FX9500 RFID READER

Regulatory Guide

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Warranty

For the complete Motorola hardware product warranty statement, go to:
http://www.motorola.com/enterprisemobility/warranty

Introduction

The FX9500 RFID Reader is a multi-protocol, multi-regional Radio Frequency Identification (RFID) System that operates in the 860 - 960 MHz UHF band.
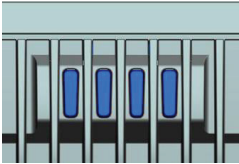

Figure 1-1   *FX9500 RFID Reader*

As shown in Figure 1-2, the high performance FX9500 RFID Reader supports up to eight Tx/Rx antennas (8x1 monostatic or 4x2 bistatic) and is equipped with RS-232, USB 2.0, and Ethernet interfaces. Discrete digital inputs and outputs are also provided.

Figure 1-2   *FX9500 Power and I/O Connections*

The FX9500 RFID Reader is equipped with four status indicators located on the top of the enclosure. These LEDs provide indication for the following:

- Sense - Indicates RFID Reader has detected a tag in the RF field
- Transmit - Indicates the RFID Reader's transmitter is operating (RF on)
- Fault - Indicates a fault occurred
- Power - Indicates that power is applied to the RFID Reader.

Figure 1-3 *FX9500 RFID Reader Status Indicators*

Reader Software

The FX9500 is shipped with a software application called the *Web Console* that can be used to configure and control the RFID Reader.The Web Console is an embedded RFID Reader application that provides the ability to access RFID Readers across the internet. Enter the IP address of the RFID Reader into a web browser and the Web Console allows you to fully modify and operate the RFID Reader. This application provides the ability to modify the RFID Reader's communication, network, and operational parameters. Also, the ability to read tags, review tag data, perform diagnostics, and upload new software. This application is primarily intended for configuring and managing deployed RFID Readers. For detailed information, refer to the *FX9500 RFID Reader User Guide*.

FX9500 Installation and Usage

Refer to the *FX9500 User Guide, p/n 72E-150900-xx* for more information on the following installation and usage instructions:

- **Mechanical Installation**
  - Mounting the RFID Reader
  - Mounting the Antennas
- **Electrical Installation**
  - Connecting the Serial Port
  - Connecting the USB Ports
  - Connecting and Configuring the Ethernet Port
  - Connecting the Antennas
  - Connecting Digital Inputs/Outputs
  - Connecting the Power
- **RFID Reader Operation with Web Console**
- **Configuring Web Console**
  - Basic Configuration
  - Advanced Functions
- **Configuring Digital Inputs/Outputs**
  - Digital Inputs and Digital Outputs
  - Digital I/O Monitoring and Control Scripts
  - Digital Input Alarm Generation
  - Digital I/O Hardware Connection

Related Documents

- FX9500 User Guide, p/n 72E-150900-xx

For the latest version of this guide and all guides, go to:
http:supportcentral.motorola.com.

Health and Safety Recommendations

Ergonomic Recommendations

Caution: In order to avoid or minimize the potential risk of ergonomic injury follow the recommendations below. To prevent employee injury, consult with the local Health & Safety Manager to ensure compliance with the required safety programs.

- Reduce or eliminate repetitive motion
- Maintain a natural position
- Reduce or eliminate excessive force
- Keep objects that are used frequently within easy reach
- Perform tasks at correct heights
- Reduce or eliminate vibration
- Reduce or eliminate direct pressure
- Provide adjustable workstations
- Provide adequate clearance
- Provide a suitable working environment
- Improve work procedures

Regulatory Information

This guide applies to Model Number: FX9500.

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 web site: http://supportcentral.motorola.com

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

Motorola devices are professionally installed. The Radio Frequency Output Power will not exceed the maximum allowable limit for the country of operation.

Antennas: Use only the supplied or an approved replacement antenna. Unauthorized antennas, modifications, or attachments could cause damage and may violate regulations.

Country Approvals

Regulatory markings, subject to certification, are applied to the device signifying the radio is approved for use in the following countries: United States, Canada, China, S. Korea, Australia, and Europe[1].

Please refer to the Motorola Declaration of Conformity (DoC) for details of other country markings. This is available at http://www.motorola.com/doc.

Note[1]: For 2.4GHz or 5GHz Products: Europe includes, Austria, Belgium, Bulgaria, Czech Republic, Cyprus, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Liechtenstein, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovak Republic, Slovenia, Spain, Sweden, Switzerland and the United Kingdom.

⚠ Operation of the device without regulatory approval is illegal.

Country Selection

Select only the country in which you are using the device. Any other selection will make the operation of this device illegal.

⚠ Warnings for Use of Wireless Devices

Please observe all warning notices with regard to the usage of wireless devices.

Potentially Hazardous Atmospheres

You are reminded of the need to observe restrictions on the use of radio devices in fuel depots, chemical plants etc. and areas where the air contains chemicals or particles (such as grain, dust, or metal powders).

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.

Pacemakers

Pacemaker manufacturers recommended that a minimum of 15 cm (6 inches) be maintained between a handheld wireless device and a pacemaker to avoid potential interference with the pacemaker. These recommendations are

consistent with independent research and recommendations by Wireless Technology Research.

⚠️ **CAUTION** Persons with pacemakers should ALWAYS keep the device more than 15cm (6 inches) from their pacemaker when turned ON.

Use with Hearing Aids

When some wireless devices are used near some hearing devices (hearing aids and cochlear implants), users may detect a buzzing, humming, or whining noise. Some hearing devices are more immune than others to this interference noise, and wireless devices also vary in the amount of interference they generate. In the event of interference you may want to consult your hearing aid supplier to discuss solutions.

Other Medical Devices

Please consult your physician or the manufacturer of the medical device, to determine if the operation of your wireless product may interfere with the medical device.

⚠️ **RF Exposure Guidelines**

Safety Information

Reducing RF Exposure - Use Properly
Only operate the device in accordance with the instructions supplied.

International

The device complies with internationally recognized standards covering human exposure to electromagnetic fields from radio devices. For information on "International" human exposure to eletromagnetic fields, refer to the Motorola Declaration of Conformity (DoC) located at the following web address: http://www.motorola.com/doc.

Europe

To comply with EU RF exposure requirements, antennas that are mounted externally at remote locations or operating near user's at stand-alone desktop of similar configurations must operate with a minimum separation distance of 24 cm from all persons.

US and Canada

To comply with FCC RF exposure requirements, antennas that are mounted externally at remote locations or operating near users at stand-alone desktop of similar configurations must operate with a minimum separation distance of 24cm from all persons.

Power Supply

Use ONLY a LISTED Motorola, Type no. 50-14000 or PWRS-14000 (24 Vdc/3.25 A max), direct plug-in power supply, marked Class 2 or LPS (IEC60950-1, SELV). Use of alternative Power Supply will invalidate any approvals given to this unit and may be dangerous.

Battery

⚠️ **CAUTION** Risk of explosion if battery is replaced by an incorrect type. Dispose of used batteries according to the instructions.

Air Handling Space Applications

This device is suitable for use in Environmental Air Handling Space (EAHS) in accordance with Section 300-22(c) of the National Electric Code, and Sections 2-128, 12-010(3) and 12-100 of the Canadian Electrical Code, Part 21, CSA C22.1.

All Cables intended for interconnecting the FX9500 to other devices shall be suitable rated for use in Environmental Air Handling Space per UL 2043.

Devices such as Power Adaptors, PoE (Power Injectors), antennas shall not be installed in the Environmental Air Handling Space unless they are suitable for use in the EAHS per UL 2043.

FC Tested to comply with FCC Standards
FOR HOME OR OFFICE USE

Radio Frequency Interference Requirements-FCC

Note: 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.

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 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.

Ce dispositif est conforme à la norme CNR-210 d'Industrie Canada applicable aux appareils radio exempts de licence. Son fonctionnement est sujet aux deux conditions suivantes: (1) le dispositif ne doit pas produire de brouillage

préjudiciable, et (2) ce dispositif doit accepter tout brouillage reçu, y compris un brouillage susceptible de provoquer un fonctionnement indésirable.

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

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.

This device has been designed to operate with the antennas having a maximum gain of 6dBi. Antennas not included in this list or having a gain greater than 6dBi are strictly prohibited for use with this device. The required antenna impedance is 50 ohms.

Marking and European Economic Area (EEA)

RFID devices for use through the EEA have the following restrictions:

• Maximum radiated transmit power of 2W ERP.

Statement of Compliance

Motorola Solutions 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://www.motorola.com/doc

Korea Warning Statement for Class B ITE

기 종 별	사 용 자 안 내 문
B 급 기기 (가정용 방송통신기기)	이 기기는 가정용 (B 급) 으로 전자파적합등록을 한 기기로서 주로 가정에서 사용하는 것을 목적 으로 하며 , 모든 지역에서 사용할 수 있습니다 .

Other Countries

Brazil

Declarações Regulamentares para FX9500

Nota: "A marca de certificação se aplica ao Transceptor, modelo FX9500. Este equipamento opera em caráter secundário, isto é, não tem direito a proteção contra interferência prejudicial, mesmo de estações do mesmo tipo, e não pode causar interferência a sistemas operando em caráter primário."

Para maiores informações sobre ANATEL consulte o site: www.anatel.gov.br

Chile

"Este equipo cumple con la Resolución No 403 de 2008, de la Subsecretaria de telecomunicaciones, relativa a radiaciones electromagnéticas."

Taiwan

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，指依電信規定作業之無線電通信。
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。

China

合格证

Thailand

"เครื่องโทรคมนาคมและอุปกรณ์นี้ มีความสอดคล้องตามข้อกำหนดของ กทช."

For 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.

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.

Čeština: Pro zákazníky z EU: Všechny produkty je nutné po skončení jejich životnosti vrátit společnosti Symbol k recyklaci. Informace o způsobu vrácení produktu najdete na webové stránce: 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.

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.

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.

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.

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.

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.

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.

Latviešu: ES klientiem: visi produkti pēc to kalpošanas mūža beigām ir jānogādā atpakaļ Motorola otreizējai pārstrādei. Lai iegūtu informāciju par produktu nogādāšanu Motorola, lūdzu, skatiet: 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.

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.

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.

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 należy zwrócić do firmy Motorola w celu ich utylizacji. Informacje na temat zwrotu produktów znajdują się na stronie internetowej 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.

Romanesc: Pentru clien ii din UE: Toate produsele, la sfâr itul duratei lor de func ionare, trebuie returnate la Motorola pentru reciclare. Pentru informa ii despre returnarea produsului, accesa i: 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 vraèilu izdelka obišèite: 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.

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.

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.

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 Motorola Solutions Support at: http://supportcentral.motorola.com

For the latest version of this guide go to: http://supportcentral.motorola.com