

Introduction

The AP 300 Access Port, a component of the Motorola Wireless Switch System, links wireless 802.11a/b/g devices to the switch, enabling growth of your wireless network with a cost-effective alternative to standard access points. The AP 300 Access Port provides two placement options: wall and ceiling. Wall mount slots fit onto two screws provided. Arrows on the case guide placement of the screws. For placement above a suspended ceiling, a safety wire tie point on the case provides for a loop of safety wire. The light pipe fits through a hole in the ceiling tile to provide a view of the unit's status lights.

The AP 300 Access Port receives all power and transfers data through the same CAT-5 cable. There is no additional power supply required.

Technical Specifications

<i>Operating Voltage</i>	48VDC typical; 36-57VDC range
<i>Operating Current</i>	100mA to 165mA
<i>Peak Current</i>	250mA
<i>Operating Temperature</i>	-20°C to 50°C (-4°F to 122°F)
<i>Operating Humidity</i>	5% to 95% non-condensing
<i>Operating Altitude (max.)</i>	2438m (8,000ft.)
<i>Storage Temperature</i>	-40°C to 70°C (-40°F to 158°F)
<i>Storage Humidity</i>	85%
<i>Storage Altitude (max.)</i>	4572m (15,000ft.)
<i>Drop (without antennas)</i>	910mm (36in.) to concrete
<i>Electrostatic Discharge</i>	+/-15kV air; +/-8kV contact; +/-2kV pin
<i>Plenum Rated</i>	UL 2043

Dimensions & Weight

<i>Length</i>	235mm (9.25in.)
<i>Width</i>	146mm (5.75in.)
<i>Height</i>	25.4mm (1.0in.)
<i>Weight</i>	0.73kg (1.6lbs)

Radio Characteristics

The AP 300 Access Port is an IEEE 802.11-compliant device available in two models. The 802.11a/b/g model (WSAP-5100-100-WWR) contains one 802.11a radio and one 802.11b/g radio. The 802.11b/g model (WSAP-5100-050-WWR) contains one 802.11b/g radio. The following table lists radio characteristics for each radio's compliance. The three supported 802.11g modes are simultaneous CCK and OFDM, CCK only, or OFDM only.

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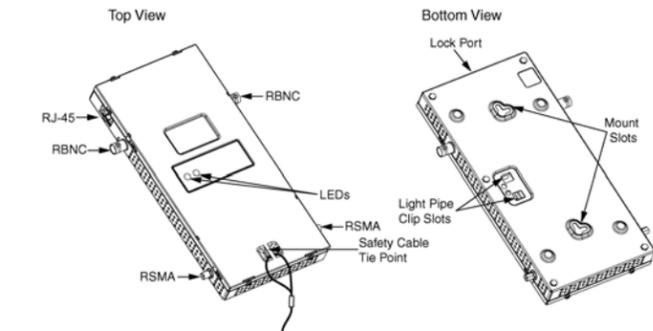
<i>Device</i>	<i>Mbps Data Rate Support</i>	<i>Utilizing Diversity</i>	<i>GHz</i>
802.11a	6, 9, 12, 18, 24, 36, 48, 54 OFDM	Transmit and receive	4.9 to 5.875 range
802.11b/g	1, 2, 5.5, 11 CCK 6, 9, 12, 18, 24, 36, 48, 54 OFDM	Transmit and receive	2.4 to 2.5 ISM range

AP 300 Access Port Package Contents

- AP 300 Access Port with external antenna connectors (Plenum Rated)
- Two wall mount screws
- Two wall anchors
- Light pipe
- Badge for light pipe
- Decal for badge
- Quick Installation Guide

Description

The AP 300 Access Port is an IEEE 802.11-compliant device available in two models: An 802.11a/b/g model (WSAP-5100-100-WWR) an 802.11b/g model (WSAP-5100-050-WWR) The unit supports external antennas, listed under Supported Antennas, and it requires power from any UL-listed, 802.3af-compatible Power Over Ethernet (PoE) switch or power injector.



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Features

- Supports a single antenna or dual antennas in diversity mode
- Reverse BNC connectors for 2.4-2.5Ghz and Reverse SMA connectors (WSAP-5100-100-WWR only) for 4.9-5.825Ghz (Primary Antenna connectors marked ● and Secondary Antenna connectors marked ●●)
- One RJ-45 connector
- Two redundant sets of LED indicators, top and bottom; slots next to the bottom LEDs are for a clip on the light pipe
- Point for a safety wire loop
- Laptop-style lock port
- Slots for wall mounting

The AP 300 Access Port has one RJ-45 connector supporting an 10/100 Ethernet port and requires 802.3af-compliant power from an external source.

The AP 300 Access Port 802.11a/b/g version (WSAP-5100-100-WWR) comprises two 802.11 radios: an 802.11b/g radio operating in the 2.4 to 2.5Ghz band and an 802.11a radio operating in the 4.9 to 5.875Ghz band. The AP 300 Access Port 802.11b/g version (WSAP-5100-050-WWR) comprises one 802.11 radio: an 802.11b/g radio operating in the 2.4 to 2.5Ghz band.

Motherboard firmware enables the unit to boot after either a power up or a watchdog reset. After self-boot, the motherboard sends an "I am alive" message into the network to be adopted and loaded with the actual runtime code. The boot firmware on the motherboard and the firmware downloaded from the switch can be updated via the Ethernet interface from the Wireless Switch.

Lock Port

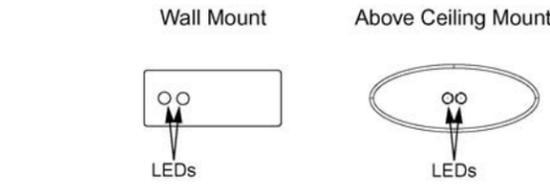
The lock port, compatible with laptop-style security cables, is on the side of the case.



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LED Indicators

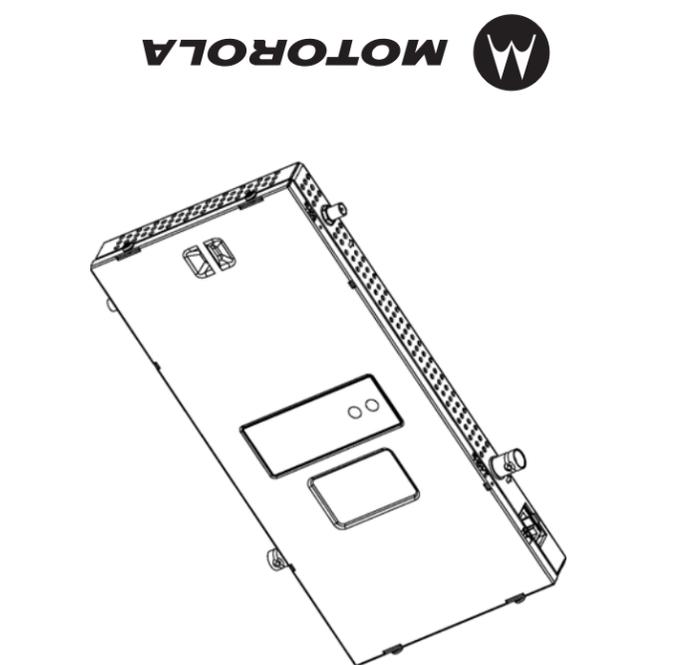
The unit has LED activity indicators on the front of the case for a wall mount. With the unit mounted above a ceiling, LEDs are at the center of an oval badge on the ceiling; a light pipe enables viewing the back LEDs through the ceiling tile.



The LEDs provide a status display indicating error conditions, transmission, and network activity for the 802.11a (amber) radio (WSAP-5100-100-WWR only) or the 802.11b/g (green) radio.

<i>Task</i>	<i>802.11a Activity LED Amber</i>	<i>802.11b/g Activity LED Green</i>
Booting	The amber LED flashes three times per second until firmware is loaded. During boot, 802.11a mobiles cannot associate.	The green LED flashes three times per second until firmware is loaded. During boot, 802.11b/g mobiles cannot associate.
Normal	After adoption, the amber LED is steady or flashes with 802.11a radio traffic.	After adoption, the green LED is steady or flashes with 802.11b/g radio traffic.
Error	The amber LED flashes once per second if an error prevents the 802.11a radio from operating normally.	The green LED flashes once per second if an error prevents the 802.11b/g radio from operating normally.

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WSAP-5100-100-WWR: 802.11 a/b/g External Antenna Model
WSAP-5100-050-WWR: 802.11 b/g External Antenna Model

AP 300 Access Port

Quick Installation Guide

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Warranty

(A) Warranty Motorola (hereafter "Seller") hardware Products are warranted against defects in workmanship and materials for a period of twelve (12) months from the date of shipment, unless otherwise provided by Seller in writing, provided the Product remains unmodified and is operated under normal and proper conditions. Warranty provisions and durations on software, integrated installed systems, Product modified or designed to meet specific customer specifications ("Custom Products"), remanufactured products, and reconditioned or upgraded products, shall be as provided in the applicable Product specification in effect at the time of purchase or in the accompanying software license.

(B) Spare Parts Spare parts (i.e. parts, components, or subassemblies sold by Seller for use in the service and maintenance of Products) are warranted against defects in workmanship and materials for a period of thirty (30) days from the date of shipment. Spare parts may be new or originate from returned units under the conditions set forth in subsection D below.

(C) Repair of Motorola-branded hardware For repairs on Motorola-branded hardware Products under this Agreement, including repairs covered by warranty, the repair services provided are warranted against defects in workmanship and materials on the repaired component of the Product for a period of thirty (30) days from the shipment date of the repaired Product, or until the end of the original warranty period, whichever is longer.

(D) Product Service Products may be serviced or manufactured with parts, components, or subassemblies that originate from returned products and that have been tested as meeting applicable specifications for equivalent new material and Products. The sole obligation of Seller for defective hardware Products is limited to repair or replacement (at Seller's option) on a "return to service depot" basis with prior Seller authorization. Customer is responsible for shipment to the Seller and assumes all costs and risks associated with this transportation; return shipment to the Customer will be at Seller's expense. Customer shall be responsible for return shipment charges for product returned where Seller determines there is no defect ("No Defect Found"), or for product returned that Seller determines is not eligible for warranty repair. No charge will be made to Buyer for replacement parts for warranty repairs. Seller is not responsible for any damage to or loss of any software programs, data or removable data storage media, or the restoration or reinstallation of any software programs or data other than the software, if any, installed by Seller during manufacture of the Product.

(E) Original Warranty Period Except for the warranty applying solely to the repaired component arising from a repair service as provided in Section C above, the aforementioned provisions do not extend the original warranty period of any Product that had either been repaired or replaced by Seller.

(F) Warranty Provisions The above warranty provisions shall not apply to any Product (i) which has been repaired, tampered with, altered or modified, except by Seller's authorized service personnel; (ii) in which the defects or damage to the Product result from normal wear and tear, misuse, negligence, improper storage, water or other liquids, battery leakage, use of parts or accessories not approved or supplied by Motorola, or failure to perform operator handling and scheduled maintenance instructions supplied by Seller; (iii) which has been subjected to unusual physical or electrical stress, abuse, or accident, or forces or exposure beyond normal use within the specified operational and environmental parameters set forth in the applicable Product specification; nor shall the above warranty provisions apply to any expendable or consumable items, such as batteries, supplied with the Product.

EXCEPT FOR THE WARRANTY OF TITLE AND THE EXPRESS WARRANTIES STATED ABOVE, SELLER DISCLAIMS ALL WARRANTIES ON PRODUCTS FURNISHED HEREUNDER INCLUDING ALL IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR USE. ANY IMPLIED WARRANTIES THAT MAY BE IMPOSED BY LAW ARE LIMITED IN DURATION TO THE LIMITED WARRANTY PERIOD. SOME STATES OR COUNTRIES DO NOT ALLOW A LIMITATION ON HOW LONG AN IMPLIED WARRANTY LASTS OR THE EXCLUSION OR LIMITATION OF INCIDENTAL OR CONSEQUENTIAL DAMAGES FOR CONSUMER PRODUCTS. IN SUCH STATES OR COUNTRIES, FOR SUCH PRODUCTS, SOME EXCLUSIONS OR LIMITATIONS OF THIS LIMITED WARRANTY MAY NOT APPLY.

The stated express warranties are in lieu of all obligations or liabilities on the part of Seller for damages, including but not limited to, special, indirect or consequential damages arising out of or in connection with the use or performance of the Product or service. Seller's liability for damages to Buyer or others resulting from the use of any Product or service furnished hereunder shall in no way exceed the purchase price of said Product or the fair market value of said service, except in instances of injury to persons or property.

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United States	1-800-653-5350	Canada	905-629-7226
United Kingdom	0800 328 2424	Asia/Pacific	+65-6796-9600
Australia	1-800-672-906	Austria/Stereitech	1-505-5794-0
Denmark/Danmark	7020-1718	Finland/Suomi	9-5407-580
France	01-40-96-52-21	Germany/Deutschland	607-4-49020
Italy/Italia	2-48441	Mexico/Mexico	5-520-1835
Netherlands/Nederland	315-271700	Norway/Norge	+47 2232 4375
South Africa	11-8095311	Spain/España	91 324 40 00
Sweden/Sverige	84452900	Outside Spain	+34 91 324 40 00
Latin America	1-800-347-0178	Inside US	1-800-347-0178
Sales Support	+1-954-255-2610	Outside US	+1-954-255-2610
Europe/Mid-East	Contact local distributor or call		
Distributor Operations	+44 118 945 7360		

72-101195-01
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Installation Instructions

The AP 300 Access Port mounts either on a wall with mounting screws or in the ceiling.

To prepare for installation, perform the following steps:

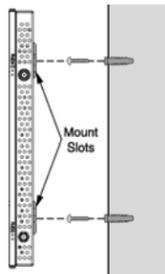
1. Match the model number on the purchase order with the model numbers in the packing list and on the case of the device shipped.
2. Verify that the contents of the box include the intended AP 300 Access Port and mounting hardware:

Item	Notes
WSAP-5100-100-WWR	802.11a and 802.11b/g configurations with external RSMA (.11a radio) and RBNC (.11g radio) antenna connectors. The antennae are separate purchasable items. Mounting Hardware: Two Phillips pan head self-tapping screws.
WSAP-5100-050-WWR	802.11b/g configuration with external RBNC (.11g radio) antenna connectors. The antennae are separate purchasable items. Mounting Hardware: Two Phillips pan head self-tapping screws.

3. Review site survey and network analysis reports to determine the location and mounting position for the AP 300 Access Port.
4. Connect a CAT-5 cable to a compatible 802.3af power source and run the cable to the installation site. Ensure that there is sufficient slack on the cable to perform the installation steps.

Wall Mount

Wall mounting requires hanging the AP 300 Access Port along its width or length using the pair of slots on the bottom of the unit. The AP 300 can be mounted onto any plaster, wood, or cement wall surface using the provided wall anchors when necessary. The illustration shows a lengthwise mount



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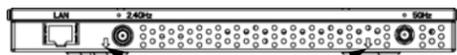
Wall Mount Hardware

- Two Phillips pan head self-tapping screws
- Two wall anchors
- Safety wire (recommended) and security cable (optional)

Note: In the event that the original mounting screws are lost, the following screws can be used instead:(ANSI Standard) #6-18 X 0.875in. Type A or AB Self-Tapping Screw, or (ANSI Standard Metric) M3.5 X 0.6 X 20mm Type D Self-Tapping Screw

Wall Mount Procedure

1. Orient the case on the wall by its width or length.
2. Using the arrows on one edge of the case as guides,



move the edge to the midline of the mounting area and mark points on the midline for the screws.

3. At each point, drill a hole in the wall, insert an anchor, screw into the anchor the wall mounting screw and stop when there is 1mm between the screw head and the wall.

Note: When pre-drilling a hole the recommended hole size is 2.8mm (0.11in.) if the screws are going directly into the wall and 6mm (0.23in.) if the provided wall anchors are being used.

4. If required, loop a safety wire, between 1.5mm (.06in.) and 2.5mm (.10in.) in diameter, around the tie post and secure the loop.
5. If required, install and attach a security cable to the unit's lock port.
6. Place the large corner of each of the case's mount slots over the screw heads.
7. Slide the case down along the mounting surface to hang the mount slots on the screw heads.
8. Attach appropriate antennas to the connectors.
9. Attach the Ethernet cable to the unit and to a switch with an 802.3af compatible power source.
10. Verify the unit has power by observing that the LEDs are lit or flashing.

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Suspended Ceiling Tile (Plenum) Mount

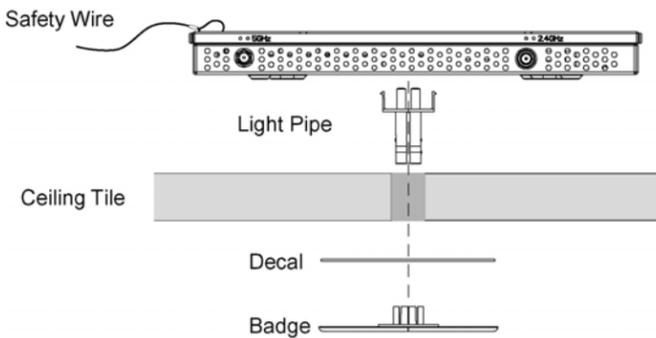
Ceiling mount requires placing the AP 300 Access Port above a suspended ceiling and installing the provided light pipe for viewing the status lights of the unit.

*Note:*Notes or warnings about suspended ceiling mounts apply to all installations where the unit is placed on suspended ceiling tile. The case has a safety wire tie point for a standard safety wire.

Caution:Motorola does not recommend mounting the AP 300 Access Port directly to any suspended ceiling tile with a thickness less than 12.7mm (0.5in.) or a suspended ceiling tile with an unsupported span greater than 660mm (26in.). Motorola strongly recommends fitting the AP 300 Access Port with a safety wire suitable for the specific installation. The safety wire should be a standard ceiling suspension cable or equivalent steel wire between 1.59mm (.062in.) and 2.5mm (.10in.) in diameter.

This placement requires installation of the provided light pipe for viewing the status lights of the unit.

Ceiling Mount Hardware



- Light pipe
- Badge for light pipe
- Decal for badge
- Safety wire (recommended) and security cable (optional)

Ceiling Mount Procedure

1. If possible, remove the ceiling tile from its frame and place it, finished side down, on a work surface.
2. If required, install a safety wire, between 1.5mm (.06in.) and 2.5mm (.10in.) in diameter, in the ceiling space.
3. If required, install and attach a security cable to the unit's lock port.
4. Mark a point on the upper or unfinished side of the tile.
5. Push the light pipe through the tile at the mark and remove the light pipe. If necessary, use a drill to make a hole in the tile.
6. Snap the clips of the light pipe into the bottom of the case.
7. Fit the light pipe into hole in the tile from its unfinished side.
8. Place the decal on the back of the badge and snap the badge onto the light pipe from the finished side of the tile.
9. Attach appropriate antennas to the connectors.
10. Attach any safety wire to the safety wire tie point or security cable to the unit's lock port.
11. Bring the tile into the ceiling space.
12. Plug the Ethernet cable into the the unit and to a switch with an 802.3af-compatible power source.
13. Verify the unit has power by observing the LEDs.
14. Place the ceiling tile back in its frame.

Supported Antennas

Contact a Motorola sales associate for these and other available AP 300 Access Port antenna options.

802.11b/g Antennas

Antenna Option	Part Number
2.4-2.5Ghz, 11.2dBi 120 Degree Sector Antenna	ML-2499-11PNA2-01R
2.4-2.5Ghz, 2dBi Fixed Point Dipole Antenna	ML-2499-APA2-01
2.4-2.5Ghz, 4.6dBi OMNI Antenna	ML-2499-HPA3-01R
2.4-2.5Ghz, 14.2dBi YAGI Antenna	ML-2499-BYGA2-01R

802.11a Antennas (WSAP-5100-100-WWR only)

Antenna Option	Part Number
4.9GHz to 5.825GHz, 2dBi RSMA Dipole Antenna	ML-5299-APA1-01R
4.9GHz to 5.825GHz, 14.2dBi Patch Antenna	ML-5299-WPNA1-01R
4.9GHz to 5.825GHz, 5.9dBi OMNI Antenna	ML-5299-HPA1-01R

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Regulatory Information

This device is approved under the Symbol Technologies brand; Symbol Technologies, Inc., is the Enterprise Mobility business of Motorola, Inc ("Motorola").

All Motorola devices are designed to be compliant with rules and regulations in locations they are sold and will be labeled as required. Any changes or modifications to Motorola equipment, not expressly approved by Motorola, could void the user's authority to operate the equipment.

Use only the approved antennas. Unauthorized antennas, modifications, or attachments could cause damage and may violate regulations.

This device is to be used only with the Motorola wireless switch family..

Country Approvals

Regulatory markings are applied to the device signifying the radio(s) are approved for use in the following countries: United States, Canada, Japan & Europe^{1,2}. Please refer to the Motorola *Declaration of Conformity* (DoC) for details of other country markings. This is available at <http://www2.symbol.com/doc/>.

*Note 1:*For 2.4GHz Products: Europe includes, Austria, Belgium, Croatia, Czech Republic, Croatia, Cyprus, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Liechtenstein, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Slovak Republic, Slovenia, Spain, Sweden, Switzerland, and the United Kingdom.

*Note 2:*The use of 5GHz RLAN's has varying restrictions of use; please refer to the Motorola *Declaration of Conformity* (DoC) for details.

Operation of the device without regulatory approval is illegal.

Frequency of Operation

The use on UNII (Unlicensed National Information Infrastructure) Band 1 5150-5250 MHz is restricted to indoor use only.

Safety in Hospitals

Wireless devices transmit radio frequency energy and may affect medical electrical equipment. When installed adjacent to other equipment, it is advised to verify that the adjacent equipment is not adversely affected.

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FCC/EU RF Exposure Guidelines



Safety Information

The device complies with Internationally recognised standards covering Specific Absorption Rate (SAR) related to human exposure to electromagnetic fields from radio devices. It is advisable to use the device only in the normal operating position.

Remote and Standalone Antenna Configurations

To comply with FCC RF exposure requirements, antennas that are mounted externally at remote locations or operating near users at stand-alone desktop or similar configurations must operate with a minimum separation distance of 20 cm from all persons.

Power Supply

This device is powered from a 802.3af compliant power source which is UL approved.

Radio Frequency Interference Requirements

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 the separation between the equipment and receiver
- Connect the equipment into 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.

Radio Transmitters (Part 15)

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.

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Radio Frequency Interference Requirements – Canada

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.

Radio Transmitters

This device complies with RSS 210 of Industry & Science 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.

Label Marking: The Term "IC:" before the radio certification only signifies that Industry Canada technical specifications were met.

CE Marking and European Economic Area (EEA)

The use of 2.4GHz RLAN's, for use through the EEA, have the following restrictions:

- Maximum radiated transmit power of 100 mW EIRP in the frequency range 2.400 -2.4835 GHz
- France, outside usage is restricted to 2.4-2.454 GHz
- Belgium, outside usage is restricted to 2.460-2.4835 GHz
- Italy requires a user license for outside usage.

The use of 5GHz RLAN's has varying restrictions for use within the EEA; please refer to the Motorola Declaration of Conformity (DoC) for details at <http://www2.symbol.com/doc/>.

Statement of Compliance

Motorola hereby, declares that this device is in compliance with the essential requirements and other relevant provisions of Directive 1999/5/EC. A Declaration of Conformity may be obtained from <http://www2.symbol.com/doc/>.

Other Countries

Mexico - Restrict Frequency Range to: 2.450 - 2.4835 GHz.

Sri Lanka - Restrict Frequency Range to: 2.400 – 2.430 GHz.

Motorola's Enterprise Mobility Support Center

If you have a problem with your equipment, contact Enterprise Mobility support for your region. Contact information is available at: <http://www.symbol.com/contactsupport>.

When contacting Enterprise Mobility support, please provide the following information:

- Serial number of the unit
- Model number or product name
- Software type and version number

Motorola responds to calls by email, telephone or fax within the time limits set forth in support agreements. If you purchased your Enterprise Mobility business product from a Motorola business partner, contact that business partner for support.

Customer Support Web Site

Motorola's Support Central Web site, located at www.symbol.com/support provides information and online assistance including developer tools, software downloads, product manuals and online repair requests.

Downloads

<http://symbol.com/downloads>

Manuals

<http://symbol.com/manuals>

General Information

Obtain additional information by contacting Motorola at:

1-800-722-6234, inside North America

+1-516-738-5200, in/outside North America

<http://www.motorola.com/>

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