NX 9500 Enterprise NOC Wireless LAN Controller Installation Guide

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Service Information

If you have a problem using the equipment, contact your facility's Technical or Systems Support. If there is a problem with the equipment, they will contact the Motorola Solutions Support at:
http://www.motorolasolutions.com/support

Introduction

The NX 9500 NoC controller lets you centrally administer networks up to 10,000 WLAN access points geographically dispersed over numerous telecommuter and small or medium sized enterprise locations. WiNG 5 access points intelligently handle the traffic flows, quality of service, mobility and security at remotely distributed locations, while the NX 9500 provides a single point for configuration, policy setting, and remote troubleshooting. Hotspot configuration, security policy management, and statistics aggregation are all done by one powerful NoC controller. This efficient WLAN architecture makes controlling the network easier, and reduces the hardware expense required to support large networks.

Document Conventions

The following graphical alerts are used in this document to indicate notable situations:

NOTE   Tips, hints, or special requirements that you should take note of.

CAUTION   Care is required. Disregarding a caution can result in data loss or equipment malfunction.

WARNING!   Indicates a condition or procedure that could result in personal injury or equipment damage.

Warnings

- Read all installation instructions and site survey reports, and verify correct equipment installation before connecting the appliance to its power source.

- Remove jewelry and watches before installing this equipment.

- Verify the unit is grounded before connecting it to the power source.

- Verify any device connected to this unit is properly wired and grounded.

- Connect all power cords to a properly wired and grounded electrical circuit.

- Verify the electrical circuits have appropriate overload protection.

- Attach only approved power cords to the device.

- Verify the power connector and socket are accessible at all times during the operation of the equipment.

- Do not work with power circuits in dimly lit spaces.

- Do not install this equipment or work with its power circuits during thunderstorms or other weather conditions that could cause a power surge.

- Verify there is adequate ventilation around the device, and ambient temperatures meet equipment operation specifications.

Site Preparation

- Consult your site survey and network analysis reports to determine specific equipment placement, power drops, and so on.

- Assign installation responsibility to the appropriate personnel.

- Identify and document where all installed components are located.

- Provide a sufficient number of power drops for your equipment.

- Ensure adequate, dust-free ventilation to all installed equipment.

- Identify and prepare Ethernet and console port connections.

- Verify cable lengths are within the maximum allowable distances for optimal signal transmission.

Getting Started

This guide provides a pre-installation checklist and instructions for installing the NX 9500, accessing the *Graphical User Interface* (GUI), and performing initial configuration.

Pre-installation Checklist

Location & Equipment

NX 9500 shipping container contents:

- NX 9500 controller

- Locking front bezel with keys

- Mounting rail kit

- NX 9500 Wireless LAN Controller Installation Guide

✓	**NOTE**	Keep the front bezel keys in a secure location which can only be accessed by authorized personnel.

Additional Equipment Recommended

- Standard, grounded 100-240 VAC 50/60 Hz connection

- UPS (uninterruptable power supply)

- Standard 19-inch rack (2U height) with mounting rails.

Network Access Requirements

- TCP 22—used for SSH (protocol 2 only) access for occasional administrative tasks.

Cautionary Statements

⚠	***CAUTION***	There are no user-serviceable components inside the NX 9500. Opening the chassis will void the warranty.

⚠	***CAUTION***	BIOS settings on the NX 9500 should not be changed. Changing any settings in the BIOS will void all warranty on the NX 9500

⚠	***CAUTION***	To prevent the controller from overheating, never install in an enclosed area not properly ventilated or cooled. For proper airflow, keep the front and back sides of the controller clear of obstructions and away from the exhaust of other equipment.

⚠	***CAUTION***	The recommended NX 9500 ambient operating temperature is 10ºC - 35ºC (50ºF - 95ºF). Installation in a closed or multi-rack assembly may raise the immediate ambient temperature above the average room temperature. Exercise due caution.

⚠	***CAUTION***	Ensure the electrical circuit through which the NX 9500 is powered can safely accommodate a 750 Watt power supply.

⚠	***CAUTION***	Motorola Solutions highly recommends you connect the NX 9500 to an *Uninterruptible Power Supply* (UPS). There are instances in which the system software could become corrupt and un-recoverable in the event of power loss, for example, during a system upgrade, database backup or database restore operation.

Safety Instructions for Rack Mount Installations

 WARNING!   An NX 9500 requires a two man lift. Use all appropriate cautions.

- Rack Mount Brackets—Do not lift the NX 9500 using the rack mount brackets.

- Rack Mount Rails—Use only industry-standard mounting kits when installing the NX 9500, as improper mounting may result in hardware failure and hazardous conditions. Motorola recommends using the using the mounting rails included with the NX 9500.

- Elevated Operating Ambient—If installing the NX 9500 in a closed or multi-unit rack assembly, the operating ambient temperature of the rack environment may be greater than the room ambient. Consideration should be given to installing the appliance in an environment compatible with the _maximum ambient temperature_ (Tma) specified by the manufacturer.

- Reduced Air Flow—Installation of the NX 9500 in a rack should be such that the amount of air flow required for safe operation of the equipment is not compromised.

- Mechanical Loading—Mounting the NX 9500 in a rack should be such that a hazardous condition is not achieved due to uneven mechanical loading.

- Circuit Overloading—Consideration should be given when connecting the NX 9500 to the supply circuit so that protection is provided to the NX 9500 and supply wiring if any circuit overloads occur. Appropriate consideration of the equipment nameplate ratings should be used when addressing this concern.

- Reliable Earthing—Reliable earthing of the rack mounted NX 9500 should be maintained.

- Particular attention should be given to supply connections other than direct connections to the branch circuit (e.g., use of power strips).

Specifications

Physical Specifications

Width	16.93 inches (17.77 inches with rails)
Height	3.44 inches (2U)
Depth	27.75 inches
Weight	47 pounds

Environmental Specifications

Operating Temperature	0°C to 35°C
Storage Temperature	-40°C to 70°C
Operating Humidity	5% to 85% RH (non-condensing)
Storage Humidity	5% to 85% RH (non-condensing)
Operating Altitude	Maximum 10,000 ft. @ 35° C

Power Specifications

Input Voltage	100 to 240VAC, 50/60Hz, redundant power supply
Input Power	750W (maximum)

A power cord is not supplied with the NX series platform. Use only a correctly rated power cord certified (as appropriate) for the country of operation.

Power Protection

- **If possible, use a circuit dedicated to data processing equipment.** Commercial electrical contractors are familiar with wiring for data processing equipment and can help with the load balancing of these circuits.

- **Install surge protection.** Be sure to use a surge protection device between the electricity source and the NX series platform.

- **Install an Uninterruptible Power Supply (UPS).** A UPS provides continuous power during a power outage. Some UPS devices have integral surge protection. UPS equipment requires periodic maintenance to ensure reliability. A UPS of the proper capacity for the data processing equipment must be purchased.
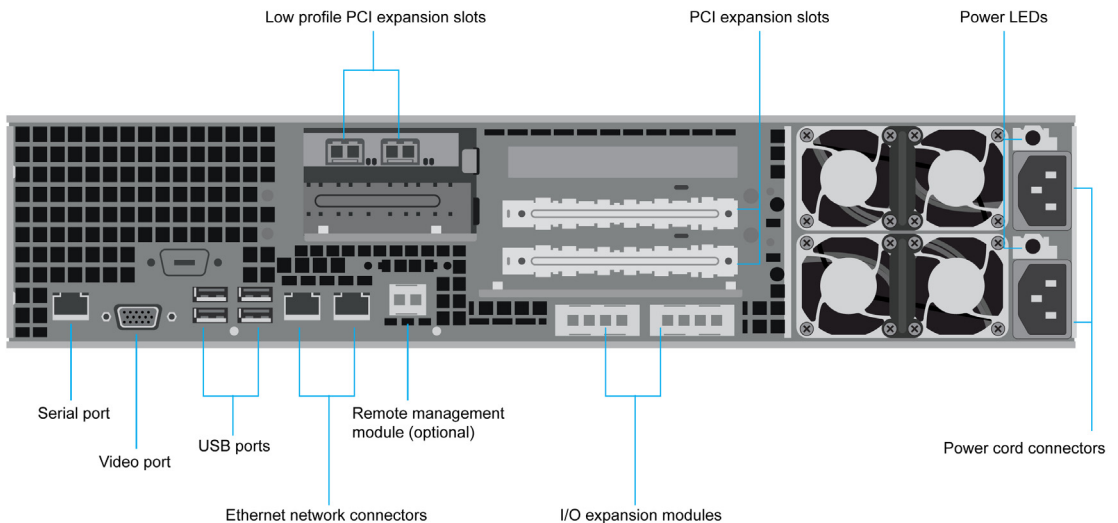
Hardware Installation

The following sections describe the hardware installation for the NX 9500 controller:

⚠️ **WARNING!**   An NX 9500 requires a two man lift. Use all appropriate cautions.

Installing the NX 9500

1. Complete the instructions supplied with the rail kit to mount the NX 9500 in an equipment rack.


2. Connect the power cords for both power supplies.
3. Connect the Ethernet cables, and connect the controller to the network.
4. Connect a standard VGA monitor to the video port on the back of the controller.
5. Connect a keyboard and mouse to the USB ports on the back of the controller.
6. Gently press the power button to apply power to the controller.
7. When the WING login prompt is displayed, press *enter* to activate the console window.
8. In the console window, login using username *admin* and password *motorola*.
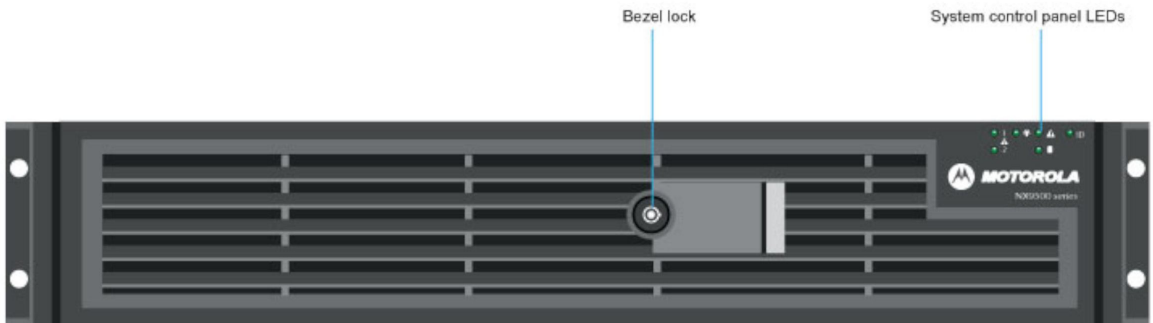9. When prompted, enter a new password, then enter it again to confirm it.

✓ **NOTE**   Use of the serial port for the NX 9500 is not supported.

Applying Power to the Controller

1. Gently press the power button to apply power to the controller.
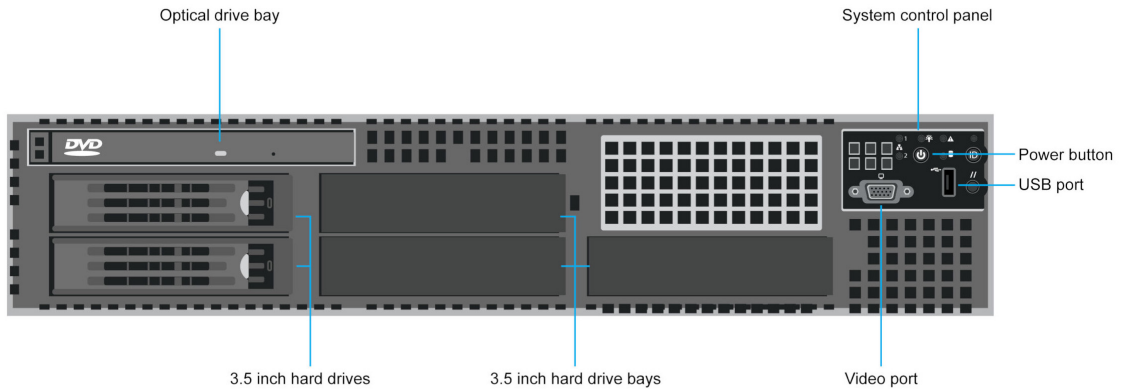
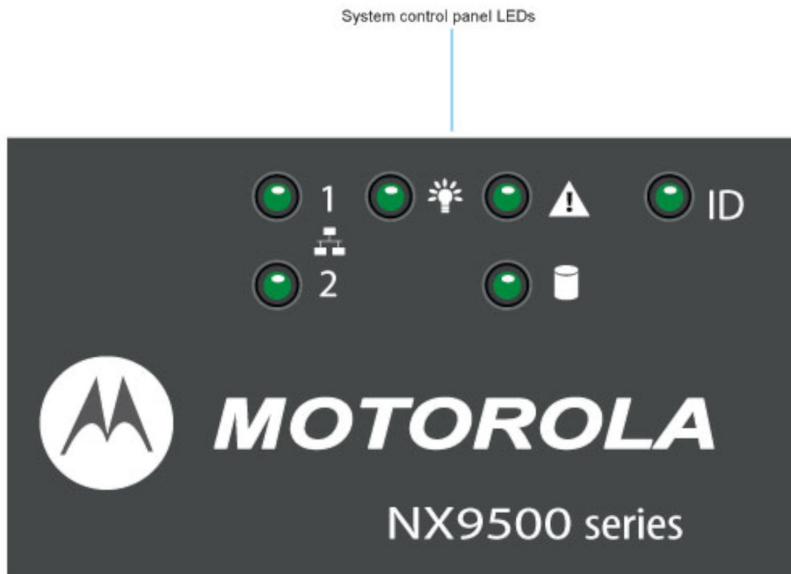2. Attach the front bezel between the rack mount brackets on the sides of the controller.

3. Lock the front bezel.

✓ **NOTE** Keep the front bezel keys in a secure location only accessed by authorized personnel.

Control Panel LEDs

The control panel houses six LEDs indicating the controller's operating state. The LEDs are visible when the front bezel is attached.
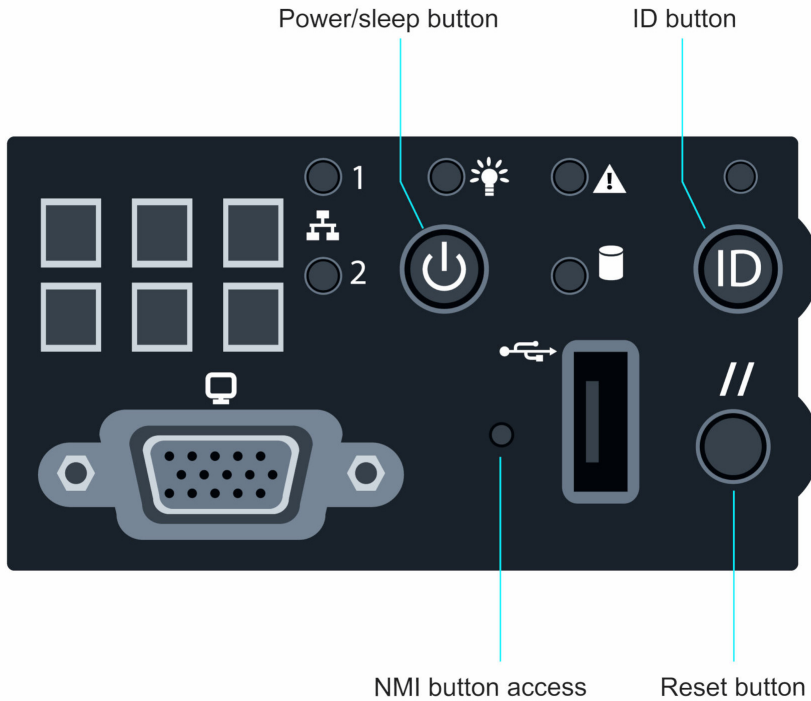
Remove the front bezel to access the control panel.

Hard drive activity LED

LED	Color	State	Description
NIC1/NIC2	Green	On Blink	NIC link Normal NIC activity
Power and sleep	Green	On Blink	Power on Sleep mode
System status	Green	On Blink	Normal operation Degraded operation
	Amber	On Blink	Critical or non-recoverable condition Non-critical condition
Hard drive activity	Green	Random blink	Indicates normal disc activity
System identity	Blue	On	Identify active system via command or button

Control Panel Buttons

The control panel assembly houses four control buttons.

Power/sleep button   ID button

NMI button access   Reset button

Button	Function
Power/Sleep	Turns the system power on/off.
ID	Toggles the ID LED on and off. The server board ID LED is visible on the back of the controller to allow for server identification when mounted in a rack.
Reset	Reboots the system.
NMI	Access to the NMI button requires a special tool. When the NMI button is pressed, the controller halts normal operations and is placed in diagnostic mode. Data stored in memory can then be downloaded to help diagnose any problems.

Error Beep Codes

The *Power-on Self Test (POST)* generates an error beep to inform users of error conditions. A series of three beeps indicates the system halted because of a due to an error related to controller memory limitations.
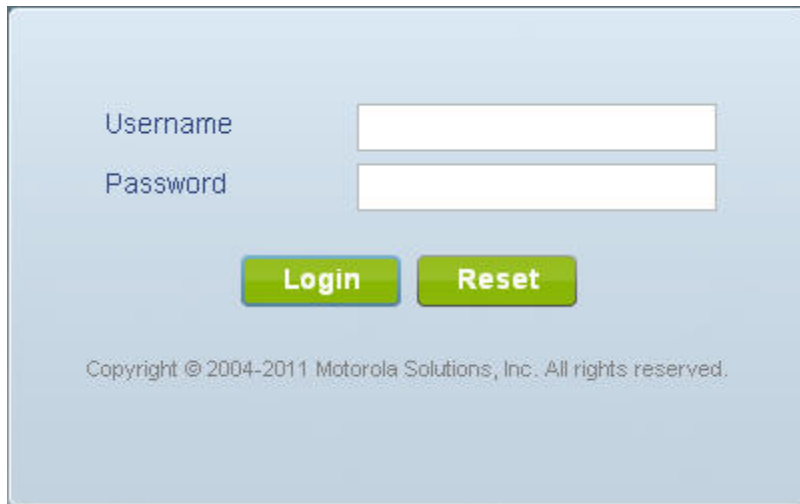
The error beep codes generated by the *Baseboard Management Controller (BMC)* are listed in the table below:

Code Sequence	*Description*
1-5-2-1	No CPUs installed or the first CPU socket is empty
1-5-4-2	Power Fault
1-5-4-4	Power control fault

Using the NX 9500 Management Interface

Once the NX 9500 hardware is installed and powered on, complete the following to access the management functions on the controller:

1. Connect one end of an Ethernet cable to one of the ports on the back of the NX 9500, and connect the other end to a computer with a working Web browser.
2. Set the computer to use an IP address between 192.168.0.10 and 192.168.0.254 on the connected port. Set a subnet /network mask of 255.255.255.0.
3. Once the computer has an IP address, point the Web browser to: https://192.168.0.1/ and the following login screen will display:

Username
Password

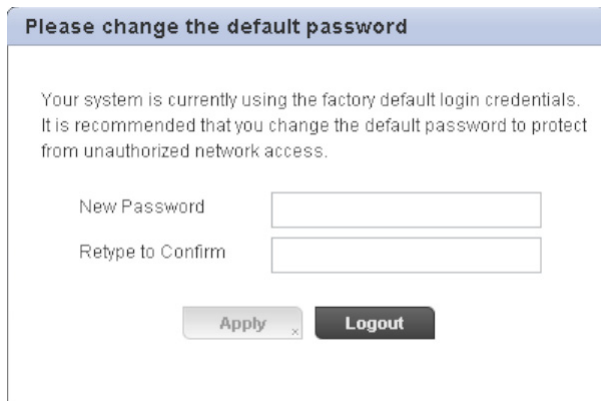Login   Reset

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4. Enter the default username *admin* in the **Username** field.
5. Enter the default password *motorola* in the **Password** field.
6. Click **Login**. You are then prompted to change your password.

Please change the default password

Your system is currently using the factory default login credentials. It is recommended that you change the default password to protect from unauthorized network access.
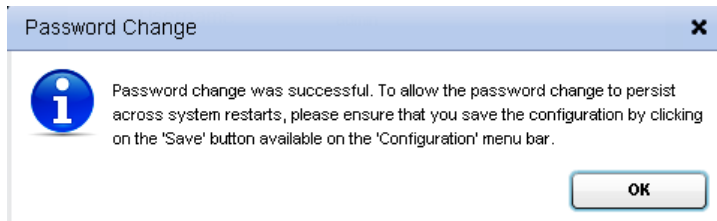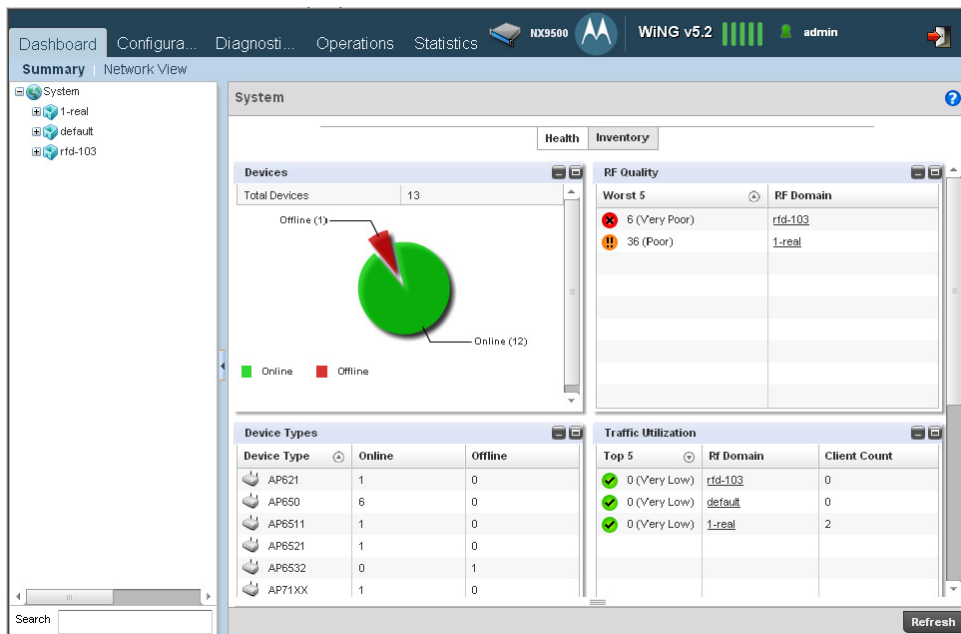
New Password
Retype to Confirm

Apply   Logout

7. Enter a new password, then enter it again to confirm it.

8.   Click **Apply**. The password change is confirmed.

9.   Click **OK**. The NX 9500 Dashboard is displayed.

You have now established a connection to the NX 9500 management interface.

10.   For software configuration, please see the current System Reference Guide available from the Motorola Solutions website at *http://support.symbol.com/support/product/manuals.do*.

Regulatory Information

This device is approved under the Motorola Solutions, Inc. brand ("Motorola").

| | **NOTE** | All regulatory references to model NX 9500 are equivalent to MODEL: E2900 R2 as found on the hardware product label. |

This guide applies to the NX 9500 series devices.

All Motorola Solutions devices are designed to be compliant with rules and regulations in locations they are sold and will be labeled as required.

Local language translations are available at the following website:
http://supportcentral.motorola.com/support/product/manuals.do.

Any changes or modifications to Motorola Solutions equipment, not expressly approved by Motorola Solutions, could void the user's authority to operate the equipment.

| | **CAUTION** | Operation of the device without regulatory approval is illegal. |

| | **WARNING!** | This product is designed and approved for indoor deployments only and is not intended to be connected to exposed (outdoor) networks. |

Laser Devices - DVD/CD Rewritable Drive

Complies with 21CFR1040.10 and 1040.11 except for deviations pursuant to Laser Notice No. 50, dated June 24, 2007 and IEC 60825-1 (Ed. 2.0), EN 60825-1: 2007.

The laser classification is marked on the device.

Class 1 Laser devices are not considered to be hazardous when used for their intended purpose. The following statement is required to comply with US and international regulations:

| | **CAUTION** | Use of controls, adjustments or performance of procedures other than those specified herein may result in hazardous laser light exposure. |

Radio Frequency Interference Requirements - FCC

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. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in commercial environment. This equipment generates, uses, and can radiate radio

frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

Radio Frequency Interference Requirements - Canada

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

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

ϵ ⟨ **Marking and European Economic Area (EEA)**

⚠ **WARNING!** This is a class A product. In a domestic environment, this product may cause radio interference in which case the user may be required to take adequate measures.

Statement of Compliance

Motorola Solutions hereby declares that this device is in compliance with all the applicable Directives, 2004/108/EC, 2006/95/EC. A Declaration of Conformity may be obtained from *http://www.motorola.com/doc*.

Japan (VCCI) - Voluntary Control Council for Interference
Class A ITE

> この装置は、情報処理装置等電波障害自主規制協議会（ＶＣＣＩ）の基準に基づくクラスＡ情報技術装置です。この装置を家庭環境で使用すると電波妨害を引き起こすことがあります。この場合には使用者が適切な対策を講ずるよう要求されることがあります。

This is a Class A product based on the standard of the Voluntary Control Council for Interference by Information Technology Equipment (VCCI). If this equipment is used in a domestic environment, radio interference may occur, in which case, the user may be required to take corrective actions.

Waste Electrical and Electronic Equipment (WEEE)

English: For EU Customers: All products at the end of their life must be returned to Motorola for recycling. For information on how to return product, please go to: http://www.motorola.com/recycling/weee.

Français: Clients de l'Union Européenne: Tous les produits en fin de cycle de vie doivent être retournés à Motorola pour recyclage. Pour de plus amples informations sur le retour de produits, consultez : http://www.motorola.com/recycling/weee.

Español: Para clientes en la Unión Europea: todos los productos deberán entregarse a Motorola al final de su ciclo de vida para que sean reciclados. Si desea más información sobre cómo devolver un producto, visite: http://www.motorola.com/recycling/weee.

Bulgarish: За клиенти от ЕС: След края на полезния им живот всички продукти трябва да се връщат на Motorola за рециклиране. За информация относно връщането на продукти, моля отидете на адрес: http://www.motorola.com/recycling/weee.

Deutsch: Für Kunden innerhalb der EU: Alle Produkte müssen am Ende ihrer Lebensdauer zum Recycling an Motorola zurückgesandt werden. Informationen zur Rücksendung von Produkten finden Sie unter http://www.motorola.com/recycling/weee.

Italiano: per i clienti dell'UE: tutti i prodotti che sono giunti al termine del rispettivo ciclo di vita devono essere restituiti a Motorola al fine di consentirne il riciclaggio. Per informazioni sulle modalità di restituzione, visitare il seguente sito Web: http://www.motorola.com/recycling/weee.

Português: Para clientes da UE: todos os produtos no fim de vida devem ser devolvidos à Motorola para reciclagem. Para obter informações sobre como devolver o produto, visite: http://www.motorola.com/recycling/weee.

Nederlands: Voor klanten in de EU: alle producten dienen aan het einde van hun levensduur naar Motorola te worden teruggezonden voor recycling. Raadpleeg http://www.motorola.com/recycling/weee voor meer informatie over het terugzenden van producten.

Polski: Klienci z obszaru Unii Europejskiej: Produkty wycofane z eksploatacji nale¿y zwróciæ do firmy Motorola w celu ich utylizacji. Informacje na temat zwrotu produktów znajduj¹ siê na stronie internetowej http://www.motorola.com/recycling/weee.

Čeština: Pro zákazníky z EU: Všechny produkty je nutné po skonèení jejich životnosti vrátit spoleènosti Motorola k recyklaci. Informace o zpùsobu vrácení produktu najdete na webové stránce: http://www.motorola.com/recycling/weee.

Eesti: EL klientidele: kõik tooted tuleb nende eluea lõppedes tagastada taaskasutamise eesmärgil Motorola'ile. Lisainformatsiooni saamiseks toote tagastamise kohta külastage palun aadressi: http://www.motorola.com/recycling/weee.

Magyar: Az EU-ban vásárlóknak: Minden tönkrement terméket a Motorola vállalathoz kell eljuttatni újrahasznosítás céljából. A termék visszajuttatásának módjával kapcsolatos tudnivalókért látogasson el a http://www.motorola.com/recycling/weee weboldalra.

Svenska: För kunder inom EU: Alla produkter som uppnått sin livslängd måste returneras till Motorola för återvinning. Information om hur du returnerar produkten finns på http://www.motorola.com/recycling/weee.

Suomi: Asiakkaat Euroopan unionin alueella: Kaikki tuotteet on palautettava kierrätettäväksi Motorola-yhtiöön, kun tuotetta ei enää käytetä. Lisätietoja tuotteen palauttamisesta on osoitteessa http://www.motorola.com/recycling/weee.

Dansk: Til kunder i EU: Alle produkter skal returneres til Motorola til recirkulering, når de er udtjent. Læs oplysningerne om returnering af produkter på: http://www.motorola.com/recycling/weee

Ελληνικά: Για πελάτες στην Ε.Ε.: Όλα τα προϊόντα, στο τέλος της διάρκειας ζωής τους, πρέπει να επιστρέφονται στην Motorola για ανακύκλωση. Για περισσότερες πληροφορίες σχετικά με την επιστροφή ενός προϊόντος, επισκεφθείτε τη διεύθυνση http://www.motorola.com/recycling/weee στο Διαδίκτυο.

Malti: Għal klijenti fl-UE: il-prodotti kollha li jkunu waslu fl-aħħar tal-ħajja ta' l-użu tagħhom, iridu jiġu rritornati għand Motorola għar-riċiklaġġ. Għal aktar tagħrif dwar kif għandek tirritorna l-prodott, jekk jogħġbok żur: http://www.motorola.com/recycling/weee.

Românesc: Pentru clienţii din UE: Toate produsele, la sfârşitul duratei lor de funcţionare, trebuie returnate la Motorola pentru reciclare. Pentru informaţii despre returnarea produsului, accesaţi: http://www.motorola.com/recycling/weee.

Slovenski: Za kupce v EU: vsi izdelki se morajo po poteku življenjske dobe vrniti podjetju Motorola za reciklažo. Za informacije o vra ilu izdelka obiš ite: http://www.motorola.com/recycling/weee.

Slovenčina: Pre zákazníkov z krajín EU: Všetky výrobky musia byť po uplynutí doby ich životnosti vrátené spoločnosti Motorola na recykláciu. Bližšie informácie o vrátení výrobkov nájdete na: http://www.motorola.com/recycling/weee.

Lietuvių: ES vartotojams: visi gaminiai, pasibaigus jų eksploatacijos laikui, turi būti grąžinti utilizuoti į kompaniją „Motorola". Daugiau informacijos, kaip grąžinti gaminį, rasite: http://www.motorola.com/recycling/weee.

Latviešu: ES klientiem: visi produkti pēc to kalpošanas mūža beigām ir jānogādā atpakaļ Motorola otrreizējai pārstrādei. Lai iegūtu informāciju par produktu nogādāšanu Motorola, lūdzu, skatiet: http://www.motorola.com/recycling/weee.

Türkçe: AB Müşterileri için: Kullanım süresi dolan tüm ürünler geri dönüştürme için Motorola'ya iade edilmelidir. Ürünlerin nasıl iade edileceği hakkında bilgi için lütfen şu adresi ziyaret edin: http://www.motorola.com/recycling/weee.

Turkish WEEE Statement of Compliance
EEE Yönetmeliğine Uygundur

Motorola Solutions Support Center

If you have a problem with your equipment, contact support for your region.

Contact information is available at: *http://motorolasolutions.com/support*.

When contacting Motorola Solutions support, please provide the following information:

• Serial number of the unit

• Model number or product name

• Software type and version number

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

Customer Support Web Sites

The Motorola Solutions Support Central Web site, located at *http://www.motorolasolutions.com/support* provides information and online assistance including developer tools, software downloads, product manuals and online repair requests.

Manuals

http://support.symbol.com/support/product/manuals.do

General Information

Obtain additional information by contacting Motorola Solutions at:

Telephone (North America): 1-800-722-6234

Telephone (International): +1-631-738-5200

Website: *http://motorolasolutions.com*