



# Declarations of Conformity and Regulatory Information for Cisco Access Products with 802.11a/b/g and 802.11b/g Radios

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This document provides declarations of conformity and regulatory information for the Cisco wireless access routers and access point high-speed WAN interface cards (AP HWICs) using radio components with the following part numbers:

- 74-3624-xx (802.11a/b/g)
- 74-3625-xx (802.11b/g)

This document contains the following sections:

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# Manufacturers Federal Communication Commission Declaration of Conformity Statement



**FCC Certification numbers:**

LDK XSARCD11—802.11a/b/g

LDKXSMKHK12—802.11b/g

**Manufacturer:**

Hon Hai Precision Ind. Co., Ltd.  
Hsinchu Science Park Branch Office  
5F-1, 5 Hsin-An Road  
Hsinchu, Science-Based Industrial Park  
Taiwan, R.O.C.  
and  
Cisco Systems, Inc.  
170 West Tasman Drive  
San Jose, CA 95134

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 of a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a residential environment. This equipment generates, uses, and radiates radio frequency energy, and if not installed and used in accordance with the instructions, may cause harmful interference. However, there is no guarantee that interference will not occur. If this equipment does cause interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to correct the interference by one 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.

**Caution**

The Part 15 radio device operates on a non-interference basis with other devices operating at this frequency when using antennas listed in [Table 1](#). Any changes or modification to the product not expressly approved by Cisco could void the user's authority to operate this device.

**Caution**

Within the 5.15 to 5.25 GHz band (5 GHz radio channels 34 to 48) the U-NII devices are restricted to indoor operations to reduce any potential for harmful interference to co-channel Mobile Satellite System (MSS) operations.

**Table 1** Cisco 2.4-GHz and 5-GHz Antennas

Radio		Antenna			
IEEE 802.11b/g	IEEE 802.11a	Cisco Part Number	Description	Gain at 2.4 GHz	Gain at 5 GHz
Yes	Yes	AIR-ANTM2050D-R	Swivel-mount dipole	2.0 dBi	5 dBi
Yes	Yes	AIR-ANTM4050V-R	Diversity omnidirectional ceiling-mount	4.0 dBi	5 dBi
Yes	Yes	AIR-ANTM5560P-R	Wall-mount patch	5.5 dBi	6.5 dBi
Yes	—	AIR-ANT4941	Swivel-mount dipole	2.2 dBi	
Yes	—	AIR-ANT5959	Diversity omnidirectional ceiling-mount	2.35 dBi	
Yes	—	AIR-ANT1728	Omnidirectional ceiling-mount	5.2 dBi	

## Department of Communications—Canada

### Canadian Compliance Statement

This Class B Digital apparatus meets all the requirements of the Canadian Interference-Causing Equipment Regulations.

Cet appareil numérique de la classe B respecte les exigences du Règlement sur le matériel brouilleur du Canada.

This device complies with Class B Limits of Industry Canada. 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.

Cisco 802.11b/g radios are certified to the requirements of RSS-210 for 2.4-GHz spread spectrum devices, and Cisco 802.11a radios are certified to the requirements of RSS-210 for 5-GHz spread spectrum devices. The use of this device in a system operating either partially or completely outdoors may require the user to obtain a license for the system according to the Canadian regulations. For further information, contact your local Industry Canada office.

**Canadian Certification numbers:**

2461B-XSARCD11 (802.11a/b/g)

2461B-XSMKHK12 (802.11b/g)

## European Community, Switzerland, Norway, Iceland, and Liechtenstein

### Declaration of Conformity to R&TTE Directive 1999/5/EC for the European Community, Switzerland, Norway, Iceland and Liechtenstein

- English:** This equipment is in compliance with the essential requirements and other relevant provisions of Directive 1999/5/EC. Statement 287
- Dansk:** Dette udstyret er i samsvar med de grunnleggende kravene og andre relevante forskrifter i 1999/5/EC-direktivet.
- Deutsch:** Diese Geräte entsprechen den Anforderungen und anderen relevanten Bestimmungen der Richtlinie 1999/5/EC.
- Español:** Este equipo cumple con los requisitos esenciales y otras provisiones relevantes de la Directiva 1999/5/EC.
- Ελληνας:** Αυτός ο εξοπλισμός συμμορφώνεται με τις ουσιώδεις απαιτήσεις και τις λοιπές διατάξεις της Οδηγίας 1999/5/EK.
- Français:** Cet équipement répond aux exigences et provisions de la Directive 1999/5/EC.
- Íslenska:** Þessi búnaður samrýmist lögboðnum kröfum og öðrum ákvæðum tilskipunar 1999/5/ESB.
- Italiano:** Questa apparecchiatura rispetta i requisiti essenziali e le altre clausole rilevanti della Direttiva 1999/5/CE.
- Nederlands:** Deze apparatuur voldoet aan de essentiële vereisten en andere relevante voorzieningen van EU-richtlijn 1999/5/EC.
- Norsk:** Dette utstyret samsvarer med de vesentligste kravene og andre regler i direktiv 1999/5/EC.
- Português:** Este equipamento está de acordo com os requisitos essenciais e outras provisões relevantes da Diretiva 1999/5/EC.
- Română** Prin prezenta, noi Cisco Systems România SRL, declarăm pe propria răspundere că produs de mai jos îndeplinește principalele cerințe de conformitate cu Directiva Europeană 1999/5/EC(R&TTE):  
<<PRODUCT NAME OR NUMBER>>

**Suomalainen:** Tämä laite noudattaa direktiivin 1999/5/EC keskeisiä vaatimuksia ja sen muita olennaisia määräyksiä.

**Svenska:** Denna utrustning uppfyller de väsentliga kraven och andra relevanta förordningar i Direktiv 1999/5/EC.

Προειδοποίηση Αυτός ο εξοπλισμός συμμορφώνεται με τις ουσιώδεις απαιτήσεις και τις λοιπές διατάξεις της Οδηγίας 1999/5/EK.

**Română** Prin prezenta, noi Cisco Systems România SRL, declarăm pe propria răspundere că produsul de mai jos îndeplinește principalele cerințe de conformitate cu Directiva Europeană 1999/5/EC(R&TTE):

**Models with 802.11a/b/g radios:**

Cisco 1800 series routers:

- CISCO1801W-AG-E/K9
- CISCO1802W-AG-E/K9
- CISCO1803W-AG-E/K9
- CISCO1812W-AG-E/K9

Access point high-speed WAN interface card:

- HWIC-AP-AG-E

**Models with 802.11b/g radios:**

Cisco 850 series and Cisco 870 series routers:

- CISCO851W-G-E-K9
- CISCO857W-G-E-K9
- CISCO871W-G-E-K9
- CISCO876W-G-E-K9
- CISCO877W-G-E-K9
- CISCO878W-G-E-K9

Access point high-speed WAN interface card:

- HWIC-AP-G-E

## Standards and CE Marking

### 2.4 GHz Radio

For 2.4 GHz radios, the following standards were applied:

- Radio: EN 300.328-1, EN 300.328-2
- EMC: EN 301.489-1, EN 301.489-17

- Safety: EN 60950

The following CE mark is affixed to Cisco wireless products with a 2.4 GHz radio:



**Note**

This equipment is intended to be used in all EU and EFTA countries. Outdoor use may be restricted to certain frequencies and/or may require a license for operation. For more details, contact Cisco Corporate Compliance.



**Note**

Combinations of power levels and antennas resulting in a radiated power level above 100 mW equivalent isotropic radiated power (EIRP) are considered as not compliant with the above mentioned directive and are not allowed for use within the European community and other countries that have adopted the European R&TTE directive 1999/5/EC or the CEPT recommendation Rec 70.03 or both.

## 5 GHz Radio

For 5 GHz radios, the following standards were applied:

- Radio: EN 301.893
- EMC: EN 301.489-1, EN 301.489-17
- Safety: EN 60950

The following standards were applied during the assessment of the product against the requirements of the Directive 1999/5/EC:

- Radio: EN 301 893 and EN 300 328
- EMC: EN 301 489-1 and EN 301 489-17
- Safety: EN 60950 and EN 50371



**Note**

The equipment, when operating in the 5-GHz frequency range, has no Dynamic Frequency Selection (DFS) feature related to radar detection built in. However, the equipment is equipped with a feature that, when enabled, results in a random selection of the operating frequency when powered on.



**Note**

In order to meet the Transmit Power Control (TPC) requirement, the equipment has different user-selectable power levels. Devices should always be configured to the lowest possible power level. See the [“Changing Output Power” section on page 9](#) for instructions on how to change the output power settings.

For Cisco wireless products with a 5 GHz radio, the following CE mark and class-2 identifier are affixed to the equipment and its packaging:



## National Restrictions

The 2.400- to 2483.5-MHz band is available in all EU member states for indoor as well as outdoor usage. In the majority of the countries, the maximum power allowed is 100 mW eirp.

With regard to operation in the 5-GHz bands, these products meet the requirements as specified in the Guidance Document produced by the CEPT/ECC WG FM for 'Interim Arrangements for 5-GHz Wireless LANs' (September 2002). The equipment can operate in either band (5150- to 5250-MHz or 5150- to 5350-MHz) and is intended to be placed on the market only in those countries that have a permanent or interim regulation in place by which the equipment without DFS (radar detection) is allowed to operate in part of the 5-GHz frequency band and if applicable, at a reduced output power level.

For all countries, the operation in the 5-GHz bands (5150- to 5350-MHz) is restricted to indoor use only.

[Table 2](#) contains an overview of the countries in which the product is intended to be placed on the market together with the applicable frequency band and the maximum allowed power (eirp).

**Table 2** Country Specific Frequency Ranges and Power Levels

Countries	Frequency (MHz)	Power Level (mW) eirp
All EU countries	2400–2483.5	100
DK, NO	5150–5250	50
AT, DE, IT, PT	5150–5250	60
FR, NL, SI, SK	5150–5250	200
BE, FI, IR, UK, LU, ES, CH, LI	5150–5350	120
GR, PL	5150–5350	200

Cisco recommends that you check with the local authorities for the latest status of their national regulations for Wireless LANs or for regulations in countries not listed in [Table 2](#).

The following sections identify EU countries having additional requirements or restrictions than those listed in [Table 2](#).

### Italy

This product meets the National Radio Interface and the requirements specified in the National Frequency Allocation Table for Italy. Unless operating within the boundaries of the owner's property, the use of these wireless LAN products requires a 'general authorization.'

Check the following URL for more information:

<http://www.comunicazioni.it/it/>

## France

Check the following URL for more information:

<http://www.art-telecom.fr/>

## Belgium

Check the following URL for more information:

<http://www.bipt.be/langue.htm>



**Note**

Although Norway, Switzerland, and Liechtenstein are not EU member states, the EU Directive 1999/5/EC has also been implemented in those countries.



**Note**

The regulatory limits for maximum output power are specified in eirp. The eirp level of a device can be calculated by adding the gain of the antenna used (specified in dBi) to the output power available at the connector (specified in dBm).

## Products with External Antennas

Cisco wireless access routers or AP HWICs can be shipped with external antennas. [Table 3](#) lists the antennas that were assessed together with the equipment against the requirements of the R&TTE directive. Depending on the country, a different regulatory limit might be applicable. It is therefore the responsibility of the end user to select a power level that, together with the antenna, results in an eirp level that is below the applicable limit.

The maximum conducted power setting for each of the antennas and the applicable regulatory limits is provided in [Table 3](#). See the “[National Restrictions](#)” section on [page 7](#) to identify the regulatory limit in your country.

**Table 3** Maximum Allowed Conducted Power Settings to Meet Regulatory Limits for Output Power (eirp)

Cisco Product and Antenna	Gain (dBi)	Frequency Band (GHz)	Regulatory Limit (eirp) (mW)	Maximum Conducted Power Setting (dBm)	Antenna Description
Cisco product with 802.11a/b/g radio and antenna AIR-ANT-M2050D-R	2.0	2.4	100	17	Swivel-mount dipole
	5	5	50	11	
			60	11	
			120	17	
			200	17	
Cisco product with 802.11a/b/g radio and antenna AIR-ANT-M4050V-R	4.0	2.4	100	15	Diversity omnidirectional ceiling-mount
	5	5	50	11	
			60	11	
			120	17	
			200	17	



**Table 3** Maximum Allowed Conducted Power Settings to Meet Regulatory Limits for Output Power (eirp)

Cisco Product and Antenna	Gain (dBi)	Frequency Band (GHz)	Regulatory Limit (eirp) (mW)	Maximum Conducted Power Setting (dBm)	Antenna Description
Cisco product with 802.11a/b/g radio and antenna AIR-ANT-M5560P-R	5.5	2.4	100	13	Wall-mount patch
	6.0	5	50	10	
			60	10	
			120	13	
			200	15	
Cisco product with 802.11a/b/g radio and antenna AIR-ANT4941	2	2.4	100	17	Swivel-mount dipole
Cisco product with 802.11a/b/g radio and antenna AIR-ANT5959	2.35	2.4	100	15	Diversity omnidirectional ceiling-mount
Cisco product with 802.11a/b/g radio and antenna AIR-ANT1728	5.2	2.4	100	13	Omnidirectional ceiling
Cisco product with 802.11a/b/g radio and antenna AIR-ANT3549	9	2.4	100	10	Wall-mount patch

## Operating Frequency

The operating frequency in a wireless LAN is determined by the access point. As such, it is important that the access point is correctly configured to meet the local regulations. See the [“National Restrictions” section on page 7](#) for country specific operating frequency ranges.

## Changing Output Power

Connect your PC to the Ethernet port of the wireless access router or host platform of the AP HWIC and follow these steps to change the output power to meet the local regulations.



**Note** For detailed information on how to connect your PC to the router, see the appropriate hardware installation guide or quick start guide.

- Step 1** Open your Internet browser. You must use Microsoft Internet Explorer (version 5.x or later) or Netscape Navigator (version 4.x or later).
- Step 2** Enter the access point’s IP address in the browser address line and press **Enter**. An Enter Network Password screen appears.
- Step 3** Enter the username and password and press **Enter**. The Summary Status page appears.



**Note** The default username and password is *Cisco*. They are case-sensitive.

- Step 4** In the Network Interfaces section, select the radio you want to change. The status page for that radio appears.
- Step 5** Select the **Settings** tab. The Settings page appears.
- Step 6** Scroll down to the Transmitter Power section.
- Step 7** Select the appropriate power level.

Table 4 lists the output power levels (conducted) for the 2.4-GHz and 5-GHz bands.

**Table 4 Available Output Power Levels**

802.11b/g 2.4-GHz Mode (dBm)	802.11a 5-GHz Mode (dBm)
17	16
15	14
13	13
10	11
	10

- Step 8** Click **Apply**.



**Note**

See the hardware installation guide or the quick start guide for your product for more details on how to connect your PC to the wireless device and on how to configure it using the web browser interface.

## Declaration of Conformity for RF Exposure

The radio module has been found to be compliant to the requirements set forth in CFR 47 Sections 2.1091, and 15.247 (b) (4) addressing RF Exposure from radio frequency devices as defined in Evaluating Compliance with FCC Guidelines for Human Exposure to Radio Frequency Electromagnetic Fields. For all approved antennas the equipment should be installed at least 20cm (7.9 in.) from your body or nearby persons.

The wireless product must be installed to maintain a minimum 20 cm (7.9 in.) co-located separation distance from other FCC approved indoor/outdoor antennas used with the access point. Any antennas or transmitters not approved by the FCC cannot be co-located with the access point antennas. The co-located 2.4 GHz and 5 GHz antennas support a minimum separation distance of 10 cm (3.9 in.) and are compliant with the applicable FCC RF exposure limit when transmitting simultaneously.



**Note**

Dual antennas used for diversity operation are not considered co-located.

# Guidelines for Operating Cisco Wireless Access Products in Japan

This section provides guidelines for avoiding interference when operating Cisco wireless access products 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。

連絡先 : 03-5549-6500

43768

## 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: 03-5549-6500

### Models with 802.11a/b/g radios:

Cisco 1800 series routers:

- CISCO1812W-AG-J/K9

Access point high-speed WAN interface card:

- HWIC-AP-AG-J

**Models with 802.11b/g radios:**

Cisco 850 series and Cisco 870 series routers:

- CISCO851W-G-J-K9
- CISCO857W-G-J-K9
- CISCO871W-G-J-K9
- CISCO876W-G-J-K9
- CISCO877W-G-J-K9
- CISCO878W-G-J-K9

Access point high-speed WAN interface card:

- HWIC-AP-G-J

## Administrative Rules for Cisco Wireless Devices in Taiwan

This section provides administrative rules for operating Cisco wireless access products in Taiwan. The rules are provided in both Chinese and English.

### Wireless Devices with IEEE 802.11a or 802.11b/g Radios

#### Chinese Translation

本設備限於室內使用

#### English Translation

This equipment is limited for indoor use.

## All Access Wireless Products

### Chinese Translation

#### 低功率電波輻射性電機管理辦法

第十二條 經型式認證合格之低功率射頻電機，非經許可，公司、商號或使用者均不得擅自變更頻率、加大功率或變更原設計之特性及功能。

第十四條 低功率射頻電機之使用不得影響飛航安全及干擾合法通信；經發現有干擾現象時，應立即停用，並改善至無干擾時方得繼續使用。

前項合法通信，指依電信法規定作業之無線電信。

低功率射頻電機須忍受合法通信或工業、科學及醫療用電波輻射性電機設備之干擾。

127048

### English Translation

#### Administrative Rules for Low-power Radio-Frequency Devices

##### Article 12

For those low-power radio-frequency devices that have already received a type-approval, companies, business units or users should not change its frequencies, increase its power or change its original features and functions.

##### Article 14

The operation of the low-power radio-frequency devices is subject to the conditions that no harmful interference is caused to aviation safety and authorized radio station; and if interference is caused, the user must stop operating the device immediately and can't re-operate it until the harmful interference is clear.

The authorized radio station means a radio-communication service operating in accordance with the Communication Act.

The operation of the low-power radio-frequency devices is subject to the interference caused by the operation of an authorized radio station, by another intentional or unintentional radiator, by industrial, scientific and medical (ISM) equipment, or by an incidental radiator.

## Declaration of Conformity Statements

All the Declaration of Conformity statements related to this product can be found at the following URL:

<http://www.ciscofax.com>

## Declaration of Conformity Statements for European Union Countries

The Declaration of Conformity statements for the European Union countries are listed below: