. CCX Proxy ARP allows the phone to remain in suspend mode longer instead of waking up at each DTIM period. This reduces power consumption.

The Cisco Lightweight Access Points and Cisco Autonomous Access Points support CCX Proxy ARP, but Cisco Meraki Access Points do not.

For Cisco Lightweight Access Points, CCX Proxy ARP is enabled by default and nonconfigurable. For Cisco Autonomous Access Points, CCX Proxy ARP is disabled by default, but can be enabled with the dot11 arp-cache optional command.

If the access point does not support CCX Proxy ARP, then the phone must wake up at each DTIM period. Frequent wakeups can reduce the idle battery life by as much as 50%.

- We recommend that you use an access point that supports the Cisco Compatible Extensions (CCX) Dynamic Transmit Power Control (DTPC) feature. When DTPC is enabled, the access point advertises its transmit power to all clients. The phone adjusts its transmit power to the minimum level necessary to communicate with the access point. A lower transmit power reduces unnecessary noise in other areas.
- Limit the use of multicast. If the phone subscribes to a multicast stream, it wakes up at each DTIM period to receive multicast frames. Frequent wake-ups cause power consumption to increase.
- Select an access point that supports U-APSD. This power save protocol is used when on call and when idle.
 - The On Call Power Save field in the Wi-Fi Profile should remain enabled so that the phone can use U-APSD.
 - If the On Call Power Save field is disabled, then the phone uses active mode when on call, but uses U-APSD when in idle mode.

Only disable On Call Power Save for troubleshooting purposes.

New and Changed Information

Changes for Firmware Release 11.0(3)

The following table contains the information that was added or changed in this book for this firmware release.

Feature	Updates
FIPS 140-2 Level 1 Support	Product Specific Configuration Fields Enable FIPS Mode
Power Saving Enhancements	Best Practices for Battery Power Conservation, (8 ページ)

Phone Firmware

The factory installs a version of the phone firmware on the phone during manufacturing. But that firmware may not be the latest firmware version.

Your Cisco Unified Communications Manager stores the firmware loads. If the version of firmware on the phone is not the latest version, the Cisco Unified Communications Manager sends the updated firmware load to the phone.

Device Packs

The Cisco Unified Communication Manager Device Pack contains device configuration capabilities for the phones. Many phone features require the latest device package to be installed on the Cisco Unified Communications Manager. If you do not install the device pack, the new phone features do not work.

A device pack introduces new phone types to Cisco Unified Communication Manager. The pack installs the firmware and the configuration files needed to enable features on your phone. New features may be turned off by default and they have attributes or settings that must be configured.

To find which device packs are available for your Cisco Unified Communications Manager version and phone, go to: http://www.cisco.com/c/en/us/td/docs/voice_ip_comm/cucm/compat/devpack_comp_mtx.html

Phone Configuration Files

Configuration files for a phone are stored on the TFTP server and define parameters for connecting to Cisco Unified Communications Manager. In general, any time you make a change in Cisco Unified Communications Manager that requires the phone to be reset, a change is automatically made to the phone configuration file.

Configuration files also contain information about which image load the phone should be running. If this image load differs from the one currently loaded on a phone, the phone contacts the TFTP server to request the required load files.

If you configure security-related settings in Cisco Unified Communications Manager Administration, the phone configuration file will contain sensitive information. To ensure the privacy of a configuration file, you must configure it for encryption. For more information, see the documentation for your particular Cisco Unified Communications Manager release. A phone requests a configuration file whenever it resets and registers with Cisco Unified Communications Manager.

A phone accesses a default configuration file named XmlDefault.cnf.xml from the TFTP server when the following conditions exist:

- You have enabled autoregistration in Cisco Unified Communications Manager
- The phone has not been added to the Cisco Unified Communications Manager database
- The phone is registering for the first time

Related Documentation

Use the following sections to obtain related information.

Cisco Wireless IP Phone 882x Series Documentation

Refer to publications that are specific to your language, phone model, and call control system. Navigate from the following documentation URL:

<http://www.cisco.com/c/en/us/support/collaboration-endpoints/unified-ip-phone-8800-series/tsd-products-support-series-home.html>

The Deployment Guide is located at the following URL:

<http://www.cisco.com/c/en/us/support/collaboration-endpoints/unified-ip-phone-8800-series/products-implementation-design-guides-list.html>

Cisco Unified Communications Manager Documentation

See the *Cisco Unified Communications Manager Documentation Guide* and other publications that are specific to your Cisco Unified Communications Manager release. Navigate from the following documentation URL:

<http://www.cisco.com/c/en/us/support/unified-communications/unified-communications-manager-callmanager/tsd-products-support-series-home.html>

Cisco Unified Communications Manager Express Documentation

See the publications that are specific to your language, phone model and Cisco Unified Communications Manager Express release. Navigate from the following documentation URL:

<http://www.cisco.com/c/en/us/support/unified-communications/unified-communications-manager-express/tsd-products-support-series-home.html>

Cisco Business Edition 6000 Documentation

Refer to the *Cisco Business Edition 6000 Documentation Guide* and other publications that are specific to your Cisco Business Edition 6000 release. Navigate from the following URL:

<http://www.cisco.com/c/en/us/support/unified-communications/business-edition-6000/tsd-products-support-series-home.html>

Documentation, Support, and Security Guidelines

For information on obtaining documentation, obtaining support, providing documentation feedback, reviewing security guidelines, and also recommended aliases and general Cisco documents, see the monthly *What's New in Cisco Product Documentation*, which also lists all new and revised Cisco technical documentation, at:

<http://www.cisco.com/en/US/docs/general/whatsnew/whatsnew.html>

Subscribe to the *What's New in Cisco Product Documentation* as a Really Simple Syndication (RSS) feed and set content to be delivered directly to your desktop using a reader application. The RSS feeds are a free service and Cisco currently supports RSS Version 2.0.

Cisco IP Phone User Support

If you are a system administrator, you are likely the primary source of information for Cisco IP Phone users in your network or company. It is important to provide current and thorough information to end users.

To successfully use some of the features on the Cisco IP Phone (including Speed Dial, Services, and voice message system options), users must receive information from you or from your network team or must be able to contact you for assistance. Make sure to provide users with the names of people to contact for assistance and with instructions for contacting those people.

We recommend that you create a web page on your internal support site that provides end users with important information about their Cisco IP Phones.

Consider including the following types of information on this site:

- user guides for all Cisco IP Phone models that you support
- information on how to access the Cisco Unified Communications Self Care Portal
- list of features supported
- user guide or quick reference for your voicemail system

