



QUICK START GUIDE



Cisco Universal Small Cell 5310 3G Module

- 1** [Before You Begin](#)
- 2** [Install Your USC 5310 Module](#)
- 3** [Verify Your Installation](#)
- 4** [Specifications](#)
- 5** [Obtaining Documentation and Submitting a Service Request](#)

1 Before You Begin

A fully integrated, high-performance, low-cost third-generation (3G) small cell, your Universal Small Cell (USC) 5310 module is a licensed radio network extension that connects to the module port of the Cisco Aironet 3600 Series access point, which is a UL listed ITE product. This small cell module contains a dedicated 3G small cell base station that delivers mobile services indoors, while offloading traffic from the outdoor macro network.

Using the standards-based technology of Home Node B (HNB), the USC 5310 module provides 3G signals inside a building for voice, data and messaging services for up to 16 simultaneous users within a coverage area of approximately 7000 square feet (650 square meters). The module supports Band 2/5 for the American market and Band 1 for the rest of the world.

System Requirements

This module is designed for use with Cisco Aironet 3600 Series access points. The module is not designed for use with other access points. The USC 5310 module is supported on these Cisco wireless LAN controllers:

- Cisco 5500 Series Wireless Controller
- Cisco 7500 Series Wireless Controller
- Cisco 8500 Series Wireless Controller

The USC 5310 is supported by the following software releases:

- Cisco Unified Wireless Network Software Release 7.6 or later
- Cisco Universal Small Cell Software Release 3.3 or later
- Cisco Small Cell Solution Release 2.0 or later

Power Considerations

Installation of your small cell module requires an additional 6 watts to power the Cisco Aironet 3600 access point. With a USC 5310 module installed, the access point requires the full Power over Ethernet Plus (PoE+) of 25.5 Watts at the egress switch port and a cable run of less than 300 feet (100 meters).

Power options for the access point include:

- IEEE 802.3at POE+ 25.5 W delivered from the upstream Ethernet switch
- Cisco 3600 Series Power Injector (AIR-PWRINJ4=)
- Cisco 3600 Series local power supply (AIR-PWR-B=)

The USC 5310 module has a power limit circuitry that shuts down the module if it draws more power than allowed.

Installation Considerations

Install your small cell:

- in a central location, in an area where people are most likely to make calls
- away from windows, to avoid the signal leaking outside or external signals leaking in
- in an open area with airflow; not in a closed cabinet which reduces the signal strength

If you have thick internal walls, or metal, fire or rotating doors, plan to place units at either side of the obstruction at a distance shorter than 49 feet (15 m). Install a unit across from a corner to provide coverage on both sides of the corner.

For more information, refer to the “Cisco Aironet AP Module for Wireless Security and Spectrum Intelligence (WSSI) Deployment Guide” at the following URL:

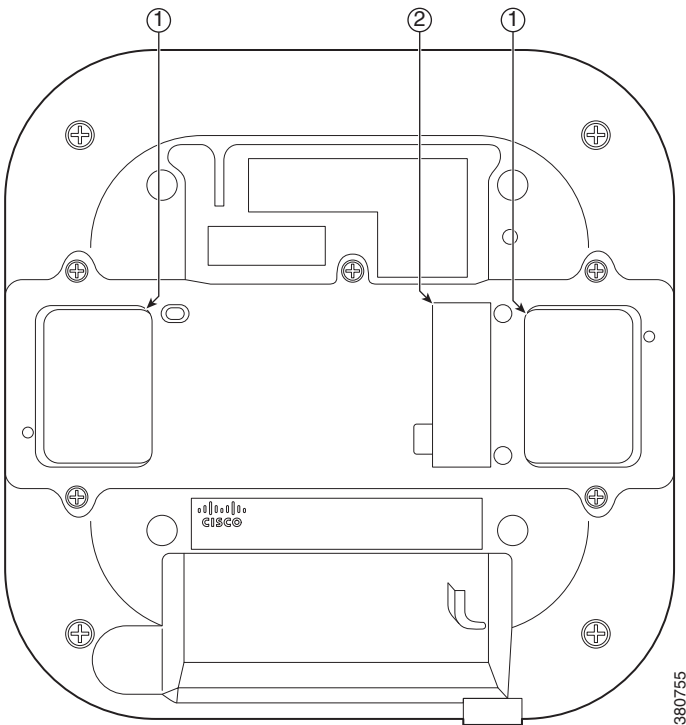
http://www.cisco.com/en/US/products/ps11983/products_tech_note09186a0080bed15d.shtml.

2 Install Your USC 5310 Module

Follow these steps to install the USC 5310 module:

- Step 1** Remove the module from the packaging.
- Step 2** Power down the access point.
- Step 3** Peel off the label from the back of the 3600 series access point to reveal the module port connector.

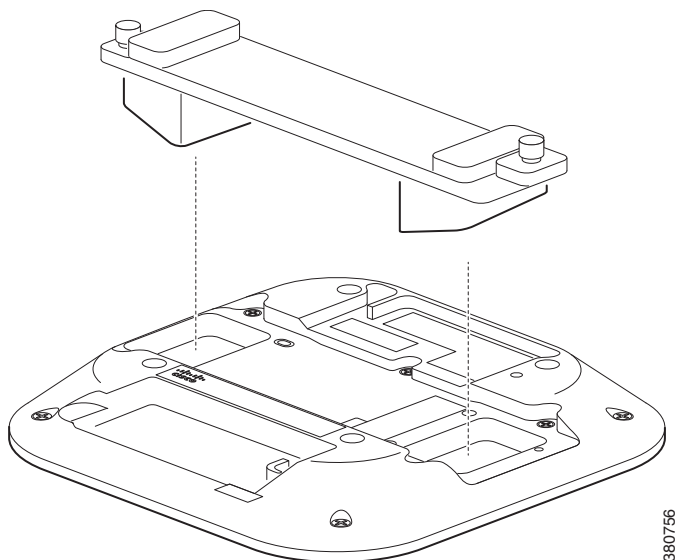
Figure 1 Backside of Cisco Aironet 3600 Access Point



1	Openings for module's antennas
2	Label covering port connector

Step 4 Align the module connector with the connector on the back of the access point and click the module into place.

Figure 2 *Installing Module in the Cisco Aironet 3600 Access Point*



Step 5 Screw down the thumb screws on the module.



Note If the screws are not tightened, the module will not be recognized and may not operate correctly. Make sure not to over-tighten the screws; they should be only hand-tightened.

Step 6 Power up the access point. When the access point boots up, it recognizes the module. No software configuration is required.

Step 7 If necessary, mount the Cisco Aironet 3600 Series access point, with the USC 5310 plug-in module installed, using the universal bracket (AIR-AP-BRACKET-2).

**Note**

The universal bracket works with electrical boxes, can be used for wall mounting, and adapts to ceiling installations. It leaves a larger gap between the mounting surface and the access point, which allows space for the USC 5310 plug-in module.

For more information, refer to “Access Point Mounting Instructions” at the following URL:

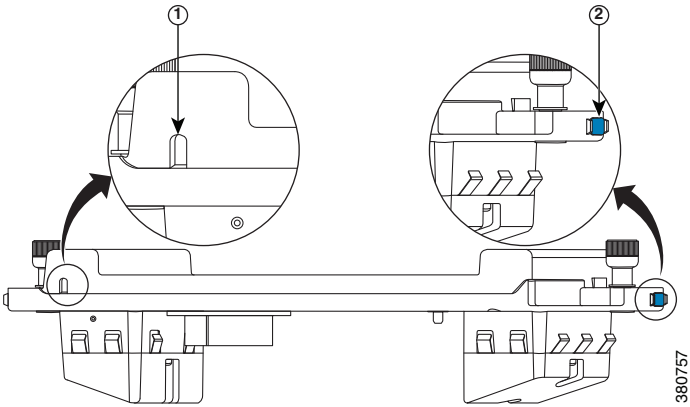
http://www.cisco.com/en/US/docs/wireless/access_point/mounting/guide/apmount.html

3 Verify Your Installation

After the USC 5310 module is installed in the access point and powered up, it takes approximately ten minutes for the module to initialize, download any necessary software and configuration information, configure the radio frequency (RF) parameters, and come into service.

Take note of the initialization sequence by noting the color and activity of the LEDs on either side of the module. The module is ready to use when the LEDs change to solid green.

Figure 3 Cisco USC 5310 Module



1	Reset button
2	LED—the same LED indication displays on both sides of the module

Table 1 USC 5310 LED Indications

LED Indication	Small Cell State / Action
Off	Unknown State or Off—Ensure power supply is connected and turned on
Fast Blinking Green	Initialization—Wait for action to complete
	Temporarily out of service—Wait for action to complete
	Factory reset—Wait for action to complete
Green	In service, no calls or data sessions
Slow Blinking Green	In service, calls or data sessions are active
	In service, experiencing congestion and cannot accept more calls
Red blink 1 time in 4 seconds	No physical LAN connection—Verify connection with residential gateway
Red blink 1 time in 4 seconds	No connection with router—Verify residential gateway is operational

Table 1 USC 5310 LED Indications (continued)

LED Indication	Small Cell State / Action
Red blink 2 times in 4 seconds	No Internet connection—Verify residential gateway is connected to Internet
Red blink 3 times in 4 seconds	RF issue, local interference or poor QoS—Verify that phones are not too close to unit
Red blink 4 times in 4 seconds	Over-temperature—Verify location of unit and that there is good air flow
Red	Cannot create secure connection—Contact operator
	Internal fault—Contact operator
	RF issue, cannot select an RF profile—Verify whether another small cell is located in close proximity and if so, relocate the small cell
	Provisioning failure—Contact operator

4 Specifications

Part Numbers

- Band 1 deployments: USC5310-AI-K9
- Band 2/5 deployments: USC5310-BI-K9

Size

- Size: 8.46 x 2.5 x 1.97 in. (21.48 x 6.35 x 5 cm)
- Weight: 1 lb (less than 500 g)

Regulatory, Compliance and Safety

- CE Mark for USC5310-AI-K9
- FCC Part 15B Class B, Part 22 and Part 24 for USC5310-BI-K9

- For additional compliance information, refer to the USC 5310 data sheet at the following URL: http://www.cisco.com/en/US/prod/collateral/wireless/ps11035/ps12975/ps13292/ps12976/data_sheet_c78-728548.html
- For additional safety information, refer to the “Cisco 3600 Series Access Points Getting Started Guide” at the following URL: http://www.cisco.com/en/US/docs/wireless/access_point/3600/quick/guide/ap3600getstart.html

5 Obtaining Documentation and Submitting a Service Request

For information on obtaining documentation, submitting a service request, and gathering additional information, see the monthly *What's New in Cisco Product Documentation*, which also lists all new and revised Cisco technical documentation:

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

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

Federal Communication Commission Interference Statement

This device complies with Part 15 of the FCC 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 of the following measures:

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

FCC Caution: Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.

This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

Radiation Exposure Statement:

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20cm between the radiator & your body.

Industry Canada statement

This device complies with Industry Canada license-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."

This Class B digital apparatus complies with Canadian ICES-003.

Cet appareil numérique de la classe B est conforme à la norme NMB-003 du Canada.

Radiation Exposure Statement:

This equipment complies with IC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20cm between the radiator & your body.

Déclaration d'exposition aux radiations:

Cet équipement est conforme aux limites d'exposition aux rayonnements IC établies pour un environnement non contrôlé. Cet équipement doit être installé et utilisé avec un minimum de 20 cm de distance entre la source de rayonnement et votre corps.



Americas Headquarters
Cisco Systems, Inc.
San Jose, CA

Asia Pacific Headquarters
Cisco Systems (USA) Pte. Ltd.
Singapore

Europe Headquarters
Cisco Systems International BV Amsterdam,
The Netherlands

Cisco has more than 200 offices worldwide. Addresses, phone numbers, and fax numbers are listed on the Cisco Website at www.cisco.com/go/offices.

Printed in the USA on recycled paper containing 10% postconsumer waste.