

**IMPORTANT!**

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# Regulatory Compliance

## **ORiNOCO AP-4000MR-LR Access Point** **Safety and Regulatory Compliance Information** (August 2006)



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Please read this document before installing and using your product, and save these instructions.

## Products Covered in the Guide

This document contains important safety and regulatory compliance information for the following products:

Product	Model Numbers
ORiNOCO Tri-Mode Ruggedized Access Point AP-4000MR-LR	8670-MR-LR-US

Please see the following sections for more information:

- [Safety Information](#)
- [FCC Compliance Information](#)
- [Information for Professional Installers](#)
- [Certification Summary](#)

## Safety Information

This product has been evaluated to, and complies with, the Safety requirements of UL60950:2000, and IEC60950:1999; the Standards for the Safety of Information Technology Equipment. When using this device, basic safety precautions should always be followed to reduce the risk of fire, electric shock and injury to persons, including the following:

- Operate and install this product as described in this manual. This device must be installed and used in strict accordance with the manufacturer's instructions.
- This product is suitable for installation in air handling spaces (plenum).
- Use only the AC/DC power supply adapter provided. For replacement, contact your local supplier or distributor.
- To avoid the risk of electric shock from lightning, do not use this product during an electrical storm.
- Installation of this product must conform to local regulations and codes.
- When using this product with an external antenna, see the installation documentation provided with the antenna system.
- No user serviceable parts; all repairs and service must be handled by a qualified service center.

## FCC Compliance Information

This device operates in the 2.4 GHz and 5.75 - 5.85 bands in compliance 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.

To comply with the FCC radio frequency exposure requirements, the following antenna installation and device operating configurations must be satisfied:

- **Product models using external antennas require professional installation.**
- The antennas used for professional installation must be fixed-mounted on indoor/outdoor permanent structures with a separation distance of at least **123 cm** from all persons.
- Antennas must not be co-located and must not operate in conjunction with any other antenna or transmitter.

## Modifications

Changes or modifications to this device that are not expressly approved by the manufacturer of the product could void the user's authority to operate the equipment.

## Warnings

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 and correct the interference by one or more of the following measures:

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

## Information for Professional Installers

### Adjusting Tx Output Power

Use the following formula in combination with the table of EIRP limits to calculate system transmit power (based on EIRP limits):

$$\text{Tx Power Allowed (dBm)} = \text{EIRP Limit (dBm)} + \text{CL (dB)} - \text{G (dB)}$$

where:

Tx Power = Output power measured at the antenna input

EIRP Limit = EIRP limits specified below

CL = Coax cable loss including loss of connectors

G = Antenna Gain

Frequency (GHz)	EIRP Limit (dBm)
2.4 - 2.4835	36
5.725 - 5.850	36

### Antenna Types and Maximum Gain

Professional installers should select only the antenna types listed in the following table, with gain not exceeding the listed maximum gain for each type.

Frequency Band	Antenna Type	Maximum Gain (dBi)
2.4 GHz	Omni	12
	Flat Panel	14
	Sector	17
5 GHz	Omni	12
	Panel	28
	Sector	18

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## Certification Summary

Country	Certification/Reference Number
USA	HZB-4000LR
Canada	1856A-AP4000MRLR