



Cisco USB BLE Beacon Installation Guide

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Preface

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Audience

This document is for network administrators who configure Cisco Connected Mobile Experiences (Cisco CMX) services.

Conventions

This document uses the following conventions:

Table 1: Conventions

Convention	Indication
bold font	Commands and keywords and user-entered text appear in bold font .
<i>italic font</i>	Document titles, new or emphasized terms, and arguments for which you supply values are in <i>italic font</i> .
[]	Elements in square brackets are optional.
{x y z }	Required alternative keywords are grouped in braces and separated by vertical bars.
[x y z]	Optional alternative keywords are grouped in brackets and separated by vertical bars.
string	A nonquoted set of characters. Do not use quotation marks around the string. Otherwise, the string will include the quotation marks.
<code>courier font</code>	Terminal sessions and information the system displays appear in <code>courier font</code> .
< >	Nonprinting characters such as passwords are in angle brackets.
[]	Default responses to system prompts are in square brackets.

Convention	Indication
!, #	An exclamation point (!) or a pound sign (#) at the beginning of a line of code indicates a comment line.

**Note**

Means reader take note. Notes contain helpful suggestions or references to material not covered in the manual.

**Tip**

Means the following information will help you solve a problem.

**Caution**

Means reader be careful. In this situation, you might perform an action that could result in equipment damage or loss of data.

Related Documentation

For more information on coding and specific assistance, see:

<https://developer.cisco.com/site/cmx-mobility-services/>

For more information about Cisco Mobility Services Engine and related products, see:

<http://www.cisco.com/c/en/us/support/wireless/mobility-services-engine/tsd-products-support-series-home.html>

For more information about Cisco Connected Mobile Experiences (Cisco CMX), see:

<http://www.cisco.com/c/en/us/solutions/enterprise-networks/connected-mobile-experiences/index.html>

For more information about Cisco DNA Spaces, see:

<https://support.dnaspaces.io/>

Communications, Services, and Additional Information

- To receive timely, relevant information from Cisco, sign up at [Cisco Profile Manager](#).
- To get the business impact you're looking for with the technologies that matter, visit [Cisco Services](#).
- To submit a service request, visit [Cisco Support](#).
- To discover and browse secure, validated enterprise-class apps, products, solutions and services, visit [Cisco Marketplace](#).
- To obtain general networking, training, and certification titles, visit [Cisco Press](#).
- To find warranty information for a specific product or product family, access [Cisco Warranty Finder](#).

Cisco Bug Search Tool

[Cisco Bug Search Tool](#) (BST) is a web-based tool that acts as a gateway to the Cisco bug tracking system that maintains a comprehensive list of defects and vulnerabilities in Cisco products and software. BST provides you with detailed defect information about your products and software.



CHAPTER 1

Overview of Cisco USB BLE Beacon

Cisco USB Bluetooth Low-Energy (BLE) Beacon is a USB-compatible device for use with the Cisco Aironet 1830/1850/2800/3800 Series Access Points (APs) and provides the BLE beacon functionality. Cisco USB BLE Beacon expands the Cisco Aironet 1800, 2800, and 3800 Series Wave 2 11ac AP platforms to add BLE radio capability.

Cisco USB BLE Beacon offers an end-to-end BLE solution for APs that do not have the BLE capability, and is a cost-effective way of adding this capacity to the AP network. The addition of a BLE radio enables the AP with additional functionalities, including the ability to transmit a BLE Beacon for Proximity Messaging and Wayfinding and the ability to receive a BLE Beacon for asset-tracking applications.

Cisco USB BLE Beacon is managed by Cisco Digital Network Architecture (DNA) Spaces and supported as part of the Cisco DNA Spaces ACT license. The Cisco DNA Spaces-BLE Manager application allows you to control both the receiving and transmitting capabilities of the Cisco USB BLE Beacon. As a transmitter, the Cisco USB BLE Beacon provides the capability to transmit in an iBeacon, Eddystone URL, or Eddystone UID format. Similarly, as a receiver, the Cisco USB BLE Beacon can receive packets in iBeacon, Eddystone URL, or Eddystone UID format.

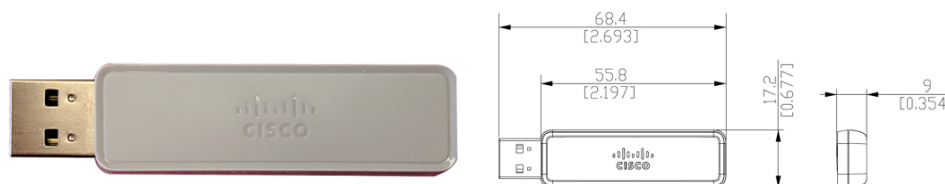
Cisco USB BLE Beacon has a MAC address, with the QR code representing the MAC address printed or labeled on the outer casing.

- [Product Information, on page 1](#)
- [Software Requirement, on page 2](#)
- [Cisco USB BLE Beacon as a Solution, on page 2](#)

Product Information

Cisco USB BLE Beacon can be ordered in pack of 10 or pack of 50.

Figure 1: Cisco USB BLE Beacon



Part Number	Description
AIR-BLE-USB-10	Cisco USB BLE Beacon 10 Pack
AIR-BLE-USB-50	Cisco USB BLE Beacon 5 x 10 Pack = Total QTY = 50

Platform Support

Cisco USB BLE Beacon can be added to Cisco APs that have a USB slot and support the correct software.

Table 2: Platform Support

Product Family	Platforms Supported	Cisco IOS Software
Cisco Aironet 1800 Series	1830 and 1850 Series	Cisco Wireless Controller 8.8MR2 or later
Cisco Aironet 2800 Series	All models	Cisco Wireless Controller 8.8MR2 or later
Cisco Aironet 3800 Series	All models	Cisco Wireless Controller 8.8MR2 or later

Software Requirement

Cisco USB BLE Beacon is supported in the USB slot of Cisco AP 1830/1850/2800/3800 Series. Cisco USB BLE Beacon identifies and authenticates with the connected AP. The connected host AP provides Cisco USB BLE Beacon adequate power to turn on and communicate with the host AP. Cisco USB BLE Beacon relies on the AP for power and data communication path. Cisco USB BLE Beacon can pass relevant telemetry data back to the AP or the controller for managing purpose.

Cisco USB BLE Beacon as a Solution

A cloud-managed and integrated Cisco USB BLE Beacon provides enterprise customers with a set of superior BLE capabilities. An AP-based BLE beacon provides all the native capabilities of BLE, including the capability to invoke applications that subscribe to the iBeacon and to be used to aid indoor navigation without the burden of using battery power.

The advantages of cloud-managed AP-powered BLE beacons are:

- **Ease of configuration at scale**—Manage thousands of BLE beacons at scale just as easily as you can manage APs at scale
- **AP powered**—Since the USB BLE beacon takes power from the AP, there are no issues related to power management on the beacons
- **Reduced chance of theft or movement of the beacon**—Because the beacon is a part of the wireless AP infrastructure, there is a much smaller chance of the beacon being lost or removed



CHAPTER 2

Installation and Initial Setup

- [Prerequisites for Cisco USB BLE Beacon Installation, on page 3](#)
- [Supported Hardware, on page 3](#)
- [Installation Guidelines, on page 4](#)
- [Installing the Cisco USB BLE Beacon, on page 4](#)
- [Importing Maps from Cisco Prime Infrastructure, on page 4](#)
- [Managing Cisco CMX for Cisco USB BLE Beacon Configurations, on page 5](#)
- [Establishing the Connection Between Cisco CMX and Cisco DNA Spaces BLE Manager, on page 6](#)
- [Configuring a Cisco USB BLE Beacon Profile, on page 6](#)

Prerequisites for Cisco USB BLE Beacon Installation

- A Cisco Wireless Controller should be deployed in your network, and APs should be added to the controller.
- A Cisco CMX device should be deployed and installed with Cisco CMX Release 10.6, and should be reachable from the cloud.
- Cisco CMX should have maps imported from Cisco Prime Infrastructure 3.6.
- Cisco DNA Spaces BLE Manager should be deployed.



Note Cisco DNA Spaces BLE Manager solution deployment is similar to the Hyperlocation feature deployment. For more information, see the [Hyperlocation Deployment Guide](#).

Supported Hardware

The following table lists the hardware guidelines for Cisco USB BLE Beacon installation.

Table 3: Hardware Support

Device Supported	Version
Cisco Wireless Controller 3504, 5520, 8540	8.8 MR2 released build
Cisco CMX	10.6 or later
Cisco Prime Infrastructure	3.6 or later Note Use Cisco PI to export maps.
Cisco DNA Spaces BLE Manager	Cloud Service

Installation Guidelines

The following is a list of installation guidelines pertaining to Cisco USB BLE Beacon:

- It is compatible with AP 1830/1850/2800/3800 USB port.
- It can be plugged into an AP's USB port without removing the AP from the ceiling.
- It does not restrict access to the mGig and other available ports on the AP 3800 when mounted.
- It generates omni-directional antenna pattern or coverage when plugged into an AP.

Installing the Cisco USB BLE Beacon

-
- Step 1** Power off the corresponding AP and disable the Power over Ethernet (PoE).
- Step 2** Plug the Cisco USB BLE Beacon into the USB port of the AP.
- Step 3** Power on the AP and enable the PoE. Note that you must wait until the AP has re-established the connection with the controller until you proceed to next step.
- Step 4** Log in to the controller GUI.
- Step 5** Choose **Wireless > Access Points > All APs**.
- Step 6** Select the AP with the Cisco USB BLE Beacon installed.
- Step 7** Click the **Inventory** tab.
- Step 8** In the **USB Module Inventory** area, verify the USB module details. (We recommend that you perform the USB module verification for all the APs with Cisco USB BLE Beacons.)
-

Importing Maps from Cisco Prime Infrastructure

Cisco CMX relies on maps from Cisco Prime Infrastructure for AP information. Cisco Prime Infrastructure 3.6 is required for supporting Cisco USB BLE Beacon configuration.

To obtain maps for Cisco CMX, you have to export maps from Cisco Prime Infrastructure. Cisco CMX needs the heatmaps of the Cisco USB BLE Beacon antennas for managing the beacons.

Ensure that the controller managing the APs with Cisco USB BLE Beacon is up-to-date with the AP and antenna names.

-
- Step 1** Log in to Cisco Prime Infrastructure.
 - Step 2** Choose **Monitor > Managed Elements > Network Devices**.
 - Step 3** In the **Device Groups** area, choose **Device Type > Wireless Controller**.
 - Step 4** Select the controller that manages the AP installed with the Cisco USB BLE Beacon.
 - Step 5** Click the **Sync** tab to synchronize and update the AP information.
 - Step 6** Choose **Maps > Wireless Maps > Site Maps (New)**.
 - Step 7** Select the floor (with the APs) in which you added the Cisco USB BLE Beacon.
 - Step 8** Select the AP on the map and verify in the **BLE** tab to see if **Antenna Name** displays the Cisco USB BLE Beacon details.
 - Step 9** Export the maps as map archive. For more information, see the ["Export Maps Archive"](#) section in the Cisco Prime Infrastructure 3.5 User Guide.
 - Step 10** Import the maps into Cisco CMX. For more information, see the ["Importing Maps"](#) section in the Cisco CMX Configuration Guide.
-

Managing Cisco CMX for Cisco USB BLE Beacon Configurations

After you install a Cisco USB BLE Beacon into an AP, you need to perform specific tasks to complete the software configuration.

Before you begin

For a Cisco USB BLE Beacon to work with Cisco CMX, you should enable Hyperlocation on Cisco CMX. For more information, see the [Hyperlocation Deployment Guide](#).

-
- Step 1** Log in to Cisco Connected Mobile Experiences (Cisco CMX).
 - Step 2** Choose **System > Dashboard**.
The **System at a Glance** window is displayed.
 - Step 3** Click **Settings** at the top-right corner of the window. The **SETTINGS** window is displayed.
Note By default, the **Tracking Parameters** tab is displayed.
 - Step 4** To enable tracking for BLE tags, click **BLE Tags**.
Note Besides acting as iBeacon or Eddystone, BLE radio can track BLE tags and beacons too. However, this capability is at an early stage and accuracy might not be good.
 - Step 5** Click **Save**.

- Step 6** Click the **DETECT & LOCATE** tab.
 - Step 7** Using the left pane of the **Activity Map** window, navigate to the corresponding building and floor.
 - Step 8** Click the **Access Points** icon to show or hide all the APs that have been deployed on a specific floor.
 - Step 9** Select the AP with the Cisco USB BLE Beacon installed and then view the AP details.
 - Step 10** Verify if the **Antenna Device Type** displays the Cisco USB BLE Beacon details.
- If the Cisco USB BLE Beacon information is not displayed, we recommend that you power off and power on the AP and wait until the AP rejoins the controller.

Establishing the Connection Between Cisco CMX and Cisco DNA Spaces BLE Manager

Cisco DNA Spaces BLE Manager is a cloud-based service provided with the purchase of Cisco APs. Cisco DNA Spaces BLE Manager works in conjunction with Cisco CMX and the controllers that are deployed in your network.

Cisco CMX connects with Cisco DNA Spaces BLE Manager using HTTPS.

Cisco DNA Spaces BLE Manager requires the HTTP_PROXY. You must set the NO_PROXY environment variable to point to 127.0.0.1 or localhost. For more information, see the Cisco DNA Spaces-BLE Manager guide at:

<https://www.cisco.com/c/en/us/support/wireless/dna-spaces/products-installation-and-configuration-guides-list.html>.

- Step 1** Log in to [Cisco DNA Spaces BLE Manager](#).
- Step 2** On the Cisco DNA Spaces BLE Manager dashboard, click **Setup**.
- Step 3** Click the key icon to generate a token.
- Step 4** Copy and save the token. (Note that the **Gateway** status at this point, is Down.)
- Step 5** Log in to Cisco CMX.
- Step 6** Choose **MANAGE > Cloud Apps**.
- Step 7** Click **Enable** to enable Cisco DNA Spaces BLE Manager.
- Step 8** In the dialog box that is displayed, enter the token that was generated, to enable Cisco DNA Spaces BLE Manager.
- Step 9** Verify if the connection between Cisco CMX and Cisco DNA Spaces BLE Manager has been established. On the Cisco DNA Spaces BLE Manager dashboard, IP address is shown as Active, and the **Notification** status and **Gateway** status are shown as UP.

Configuring a Cisco USB BLE Beacon Profile

Cisco USB BLE Beacon adds a BLE RX/TX radio to the Cisco Aironet 1830/1850/2800/3800 Series Access Points.

Cisco USB BLE Beacon firmware supports different profiles. Profiles are the different bluetooth signals in approved formats.



Note Only one profile can be active at a time.

The supported beacon profiles for an AP's BLE firmware are:

- iBeacon
- Eddystone UID
- Eddystone URL
- Location (viBeacon)

For more information about profiles, see the Cisco DNA Spaces-BLE Manager configuration guide at: <https://www.cisco.com/c/en/us/support/wireless/dna-spaces/products-installation-and-configuration-guides-list.html>

Step 1 Log in to [Cisco DNA Spaces BLE Manager](#).

Step 2 Choose **Physical Beacons > AP Beacons**.

The **AP Beacons** window displays the **Beacon Status**, **MAC Address**, **Beacon ID**, **Profile Type**, and **Location** details. Hover your cursor over the Profile Type information icon to view a message that an AP can broadcast only as iBeacon, Eddystone_URL, Eddystone_UID, or viBeacon.

Step 3 Select the AP with the Cisco USB BLE Beacon installed and click MAC address.

The **Overview** tab displays the beacon details.

Step 4 Click the **Edit** tab.

Step 5 Select the beacon profile from the **AP Beacon** drop-down list.

- To configure the Cisco USB BLE Beacon as iBeacon, select **iBeacon** from the drop-down list and enter the required information.
- To configure the Cisco USB BLE Beacon as Eddystone UID or URL, select the corresponding profile from the drop-down list and enter the required information.

Step 6 Click **Save**.



CHAPTER 3

Technical Specifications

This chapter contains information about the technical specifications of the Cisco USB BLE Beacon.

- [AIR-BLE-USB Technical Specifications, on page 9](#)
- [Performance and Scale Requirements, on page 10](#)

AIR-BLE-USB Technical Specifications

Table 4: Technical Specifications

BLE Standard	4.2
Maximum Transmit power	5 dBm
Operating Temperature	-20° to +50°C (-4° to 122°F)
Operating Humidity	10% to 90% (noncondensing)
Non-Operation Temperature	-30° to 70°C (-22° to 158°F)
Operation Altitude	3000 meters (9850 ft)
System Power	0.085 W
Dimensions (H x W x L)	0.68 x 0.36 x 2.2 inches (17.2 x 9.0 x 55.8 mm)



Note Cisco USB BLE Beacon can be ordered in pack of 10 or pack of 50. You must have Cisco DNA Spaces ACT license to manage Cisco BLE USB Beacon from the Cisco DNA Spaces BLE Manager GUI.

If you already have Cisco DNA Spaces ACT license, no additional licensing is required. However, if you do not have a Cisco DNA Spaces ACT license for the AP that a Cisco USB BLE Beacon will be placed in, a license is required.

Performance and Scale Requirements

We recommend that you deploy a Cisco USB BLE Beacon at every 2500 sq.ft. A Cisco USB BLE Beacon can accommodate at least 100 users in the specific coverage area. Each client can have a unique location accuracy experience without any degradation in location-accuracy or latency.

A Cisco USB BLE Beacon (operating in 2.4 GHz) is expected to have a low impact on 2.4-GHz WLAN because of the low-energy technology that is in use.



CHAPTER 4

Declarations of Conformity and Regulatory Information

This chapter provides declarations of conformity and regulatory information for the Cisco USB BLE Beacon. You can find additional information at this [location](#).

- [Manufacturers Federal Communication Commission Declaration of Conformity Statement, on page 11](#)
- [VCCI Statement for Japan, on page 12](#)
- [Guidelines for Operating Cisco USB BLE Beacon in Japan, on page 13](#)
- [Canadian Compliance Statement, on page 13](#)
- [Industry Canada, on page 15](#)
- [This Device Meets FCC and International Guidelines for Exposure to Radio Waves, on page 15](#)
- [This Device Meets the Industry Canada Guidelines for Exposure to Radio Waves, on page 15](#)
- [Cet appareil est conforme aux directives internationales en matière d'exposition aux fréquences radioélectriques, on page 16](#)
- [Additional Information on RF Exposure, on page 16](#)
- [Declaration of Conformity Statements, on page 17](#)

ManufacturersFederalCommunicationCommissionDeclaration of Conformity Statement



Table 5: Cisco USB BLE Beacon Models and Certification Numbers

Cisco USB BLE Beacon Models	Certification Number
Cisco AIR-BLE-USB	LDKCSPUD1977

Manufacturer:

Cisco Systems, Inc.

170 West Tasman Drive San Jose, CA 95134-1706 USA

This device complies with Part 15 rules. Operation is subject to the following two conditions:

1. This device may not cause harmful interference, and
2. This device must accept any interference received, including interference that may cause undesired operation.

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna
- Increase separation between the equipment and receiver.
- Connect the equipment to an outlet on a circuit different from which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

The FCC requires the user to be notified that any changes or modifications made to this device that are not expressly approved by Cisco may void the user's authority to operate the equipment



Caution

The Part 15 radio device operates on a non-interference basis with other devices operating at this frequency when using the integrated antennas. Any changes or modification to the product not expressly approved by Cisco could void the user's authority to operate this device.

VCCI Statement for Japan



Caution

This is a Class B product based on the standard of the Voluntary Control Council for Interference from Information Technology Equipment (VCCI). If this is used near a radio or television receiver in a domestic environment, it may cause radio interference. Install and use the equipment according to the instruction manual.

この装置は、クラスB情報技術装置です。この装置は、家庭環境で使用することを目的としていますが、この装置がラジオやテレビジョン受信機に近接して使用されると、受信障害を引き起こすことがあります。
取扱説明書に従って正しい取り扱いをして下さい。

VCCI-B



Guidelines for Operating Cisco USB BLE Beacon in Japan

This section provides guidelines for avoiding interference when operating Cisco USB BLE Beacon in Japan. These guidelines are provided in both Japanese and English.

Japanese Translation

この機器の使用周波数帯では、電子レンジ等の産業・科学・医療用機器のほか工場の製造ライン等で使用されている移動体識別用の構内無線局（免許を要する無線局）及び特定小電力無線局（免許を要しない無線局）が運用されています。

- 1 この機器を使用する前に、近くで移動体識別用の構内無線局及び特定小電力無線局が運用されていないことを確認して下さい。
- 2 万一、この機器から移動体識別用の構内無線局に対して電波干渉の事例が発生した場合には、速やかに使用周波数を変更するか又は電波の発射を停止した上、下記連絡先にご連絡頂き、混信回避のための処置等(例えば、パーティションの設置など)についてご相談して下さい。
- 3 その他、この機器から移動体識別用の特定小電力無線局に対して電波干渉の事例が発生した場合など何かお困りのことが起きたときは、次の連絡先へお問い合わせ下さい。

03-6434-6500

連絡先 : _____

English Translation

This equipment operates in the same frequency bandwidth as industrial, scientific, and medical devices such as microwave ovens and mobile object identification (RF-ID) systems (licensed premises radio stations and unlicensed specified low-power radio stations) used in factory production lines.

1. Before using this equipment, make sure that no premises radio stations or specified low-power radio stations of RF-ID are used in the vicinity.
2. If this equipment causes RF interference to a premises radio station of RF-ID, promptly change the frequency or stop using the device; contact the number below and ask for recommendations on avoiding radio interference, such as setting partitions.
3. If this equipment causes RF interference to a specified low-power radio station of RF-ID, contact the number below.

Contact Number: 03-6434-6500

Canadian Compliance Statement

This device complies with Industry Canada licence-exempt RSS standard(s). Operation is subject to the following two conditions: (1) this device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired operation of the device.

Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes : (1) l'appareil ne doit pas produire de brouillage, et (2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

Under Industry Canada regulations, this radio transmitter may only operate using an antenna of a type and maximum (or lesser) gain approved for the transmitter by Industry Canada. To reduce potential radio interference to other users, the antenna type and its gain should be so chosen that the equivalent isotropically radiated power (e.i.r.p.) is not more than that necessary for successful communication. Conformément à la réglementation d'Industrie Canada, le présent émetteur radio peut fonctionner avec une antenne d'un type et d'un gain maximal (ou inférieur) approuvé pour l'émetteur par Industrie Canada. Dans le but de réduire les risques de brouillage radioélectrique à l'intention des autres utilisateurs, il faut choisir le type d'antenne et son gain de sorte que la puissance isotrope rayonnée équivalente (p.i.r.e.) ne dépasse pas l'intensité nécessaire à l'établissement d'une communication satisfaisante.

This radio transmitter has been approved by Industry Canada to operate with the antenna types listed below with the maximum permissible gain and required antenna impedance.

Table 6: Antenna Specifications for Module

Item	Description
Antenna	Embedded Antenna with Omni Patter
Frequency Band	2.4~2.5GHz
Polarization	Linear
Antenna Peak Gain	1.9 dBi
Antenna Peak Efficiency	48.6%
Antenna Impedance	50 ohms

Le présent émetteur radio a été approuvé par Industrie Canada pour fonctionner avec les types d'antenne énumérés ci-dessous et ayant un gain admissible maximal et l'impédance requise.

Table 7: Spécifications d'antenne pour module

Détails de l'antenne	La description
Antenna	Embedded Antenna with Omni Patter
Frequency Band	2.4~2.5GHz
Polarization	Linear
Antenna Peak Gain	1.9 dBi
Antenna Peak Efficiency	48.6%
Antenna Impedance	50 ohms

Industry Canada

Table 8: Cisco USB BLE Beacon Models and Certification Numbers

Cisco USB BLE Beacon Models	Certification Number
AIR-BLE-USB	2461N-CSPUD1977

This Device Meets FCC and International Guidelines for Exposure to Radio Waves

Cisco USB BLE Beacon includes a radio transmitter and receiver. It is designed not to exceed the limits for exposure to radio waves (radio frequency electromagnetic fields) recommended by international guidelines. The guidelines were developed by an independent scientific organization (ICNIRP) and include a substantial safety margin designed to ensure the safety of all persons, regardless of age and health.

As such the systems are designed to be operated as to avoid contact with the antennas by the end user. It is recommended to set the system in a location where the antennas can remain at least a minimum distance as specified from the user in accordance to the regulatory guidelines which are designed to reduce the overall exposure of the user or operator.

Table 9: Separation Distance

MPE	Distance	Limit
0.00078 mW/cm ²	20 cm (7.87 inches)	1 mW/cm ²

The World Health Organization has stated that present scientific information does not indicate the need for any special precautions for the use of wireless devices. They recommend that if you are interested in further reducing your exposure then you can easily do so by reorienting antennas away from the user or placing the antennas at a greater separation distance than recommended.

This Device Meets the Industry Canada Guidelines for Exposure to Radio Waves

The Cisco USB BLE Beacon includes a radio transmitter and receiver. It is designed not to exceed the limits for exposure to radio waves (radio frequency electromagnetic fields) as referenced in Health Canada Safety Code 6. The guidelines include a substantial safety margin designed into the limit to ensure the safety of all persons, regardless of age and health.

As such the systems are designed to be operated as to avoid contact with the antennas by the end user. It is recommended to set the system in a location where the antennas can remain at least a minimum distance as specified from the user in accordance to the regulatory guidelines which are designed to reduce the overall exposure of the user or operator.

Table 10: Separation Distance

Frequency	MPE	Distance	Limit
2402 MHz	0.008 W/m ²	20 cm (7.87 inches)	5.35 W/m ²

Health Canada states that present scientific information does not indicate the need for any special precautions for the use of wireless devices. They recommend that if you are interested in further reducing your exposure you can easily do so by reorienting antennas away from the user, placing the antennas at a greater separation distance than recommended, or lowering the transmitter power output.

Cet appareil est conforme aux directives internationales en matière d'exposition aux fréquences radioélectriques

Cet appareil de la gamme Cisco USB BLE Beacon comprend un émetteur-récepteur radio. Il a été conçu de manière à respecter les limites en matière d'exposition aux fréquences radioélectriques (champs électromagnétiques de fréquence radio), recommandées dans le code de sécurité 6 de Santé Canada. Ces directives intègrent une marge de sécurité importante destinée à assurer la sécurité de tous, indépendamment de l'âge et de la santé.

Par conséquent, les systèmes sont conçus pour être exploités en évitant que l'utilisateur n'entre en contact avec les antennes. Il est recommandé de poser le système là où les antennes sont à une distance minimale telle que précisée par l'utilisateur conformément aux directives réglementaires qui sont conçues pour réduire l'exposition générale de l'utilisateur ou de l'opérateur.

Table 11: Distance d'éloignement

Fréquence	MPE	Distance	Limite
2402 MHz	0.008 W/m ²	20 cm (7.87 inches)	5.35 W/m ²

Santé Canada affirme que la littérature scientifique actuelle n'indique pas qu'il faille prendre des précautions particulières lors de l'utilisation d'un appareil sans fil. Si vous voulez réduire votre exposition encore davantage, selon l'agence, vous pouvez facilement le faire en réorientant les antennes afin qu'elles soient dirigées à l'écart de l'utilisateur, en les plaçant à une distance d'éloignement supérieure à celle recommandée ou en réduisant la puissance de sortie de l'émetteur.

Additional Information on RF Exposure

You can find additional information on the subject at the following links:

- FCC Bulletin 56: Questions and Answers about Biological Effects and Potential Hazards of Radio Frequency Electromagnetic Fields.
- FCC Bulletin 65: Evaluating Compliance with the FCC guidelines for Human Exposure to Radio Frequency Electromagnetic Fields.
- You can obtain additional information from the following organizations.
- World Health Organization Internal Commission on Non-Ionizing Radiation Protection at this [location](#).

- United Kingdom, National Radiological Protection Board at this [location](#).
- Cellular Telecommunications Association at this [location](#).
- The Mobile Manufacturers Forum at this [location](#).

Declaration of Conformity Statements

All the Declaration of Conformity statements related to this product can be found at this [location](#)

