Getting Started and Product Document of Compliance for the Cisco IR807 Integrated Services Router

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Cisco Information

Table 1  Cisco Company Name and Address Details

<table>
<thead>
<tr>
<th>Company Name</th>
<th>Cisco Address</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cisco Systems, Inc.</td>
<td>170 West Tasman Drive, San Jose, CA 95134-1706, United States.</td>
</tr>
</tbody>
</table>

Introduction

The purpose of this document is to provide the installer the necessary information for installing the Cisco IR807 Industrial Integrated Services Router (IR807). The documentation is on-line, and subject to change. Make sure that you are downloading or viewing on-line the latest version before beginning an installation.

This document also contains Product Compliance and Safety information as well as Declaration of Conformity.

Items Shipped with your Router

Unpack the box and verify that all items listed on the invoice were shipped with the Cisco IR807.

The following items are shipped with your router:

- This document Part Number 78-
- Grounding Lug Kit
- Mounting Screws
- Power Connector

Equipment that you supply

- ESD-preventive cord and wrist strap.
- Wire-stripping tools for stripping 14- and 18-gauge wires
- Crimping tool
- Ratcheting torque screwdriver that exerts up to 15 in-lb (1.69 N-m) of pressure.
Related Documentation

To access resources or to display the latest Cisco IR800 Series Router documentation on-line, go to this URL:


This portal has all of the information you need to get to know your router, install and configure it, as well as access software. Look at the right side of the page under Support. You will see the following categories as well as other important information:

- **All support information for Cisco IR800 Series Routers:** Provides the most requested resources and a list of all of the models in the series.
- **Software Downloads, Release and General Information:** Links to the Software Download site, Compatibility Information, Licensing Information, and Product Release notes.
- **Install and Upgrade:** This is your starting point for Installing the Router. Look under The Install and Upgrade Guide section for this model.
- **Configure:** These links provide configuration information. Look first under the Configuration Guide section for this model.

Other important and helpful links to Cisco information are here:

- Cisco com: [www.cisco.com](http://www.cisco.com)
- Warranty Information: [www.cisco-warrantyfinder.com](http://www.cisco-warrantyfinder.com)
- Cisco Product Documentation: [www.cisco.com/go/techdocs](http://www.cisco.com/go/techdocs)

### Installation Warning and Caution Statements

**Warning** IMPORTANT SAFETY INSTRUCTIONS

This warning symbol means danger. You are in a situation that could cause bodily injury. Before you work on any equipment, be aware of the hazards involved with electrical circuitry and be familiar with standard practices for preventing accidents. Use the statement number provided at the end of each warning to locate its translation in the translated safety warnings that accompanied this device. Statement 1071

**Warning**

In order to comply with FCC radio frequency (RF) exposure limits, antennas for this product should be located a minimum of 7.9 in. (20 cm) or more from the body of all persons. Statement 302

**Warning**

Read the installation instructions before connecting the system to the power source. Statement 1004
Warning This unit is intended for installation in restricted access areas. A restricted access area can be accessed only through the use of a special tool, lock and key, or other means of security. Statement 1017

Warning This equipment must be grounded. Never defeat the ground conductor or operate the equipment in the absence of a suitably installed ground conductor. Contact the appropriate electrical inspection authority or an electrician if you are uncertain that suitable grounding is available. Statement 1024

Warning Only trained and qualified personnel should be allowed to install, replace, or service this equipment. Statement 1030

Warning Ultimate disposal of this product should be handled according to all national laws and regulations. Statement 1040

Warning To prevent the system from overheating, do not operate it in an area that exceeds the maximum recommended ambient temperature of: 140°F (60°C) Statement 1047

Warning Use twisted-pair supply wires suitable for 86°F (30°C) above surrounding ambient temperature outside the enclosure. Statement 1067

Warning Installation of the equipment must comply with local and national electric codes. Statement 1074

Warning Avoid using or servicing any equipment that has outdoor connections during an electrical storm. There may be a risk of electric shock from lightning. Statement 1088

Caution The equipment shall only be used in an area of not more than pollution degree 2, as defined in IEC/EN 60664-1. The equipment shall be installed in a certified ATEX enclosure that provides a degree of protection not less than IP 54 in accordance with IEC 60079-15.

Caution Airflow around the Router must be unrestricted. The dimensions (height x width x depth) are 1.15 x 5.05 x 6.27 in. (19.6 x 27.9 x 4.39 cm). To prevent the Router from overheating, there must be a minimum of 1.0 in. (25.4 mm) around all surfaces of the Router. Contact your Cisco Technical Assistance Centre (TAC) if tighter spacings are required.

Caution This equipment is suitable for use in Class I, Division 2, Groups A, B, C, D, or only nonhazardous locations.
This product is suitable for use in environmental air space in accordance with section 300.22.C of the National Electrical Code and sections 2-128, 12-010(3), and 12-100 of the Canadian Electrical Code, Part 1, C22.1. You should not install the power supply or power injector in air handling spaces.

Note
Marked DC Input ratings: 12-48Vdc, 0.5-1.5A.

Note
The maximum ambient (Tamb) operating temperature range is –40 to 140°F (–40 to 60°C).

Grounding the Router

Make sure to follow any grounding requirements at your site.

Warning
This equipment must be grounded. Never defeat the ground conductor or operate the equipment in the absence of a suitably installed ground conductor. Contact the appropriate electrical inspection authority or an electrician if you are uncertain that suitable grounding is available. Statement 1024

Warning
This equipment is intended to be grounded to comply with emission and immunity requirements. Ensure that the equipment functional ground lug is connected to earth ground during normal use. Statement 1064

Caution
To make sure that the equipment is reliably connected to earth ground, follow the grounding procedure instructions, and use 14-to-16 AWG (1.6mm -to- 1.3mm) wire.

Caution
Use at least a 2.3mm conductor to connect to the external grounding screw.

The router must be connected to a reliable earth ground. Install the ground wire in accordance with local electrical safety standards.

• For NEC-compliant grounding, use size 14 AWG (1.6mm) or larger copper wire and a ring terminal with an inner diameter of 1/4 in. (5 to 7 mm).
• For EN/IEC 60950-compliant grounding, use size 18 AWG (1.02mm) or larger copper wire.

Note
Depending on the kit shipped with your router, the grounding lug may have one hole or two holes.

Step 1
Locate the ring terminal lug in the packaging kit. Store the ground screw for later use.

Step 2
Use a wire stripping tool to strip the 14-16 AWG (1.6mm -to- 1.3mm) grounding wire to 0.22 in. (5.56 mm).
Connecting DC Power

**Warning** When you connect or disconnect the power and/or alarm connector with power applied, an electrical arc can occur. This could cause an explosion in hazardous area installations. Be sure that all power is removed from the equipment and any other circuits. Be sure that power cannot be accidentally turned on or verify that the area is nonhazardous before proceeding. Statement 1058

**Warning** Explosion Hazard—The area must be known to be nonhazardous before installing, servicing, or replacing the unit. Statement 1082

**Warning** Explosion Hazard—Substitution of components may impair suitability for Class I, Division 2/Zone 2. Statement 1083

**Warning** Connect the unit only to DC power source that complies with the safety extra-low voltage (SELV) requirements in IEC 60950 based safety standards. Statement 1033

**Note** Maximum DC input operating range is 9.6-60Vdc, 0.5-1.5A
Plugs and Pin-Outs

The following is a brief overview of connecting to DC power. Details can be found in the Cisco IR807 Integrated Services Router Hardware Installation Guide and should be understood before beginning. See Related Documentation, page 3.

The IR807 ships with a DC power accessory kit that contains a 4-pin screw on connector. The power entry receptacle is on the IR807. The power connector plug is shown in Figure 1. The Power Receptacle is shown in Figure 2. Descriptions are shown in Figure 3.

To connect DC power:

### Figure 1  
Power Connector Plug

![Figure 1](image1)

### Figure 2  
Power Receptacle

![Figure 2](image2)

<table>
<thead>
<tr>
<th>Pin Number</th>
<th>Name</th>
<th>Description</th>
<th>Color</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>DC In +</td>
<td>DC Power In (BAT+)</td>
<td>Red</td>
</tr>
<tr>
<td>2</td>
<td>DC In -</td>
<td>DC Power Return (GND-)</td>
<td>Black</td>
</tr>
<tr>
<td>3</td>
<td>AC</td>
<td>Alarm Common</td>
<td>N/A</td>
</tr>
<tr>
<td>4</td>
<td>AI</td>
<td>Alarm Input</td>
<td>N/A</td>
</tr>
</tbody>
</table>

To connect DC power:
Step 1
Locate the power and alarm connector on the router front panel. The pins and their function are found in Figure 3.

Note
Your connector may not have the labels V RT A A appear on it. The pins are 1-4 from left to right.

In the labeled connector, the pins are:
V—Positive DC power connection
RT—Return DC power connection
A—Alarm Common
A—Alarm Input

Step 2
Identify the connector positive and return DC power connections. The connections are:
• 1—Positive DC power connection
• 2—Return DC power connection
• 3—Alarm Common
• 4—Alarm Input

Step 3
Measure two strands of twisted-pair copper wire 18-to-20 AWG (1.02-to-0.8mm) long enough to connect to the DC power source.

Note
The maximum length of the cable before twisting is 15 feet (4.6 meters).

Step 4
Using an 18-gauge wire-stripping tool, strip each of the two twisted pair wires coming from each DC-input power source to 0.25 inch (6.3 mm) ± 0.02 inch (0.5 mm). Do not strip more than 0.27 inch (6.8 mm) of insulation from the wire. Stripping more than the recommended amount of wire can leave exposed wire from the power connector after installation.

Step 5
Remove the two captive screws that attach the power and alarm connector to the router, and remove the connector.

Step 6
On the power and alarm connector, insert the exposed part of the positive wire into the connection labeled "V" and the exposed part of the return wire into the connection labeled "RT". Make sure that you cannot see any wire lead. Only wire with insulation should extend from the connector.

Note
Use the same method for wiring the alarm connections.
Connecting to the Router Ports

For hazardous location environments, follow these warnings when connecting to the destination ports (Fast Ethernet, console ports).

**Warning**
If you connect or disconnect the console cable with power applied to the equipment or any device on the network, an electrical arc can occur. This could cause an explosion in hazardous location installations. Be sure that power is removed or the area is nonhazardous before proceeding.

Statement 1080

**Warning**
Do not connect or disconnect cables to the ports while power is applied to the equipment or any device on the network because an electrical arc can occur. This could cause an explosion in hazardous location installations. Be sure that power is removed from the equipment and cannot be accidentally be turned on, or verify that the area is nonhazardous before proceeding.

Statement 1070

Connecting to the USB Port

**Note**
If you are connecting to the USB port:
- a connection (to the USB port) can only be made in a non-hazardous environment
- the USB port cover must be reinstalled before the router can be deployed in a hazardous environment

Hazardous Locations Standards and Marking Strings

The following standards were used for the hazardous locations approvals and certifications:

- ISA 12.12.01-15
- CSA CAN/CSA-C22.2 NO. 60079-0:15
- CSA CAN/CSA-C22.2 NO. 60079-15:16
- CSA C22.2 No. 213-16
- EN 60079-0:2012 +A11:2013
- EN 60079-15:2010
- IEC 60079-0 6th Edition
- UL 60079-0, 6th Edition
- UL 60079-15, 4th Edition
For EMC and safety information, see the Regulatory Compliance and Safety Information at this URL:

Class A Notice for FCC

Modifying the equipment without Cisco’s authorization may result in the equipment no longer complying with FCC requirements for Class A digital devices. In that event, your right to use the equipment may be limited by FCC regulations, and you may be required to correct any interference to radio or television communications at your own expense.

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to 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 of a Class A 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 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.

APAC Compliance

Cisco® 807 Industrial Integrated Services Router Model
IR807G-LTE
Cisco® 807 Industrial Integrated Services Router PIDS
Industry Canada

Canadian Compliance Statement

Cisco® 807 Industrial Integrated Services Router Model
IR807G-LTE
Cisco® 807 Industrial Integrated Services Router PIDS
- IR807G-LTE-VZ-K9
- IR807G-LTE-NA-K9
- IR807G-LTE-GA-K9

Industry Canada Certification Number
- IR807G-LTE

This Class A Digital apparatus meets all the requirements of the Canadian Interference-Causing Equipment Regulations. This device complies with Class A 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® 807 Industrial Integrated Services Routers are certified to the requirements of RSS-210. 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.

This device has been designed to operate with antennas having a maximum gain of 6 dBi. Antennas having a gain greater than 6 dBi are strictly prohibited for use with this device. The required antenna impedance is 50 ohms.

To reduce potential radio interference to other users, the antenna type and its gain should be so chosen that the equivalent isotropically radiated power (EIRP) is not more than that permitted for successful communication.

European Community, Switzerland, Norway, Iceland, and Liechtenstein

Cisco® 807 Industrial Integrated Services Router PID
- IR807G-LTE-GA-K9


The following standards were applied:
- EMC-EN 301 489-1 v1.9.2; EN 301 489-17 v2.2.1
- Health & Safety-EN60950-1; 2005; EN 50385 - 2002
- Radio-EN 300 328 v 1.9.1; EN 301 893 v 1.7.1, EN62311
The conformity assessment procedure referred to in Article 10.4 and Annex III of Directive 1999/5/EC has been followed.

This device also conforms to the EMC requirements of the Medical Devices Directive 93/42/EEC.

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.

The product carries the CE Mark:

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Declaration of Conformity for RF Exposure

This section contains information on compliance with guidelines related to RF exposure.

Generic Discussion on RF Exposure

The Cisco products are designed to comply with the following national and international standards on Human Exposure to Radio Frequencies:

- American National Standards Institute (ANSI) / Institute of Electrical and Electronic Engineers / IEEE C 95.1 (99)
- International Commission on Non Ionizing Radiation Protection (ICNIRP) 98
- Ministry of Health (Canada) Safety Code 6. Limits on Human Exposure to Radio Frequency Fields in the range from 3kHz to 300 GHz
- Australia Radiation Protection Standard

To ensure compliance with various national and international Electromagnetic Field (EMF) standards, the system should only be operated with Cisco approved antennas and accessories.

This Device Meets International Guidelines for Exposure to Radio Waves

The IR807 series device 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>
<thead>
<tr>
<th>Separation Distance</th>
<th>Limit</th>
</tr>
</thead>
<tbody>
<tr>
<td>MPE</td>
<td>Distance</td>
</tr>
<tr>
<td>0.63 mW/cm²</td>
<td>20 cm (7.87 inches)</td>
</tr>
</tbody>
</table>

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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 FCC Guidelines for Exposure to Radio Waves**

The IR807 series device 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 FCC Part 1.1310. The guidelines are based on IEEE ANSI C 95.1 (92) 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.

The device has been tested and found compliant with the applicable regulations as part of the radio certification process.

<table>
<thead>
<tr>
<th>MPE</th>
<th>Distance</th>
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<tbody>
<tr>
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<td>20 cm (7.87 inches)</td>
<td>0.00 mW/cm²</td>
</tr>
</tbody>
</table>

The US Food and Drug Administration has stated that present scientific information does not indicate the need for any special precautions for the use of wireless devices. The FCC recommends 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 or lowering the transmitter power output.

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

The IR807 series device 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>
<thead>
<tr>
<th>MPE</th>
<th>Distance</th>
<th>Limit</th>
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<tbody>
<tr>
<td>0.63 mW/cm²</td>
<td>20 cm (7.87 inches)</td>
<td>0.00 mW/cm²</td>
</tr>
</tbody>
</table>

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.

**Additional Information on RF Exposure**

You can find additional information on the subject at the following links:
EMC Class A Notices and Warnings

Statement 340—Class A Warning for CISPR22


Declaration of Conformity with Regard to the EU Directive 2014/53/EU

The information in this document is applicable to the Cisco IR807 series wireless LAN product that currently includes the IR807G-LTE-GA-K9.

The equipment operates in the 2400-MHz to 2483.5-MHz frequency range.

National regulations may require that operations be limited to portions of the frequency ranges identified above and/or at reduced power levels. See the “National Restrictions” section for complete details.

This declaration is only valid for configurations (combinations of software, firmware and hardware) provided and/or supported by Cisco Systems for use within the EU or countries that have implemented the EU Directives. The use of software or firmware not supported/provided by Cisco Systems may result that the equipment is no longer compliant with the regulatory requirements.

<table>
<thead>
<tr>
<th>Country</th>
<th>Statement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bulgarian</td>
<td>Това оборудване отговаря на съществените изисквания и приложими класузи на Директива 2014/53/EC.</td>
</tr>
<tr>
<td>Czech</td>
<td>Toto zařízení je v souladu se základními požadavky a ostatními odpovídajícími ustanoveními Směrnice 2014/53/EU.</td>
</tr>
<tr>
<td>Danish</td>
<td>Dette udstyr er i overensstemmelse med de væsentlige krav og andre relevante bestemmelser i Direktiv 2014/53/EU.</td>
</tr>
<tr>
<td>German</td>
<td>Dieses Gerät entspricht den grundlegenden Anforderungen und den weiteren entsprechenden Vorgaben der Richtlinie 2014/53/EU.</td>
</tr>
<tr>
<td>Estonian</td>
<td>See seade vastab direktiivi 2014/53/EL olulistele nõuetele ja teistele asjakohastele sätetele.</td>
</tr>
<tr>
<td>English</td>
<td>This equipment is in compliance with the essential requirements and other relevant provisions of Directive 2014/53/EU.</td>
</tr>
</tbody>
</table>
Note

The full declaration of conformity for this product can be found at: https://www.cisco.com/c/en/us/support/routers/807-industrial-integrated-services-routers/model.html.

See the Obtaining Documents from Cisco.com, page 17 section for instructions for downloading these documents.

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

- Radio: EN 301 893, EN 300 328
- EMC: EN 301 489-1, EN 301 489-17
- Safety: EN 60950-1
CE Mark

For the Cisco IR807-LTE, the following CE mark is affixed to the equipment and its packaging:

CE

National Restrictions

In the EU and other European Countries, the 2.4GHz and 5GHz bands have been made available for the use of wireless LANs.

The following sections identify countries having additional requirements or restrictions.

Denmark

In Denmark, the band 5150 - 5350 MHz is also allowed for outdoor usage.

I Danmark må frekvensbåndet 5150 - 5350 også anvendes udendørs.

Italy

This product meets the National Radio Interface and the requirements specified in the National Frequency Allocation Table for Italy. Unless this wireless LAN product is operating within the boundaries of the owner's property, its use requires a "general authorization". Please check http://www.comunicazioni.it/it/ for more details.


Latvia

The outdoor usage of the 2.4 GHz band requires an authorization from the Electronic Communications Office. Please check http://www.esd.lv for more details.


Note

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

The IR807 series products are equipped with antenna connectors to allow the use of dedicated (external) antennas available from Cisco.

The following link to the data sheet lists the antennas that can be used by the IR807 series. All antennas where 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 (radiated power) level that is below the applicable limit.

Note: The antenna gain mentioned does not include the cable loss. For all combinations, the total of power level, antenna gain, and cable loss is equal to or below 43.5 dBM (eirp).

Obtaining Documents from Cisco.com

Follow these steps to obtain any of the online documents mentioned in this document.

Step 1: Browse to this URL on Cisco.com:
http://www.cisco.com/cisco/web/psa/default.html?mode=prod&level0=278875243

Step 2: For Cisco IR807 Series wireless products, click:
https://www.cisco.com/cisco/web/psa/default.html?mode=prod&level0=278875243

Note: If you still have questions regarding the compliance of these products or you cannot find the information you are looking for, please send an email request to Cisco at complianceinfo@cisco.com.