

Planning your Cisco Headset Wireless Deployment

Cisco Headset 700 Series deployment options

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Cisco offers a range of wireless, DECT, and Bluetooth® headsets that connect to your desk IP phones, softphones, or mobile devices. They provide a stable connection enabling workers to stay focused on the work at hand while offering a great mobile audio experience. By combining with the market-leading Cisco® Unified Communications (UC) architecture, Cisco Headsets offer advanced integrated manageability functions unlike any other in market today.

While wireless headsets can help increase workplace productivity, incorrectly deploying wireless headsets can have the opposite affect and significantly increase the frustrations of staying connected. This white paper is intended to help you to understand the different wireless technologies and provide general guidance on how to deploy the Cisco Headset 700 Series and the Cisco Headset 500 or 300 Series together. However, this white paper is not intended to replace our existing Cisco Headset 560 DECT deployment guide. For more information on Cisco 560 DECT deployments, please refer to the DECT deployment options for the Cisco Headset 560 Series: cs.co/dect.

Deployment guidance for Bang & Olufsen Cisco 980 headset coming soon.

Bluetooth® versus DECT

Workplace transformation is happening everywhere, across all industries and countries. The way we work is rapidly changing in this globally connected environment with an expansion of devices utilized. New ways of collaborating are at the core of the transformation.

When evaluating headsets. it is important to consider several factors such as:

- Location requirements: Will the headset be used exclusively in a traditional work office, a remote home office, or both?
- Density: Will this be in an office with many other headsets, or hardly any?
- Range: How far is the person expected to roam away from the endpoint they are paired to?
- Mobility (smartphone): Is headset connectivity required on the go?
- Potential interference: Physical characteristics of the building itself are important such as floorplan, material in walls, etc. Likewise, so is co-existence with wireless access points, other Bluetooth devices, etc.

Table 1. Key differences between Bluetooth and DECT

Type	Bluetooth (Cisco Headset 730, 720)	DECT (Cisco Headset 560)
Frequency	2.4 GHz	1.9 GHz
Co-existence with Wi-Fi (2.4 GHz)	Interferes at 2.4 GHz	No interference
Mobility	Pairs with smartphone or 3.5mm	Multibase pairs with smartphone
Density	Deployment scenarios are included later in this paper	Three density modes (see cs.co/dect)
Talk time	20-23 hours with noise cancellation (730) 23-25 hours without noise cancellation	10 hours

Introduction to Bluetooth and the Cisco Headset 730 and 720 Series

The Cisco Headset 730 and 720 Series are wireless headsets that use Bluetooth 5.0. The Cisco Headset 730 and 720 Series ship with an optional USB HD adapter. You can pair the Cisco Headsets to devices using the native Bluetooth built into the PC. Alternatively, you can use the USB HD adapter that has been pre-paired with a headset for a quick plug-and-play experience. There are also optional charging stand accessories for the Cisco Headset 730 and 720 Series. However, the charging stands do not utilize radio technology to send and receive audio signals with the headsets, and are only used for power charging only.

The Cisco Headset 560 Series uses DECT between the base station and the headset, they are not discussed in this document. They do allow Bluetooth pairing to a mobile phone, but the base only connects to the headset via DECT.

The challenges

Too many headsets in a confined space can generate radio interference that result in a poor audio experience. Advanced planning is highly recommended before deploying a lot headsets in a limited space.

Facts about Bluetooth density

When multiple Bluetooth devices operate in close proximity, they share the radio spectrum which can result in interference between devices. Headset density defines the number of headsets that can be used simultaneously in each area without interference. It's critical to plan headset density for a given area in advance to guarantee a successful deployment.

Bluetooth technology is based on an unlicensed radio frequency band and there are many environmental variables that play parts in determining its quality. Following is only a short list of them:

- Average distance between headsets
- Call utilization (the amount of time in which the headsets are in a call)
- Wi-Fi deployment and configuration
- Roaming range (mobility)
- Office size and layout
- Office furnishings - furniture, walls, dividers, carpets, curtains, metal objects, glass surfaces, etc.

Table 2 outlines some examples of different materials and their radio attenuation.

Table 2. Radio attenuation of different materials

Material	Attenuation	Example
Wood	Low	Door, floor
Plastic	Low	Partition
Glass	Low	Un-tinted windows, partition
Tinted glass	Medium	Tinted windows, partition
Living objects	Medium	Crowds, plants
Bricks	Medium	Walls
Ceramic	High	Tiles
Concrete	High	Walls, floors, pillars
Metal	Very high	Metal cabinet

Following are some general suggestions for positioning Bluetooth headsets:

- Deploy as evenly as possible in each area to ensure the distance between the headsets for least interference. Cisco recommends a minimum of 1.2 meters (4 feet) between headsets.
- Every deployment is unique so reach out to your Cisco representative to guide you through the specifics of your deployment.

Cisco Headset 730 and 720 Series deployment planning

Appropriate planning is key to a successful deployment. This section covers the steps on helping you plan your deployment.

Step 1. Cisco wireless headsets are a part of a larger Cisco UC and Collaboration experience. To get the best experience possible, make sure the minimum system requirements are met.

Table 3. System requirements

Name	Version
Cisco Headset 730 / 720 Series	Latest software version recommended
Cisco Control Hub	All version support basic audio, upgrades, and management
Cisco Unified Communications Manager	All versions support basic audio. Upgrades and management require 11.5(1)SU7+ or 12.5 (1)SU1+
Cisco IP Phone 7800 & 8800 Series	Latest software version recommended
Cisco Jabber® - Desktop	Latest software version recommended

Name	Version
Cisco Desk Series	Latest software version recommended
Webex App (Windows or Mac)	Current

Step 2. Step 2. Familiarize yourself with how to adjust the headsets' settings that can impact your deployment.

Step 3. Step 3. Survey the space where the Bluetooth headsets will be deployed.

- Identify the floor layout
- Find the size of the space, width, and length
- Mark any obstacles, e.g. metal object, large glass surfaces, etc., and remove them if possible
- Locate any potential interference sources, e.g. other 2.4 GHz sources being utilized on adjacent floors
- Stage the deployment on the floor layout
- Identify Bluetooth interference sources in the environment
- Consider the Bluetooth-class of headsets to be deployed. If the range of reception is a major factor, Bluetooth class-1 devices for best reception range

Table 4. Factors to consider

Factor	Description
Wi-Fi and Bluetooth traffic in 2.4-Ghz band	Devices in close proximity competing for RF channels in the 2.4-Ghz band may reduce Cisco Headset deployment densities. Unfortunately, such devices are common in businesses. They include Wi-Fi access points, laptops, keyboards and mice, mobile phones, and IoT devices, all of which take up available bandwidth.
Clutter	Room furniture, materials, and office equipment around the headsets can all reduce RF transmission ranges of Bluetooth devices.
Room layout	Walls, glass, ceiling materials, hallways and can result in more RF reflections (and thus noise) in the 2.4-Ghz band. The factors may reduce Bluetooth density.

Step 4. Prepare headset training material for end users based on your deployment goal. For more information:

- [Get started with your Cisco Headset 730](#)
- [Get started with your Cisco Headset 720 Series](#)
- [Cisco Headset Administration Guide](#)

Typical deployment scenarios

Deployment recommendations vary based upon end user requirements. This section provides recommendations based upon three typical workspaces: 500 square meters, 1000 square meters, and 1500 square meters. The recommendations are based upon mobility, the size of the office, and the total number of active users. Most deployments fall into one of these three workspaces and further adjustments can be made to accommodate variations.

Deployment option A: Deploying only Cisco Headset 730 and 720 Series

If you want to maximize the number of deployed Bluetooth headsets, use the recommendation outlined in Table 5.

Note: This recommendation does not account for Wi-Fi interference or other interferences in the 2.4-GHz frequency. Cisco recommends using the results of the site survey to determine interference locations and evaluate all the deployment options listed in this guide, inclusive of DECT before a production deployment.

Table 5. Recommendation for only deploying the Headset 730

Table 5. Recommendation for deploying only the Headset 730 and 720 Series

Area in square meters	Maximum number of headsets	Minimum spacing between headsets [meters]
500	Up to 75	1.2 m for deployment of less than 38 headsets 2.6 m for deployment of 38 to 75 headsets
1000	Up to 110	3.0 m for deployment of 76 to 110 headsets
1500	Up to 150	3.2 m for deployment of 110 to 150 headsets

Deployment option B: Mixed deployment of Cisco Headset 730/720 Series + Cisco Headset 500 Series

If you want to deploy more headsets in a given area than specified in Table 5, we recommend layering or interweaving the wired Cisco Headset 320, 520 and/or 530 Series with the Cisco Headset 730/720.

Alternatively, you can deploy the wireless, DECT Cisco Headset 560 in the same area as Cisco Headset 730/720 without any interference. Please consult the Cisco Headset 560 DECT deployment guide for details: cs.co/dect.

Why Cisco

Cisco Headsets are designed from their inception with superior audio quality and integrated management and serviceability. All Cisco Headsets are deeply integrated into the market-leading Cisco Unified Communications architecture.

On the front end, Cisco Headsets work with other Cisco devices, such as IP phones, desktop video devices, and Cisco soft clients, such as Cisco Jabber and the Webex App. On the back end, Cisco Headsets are provisioned, configured, managed, and serviced by Cisco Unified Communications Manager or Webex Control Hub. For more details, visit the [Cisco Headset Series Administration Guides](#).

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