

MOTOROLA RFID AT-A-GLANCE



MAXIMIZE THE BENEFITS OF RFID WITH MOTOROLA'S
COMPLETE RFID PRODUCT PORTFOLIO FOR FEDERAL
GOVERNMENT AGENCIES



**MAXIMIZE
THE VALUE OF
RFID IN YOUR
GOVERNMENT
AGENCY WITH
MOTOROLA RFID
SOLUTIONS.**












IMPROVE OPERATIONAL EFFICIENCY, ACCURACY AND ACCOUNTABILITY WITH REAL-TIME DATA COLLECTION

Automate and error-proof many of your most time-consuming and labor-intensive tasks with Motorola's RFID solutions. With the broadest portfolio of RFID readers in the industry, there is a Motorola RFID reader that can help you manage any asset more efficiently. With our RFID solutions you can:






- Instantly locate high-value military equipment moving in and out of the warehouse, ensuring constant availability.
- Automatically identify vehicles to ensure that only authorized personnel gain access to secured parking areas.
- Move the millions of shipments traveling through the defense supply chain to the right destination — faster and more accurately.
- Track IT assets in real time, improving inventory accuracy and the security of sensitive government data.
- Automatically check identities at border crossings, increasing security without creating long lines.

MOTOROLA'S FAMILY OF RFID READERS

	Description	Operating System	CPU	Memory	Expansion Slot	Display	Keyboard	Sealing	Drop Spec	Tumble Tested	Data Capture	RFID Standards	Wireless	Security	Warranty	Recommended Service
HANDHELD AND HANDS-FREE RFID READERS																
	The MC3090-Z RFID handheld reader is the first business-class handheld RFID reader designed specifically for customer-facing and business environments. The device starts with Motorola signature rugged design and high performance, then adds the ergonomics required for all day comfort and ease of use in retail stores, healthcare facilities and more. At just half the weight of its industrial counterparts, the MC3090-Z is the lightest UHF RFID rugged handheld reader on the market, with a well-balanced design and a convenient gun-style grip for read-intensive applications. A groundbreaking new antenna combines the benefits of linear and circular polarization, offering the best of both antenna technologies for superior read range and coverage. And our best-in-class advanced data capture technologies let workers read RFID tags and scan 1D bar codes with the same device.	Microsoft® Windows® Mobile 6.1	Intel XScale™ Bulverde PXA270 @ 520 MHz	128MB RAM; 1GB Flash	N/A	3 in. QVGA color	48-key alphanumeric	IP54; meets and exceeds MIL-STD 810F	4 ft./1.2 m across the operating temperature range	500 1.64 ft./0.5 m tumbles at room temperature (1,000 hits)	Gen 2 RFID tags and 1D bar codes	EPC Gen 2 (DRM compliant up to 0.5W)	802.11a/b/g; WPAN Bluetooth® (regional dependent)	N/A	1 year	Service from the Start with Device Management (North America); Service from the Start with Comprehensive Coverage
	Like the MC3090-Z, the MC3190-Z RFID combines our signature rugged design with the ergonomics required for all day use. At just half the weight of its industrial counterparts, the MC3190-Z offers a well-balanced design and convenient gun-style grip for read-intensive applications in customer-facing and business environments. Our advanced, high efficiency RFID reader engine delivers faster read rates and higher throughput. The groundbreaking antenna combines the benefits of linear and circular polarization for superior read range and coverage. And the MC3190-Z increases application versatility throughout the enterprise with the ability to read RFID tags, as well as capture 1D and 2D bar codes. (MC3190-Z for US RFID frequencies available Q2 2011.)	Microsoft® Windows® Mobile 6.5	Marvell PXA320 @ 624 MHz	256MB RAM; 1GB Flash	N/A	3 in. QVGA color	48-key alphanumeric	IP54; meets and exceeds MIL-STD 810F	4 ft./1.2 m across the operating temperature range	500 1.64 ft./0.5 m tumbles at room temperature (1,000 hits)	Gen 2 RFID tags, omnidirectional reading of 1D and 2D bar codes	EPC Gen 2 (DRM compliant up to 0.5W)	802.11a/b/g; WPAN Bluetooth® (regional dependent)	FIPS 140-2 support (select models)	1 year	Service from the Start with Comprehensive Coverage
	The industrial-class MC9090 RFID brings handheld, on-the-spot RFID capabilities to the most extreme environments. These multimodal RFID readers provide mobile workers with all the tools needed to get the job done right and fast — with 1D/2D bar code scanning, digital imaging, RFID tag reading and writing, and wireless connectivity to business applications. With handheld RFID, you're able to extend RFID to remote areas where fixed readers cannot reach. And throughout the supply chain, workers are able to pinpoint items, handle exceptions, pricing audits and changes, stock picking and more right on the fly. This versatile device supports global deployments around the world.	Microsoft® Windows® Mobile 6.1 and 5.0 Premium Edition	Intel XScale™ Bulverde PXA270 @ 624 MHz	64MB RAM; 128MB ROM	SD/MMC card	3.8 in. QVGA color	53-key alphanumeric	IP64 (electronic enclosure, display and keypad)	6 ft./1.8 m drops per MIL-STD 810G specifications	2,000 3.2 ft./1 m tumbles at room temperature (4,000 hits)	Gen 1 (Class 0 & Class 1) and Gen 2 RFID tags, omnidirectional reading of 1D and 2D bar codes; image capture	EPC Gen 1 (Class 0 and Class 1), Gen 2	802.11a/b/g; WPAN Bluetooth®	FIPS 140-2 support (select models)	1 year	Service from the Start with Device Management (North America); Service from the Start with Comprehensive Coverage
	Motorola's MC9090-Z RFID handheld reader for U.S.-based frequencies gives your workers the ability to capture a comprehensive range of data. This multi-function device can read RFID tags, images and 1D bar codes from near to far as well as 2D bar codes. Its extended range allows the MC9090-Z to capture data in remote areas that fixed RFID readers simply can't reach. Motorola's advanced RFID reader engine delivers superior read rates and higher throughput for increased productivity. Single device simplicity translates into a simpler and more cost-effective mobility architecture, since there are fewer devices to purchase, support and manage. And the rugged design helps ensure reliable performance in the harshest environments.	Microsoft® Windows® Mobile 6.1 and 5.0 Premium Edition	Intel XScale™ Bulverde PXA270 @ 624 MHz	64MB RAM; 128MB ROM	SD/MMC card	3.8 in. QVGA color	53-key alphanumeric	IP64 (electronic enclosure, display and keypad)	6 ft./1.8 m drops per MIL-STD 810G specifications	2,000 3.2 ft./1 m tumbles at room temperature (4,000 hits)	Gen 1 (Class 0 & Class 1) and Gen 2 RFID tags, omnidirectional reading of 1D and 2D bar codes; image capture	EPC Gen 1 (Class 0 and Class 1), Gen 2	802.11a/b/g; WPAN Bluetooth®	N/A	1 year	Service from the Start with Device Management (North America); Service from the Start with Comprehensive Coverage
	The DS9808-R hybrid presentation imager is the first combination 1D/2D bar code scanner and RFID reader for hands-free and handheld data capture. In addition to UHF RFID tags, the DS9808-R delivers record swipe speeds for 1D and 2D bar codes, as well as the ability to capture images and signatures. It can also capture and parse the PDF417 bar codes on U.S. driver's licenses and other AAMVA compliant ID cards for auto-population. The result? Extraordinary flexibility to accommodate virtually any type of inventory management technology at the POS — all with a single cost-effective device. <i>Available in the United States, Canada, and Mexico.</i>	N/A	N/A	N/A	N/A	N/A	N/A	N/A	4 ft./1.2 m drops to concrete	N/A	Gen 2 RFID tags; 1D/2D bar codes; images and signatures	EPC Gen 2 (DRM compliant up to 0.5W)	N/A	N/A	3 years	Service from the Start Advance Exchange Support

	Description	Read Points	External Interfaces	Network	Security	Frequency	European ETSI EN 302 208 Standard	Tag Protocol	Host Interface Protocols	Management Protocols	Rugged Specs.	Operating Temp.	Operating System	Memory	Warranty	Recommended Service
FIXED RFID READERS																
	Easy to deploy, use, and manage, the FX7400 fixed RFID reader is ideally suited for indoor, space-constrained, customer-facing environments. This high performance reader packs best-in-class RFID features into a sleek, attractive form factor that is less than half the size of a typical fixed industrial RFID reader. With a low profile and impressive array of integrated features and functionality, the FX7400 makes RFID cost-effective for business class applications such as item-level inventory management, IT asset management and more. The plenum rating increases deployment flexibility — this reader can be safely mounted above a drop ceiling or below a raised floor, virtually invisible to customers and employees. Power over Ethernet (POE) eliminates the need for costly power drops, while other advanced features such as auto-discovery and remote configuration simplify management and offer easy integration into your existing technology environment.	4 read points (4 transmit; 4 receive)	2 inputs, 2 outputs, optically isolated (Terminal Block); USB Client — USB Type B	10/100 BaseT Ethernet (RJ45) with PoE support	N/A	North America: 902 MHz-928 MHz, EU: 865 MHz-868 MHz Other global frequencies as regionally defined	•	EPC Gen 2 (Dense Reader Mode)	LLRP	RM 1.0.1 (with XML over HTTP/HTTPS and SNMP binding); AirBEAM firmware upgrade (Level 2 support)	•	-4° F to 131 °F -20° C to 55° C	Microsoft® Windows® CE 5.0 (Core)	64MB Flash; 64MB DRAM	1 year	Advanced Services for RFID; Service from the Start On Site System Support
	The XR450 is an industrial-class, fixed RFID reader designed for business-critical, dense-reader deployments. With both mono-static and bi-static antenna operation capability, the reader has the flexibility to meet a wide range of application and environment needs. Superior read rates and enhanced read ranges make it ideal for multiple RFID applications — from dock doors and conveyor belts to the warehouse floor or storefront. Reliable and efficient tag reading in dense RF environments eliminates interference issues associated with multiple RFID readers in close proximity. The XR450 fixed reader provides ease of integration and comprehensive application flexibility, including support for direct application hosting; standard back-end platforms from IBM, Microsoft, SAP and others; and the ability to interact with industrial automation equipment such as conveyors.	4 mono-static ports - or - 4 bi-static ports	Control IO Port; DB15 USB Host; USB Type A USB Client; USB Type B RS232 Serial Console; DB9	10/100 BaseT Ethernet; RJ45	N/A	UHF band — 902-928 MHz US	•	EPC Gen 2 (Dense Reader Mode)	XML and Byte Stream; LLRP	SNMP and AirBeam level 2	IP53	-4° F to 141 °F -20° C to 60° C	Microsoft® Windows® CE 5.0 Professional	64MB Flash; 64MB DRAM	1 year	Advanced Services for RFID; Service from the Start On Site System Support
	The XR480 industrial-class fixed RFID reader is designed for European deployments. With both mono-static and bi-static antenna operation capability, the reader has the flexibility to meet a wide range of application and environment needs in large-scale European RFID deployments. Superior read rates and enhanced read ranges make it ideal for multiple RFID applications — from dock doors and conveyor belts to the warehouse floor or storefront. Reliable and efficient tag reading in dense RF environments eliminates interference issues associated with multiple RFID readers in close proximity. And the XR480 is based on the Windows® CE operating system with support for up to eight read points — to increase flexibility and reduce the complexity of your RFID implementations.	8 mono-static ports - or - 4 bi-static ports	Control IO Port; DB15 USB Host; USB Type A US Client; USB Type B RS232 Serial Console; DB9	10/100 BaseT Ethernet; RJ45	N/A	EU band — 865 MHz-868 MHz	•	EPC Gen 2 (Dense Reader Mode)	XML and Byte Stream; LLRP	SNMP and AirBeam level 2	IP53	-4° F to 141 °F -20° C to 60° C	Microsoft® Windows® CE 5.0 Professional	64MB Flash; 64MB DRAM	1 year	Advanced Services for RFID; Service from the Start On Site System Support
MOBILE RFID READERS																
	The rugged RD5000 Mobile RFID reader extends the reach of your RFID network. Self-contained and cable-free, this compact reader can be easily installed anywhere — on material handling equipment such as forklifts, on mobile carts, portable skate wheel conveyors or even in hard to reach places where a cabled fixed reader would not be practical. Designed for true mobility and rugged use, the device provides real-time wireless LAN connectivity so assets and inventory are easily tracked as they move throughout your operations. The result is a new level of granular real-time information — allowing you to achieve a new level of productivity and efficiency throughout your enterprise.	N/A	N/A	802.11a/b/g; WPAN	FIPS 140-2 certified	UHF band — 902-928 MHz US	N/A	EPC Gen 2 (Dense Reader Mode)	N/A	N/A	IP66; drop spec. 30 in./76.2 cm to concrete; over 3500 70-g and 21,600 60-g shocks	-4° F to 122° F -20° C to 50° C	Microsoft® Windows® CE 5.0	64MB Flash; 64MB DRAM	1 year	Advanced Services for RFID; Service from the Start On Site System Support

MOTOROLA'S FAMILY OF RFID ANTENNAS

	Description	Type/ Gain	Frequency Range	Operating Temp.	Sealing	Rugged Tested	Worldwide Use	Services
RFID ANTENNAS								
 <p>AN200</p>	<p>The general purpose AN200 RFID antenna can be used reliably in a wide range of indoor and outdoor environments, from the warehouse to the production line to the docking zone. Its rugged design withstands a range of environmental conditions from extreme heat and cold to moisture and vibration. The AN200 Antenna can be used in standard RFID applications at power levels of up to 1 watt and in customized applications at power levels up to 20 watts.</p>	<p>General purpose, indoor/outdoor RFID antenna</p> <p>6 dBi</p>	<p>900-928 MHz</p> <p>(Will perform reasonably well in EU frequency in most applications)</p>	<p>-40° F to 149° F -40° C to 65° C</p>	N/A	<p>Cold, heat, temperature, shock, humidity, rain, salt fog, random vibration</p>	● *	N/A
 <p>AN400</p>	<p>The AN400 dual-element antenna brings a new level of operational efficiency to areas previously too large to accommodate RFID technology. Its wide read field and high-speed RF signal conversion allows fast and accurate communication of EPC-compliant passive tag data. These high-performance area antennas are easy to mount on ceilings and walls to create superior read zones around shelves, doorways and dock doors — anywhere boxes and pallets are moving into and out of a facility.</p>	<p>High-performance dual RFID antenna, ideal for bi-static operation</p> <p>6 dBi</p>	<p>900-928 MHz</p> <p>(Will perform reasonably well in EU frequency in most applications)</p>	<p>32° F to 122° F 0° C to 50° C</p>	N/A	<p>Cold, heat, temperature, shock, humidity, rain, salt fog, random vibration</p>	● *	N/A
 <p>AN480</p>	<p>The AN480 single port antenna offers the flexibility and performance required to meet the needs of enterprises around the world. A perfect complement to Motorola's FX7400 RFID Reader, the AN480 can be installed throughout the enterprise in manufacturing and warehouse floor environments or any dock door receiving application. A low axial ratio delivers a more uniform gain for superior performance. And as with all Motorola antennas, the AN480 uses our standard mounting bracket — so mounting the antenna for the first time or upgrading an existing Motorola antenna with the AN480 is fast and easy.</p>	<p>High-performance indoor wide band RFID antenna</p> <p>6 dBi</p>	<p>865-956 MHz</p>	<p>-40° F to 149° F -40° C to 65° C</p>	IP54	<p>Cold, heat, temperature, shock, humidity, rain, salt fog, random vibration</p>	●	N/A
 <p>AN710</p>	<p>The compact AN710 RFID antenna offers all the features required for carpeted and customer-facing environments. A low gain antenna (3.5 dBi), the AN710 is extremely compact and offers the sleek aesthetics needed for discrete installation in the most space-constrained spaces — for example, under the point of sale (POS) counter. And an integrated mounting bracket enables easy installation in minutes.</p>	<p>Compact general purpose indoor antenna</p> <p>3.5 dBi</p>	<p><i>US and Canada:</i> 900-928 MHz <i>Europe:</i> 865-868 MHz</p>	<p>-22° F to 158° F -30° C to 70° C</p>	N/A	N/A	●	N/A
 <p>AN720</p>	<p>Similar to the AN710, the AN720 RFID antenna features a compact form factor and discrete aesthetics for customer-facing environments. Together, the two models provide coverage wherever you need it — the AN710 on the sales floor and the AN720 at the dock door or outdoor shopping areas. The device is built for rough environments — it's impact and vibration resistant and can withstand exposure to rain, snow and extreme temperatures.</p>	<p>Compact rugged indoor-outdoor antenna</p> <p>3.5 dBi</p>	<p><i>US and Canada:</i> 900-928 MHz <i>Europe:</i> 865-868 MHz</p>	<p>-22° F to 158° F -30° C to 70° C</p>	IP67	<p>Cold, heat, temperature, shock, humidity, rain, salt fog, random vibration</p>	●	N/A

* The AN400 and AN200 will perform reasonably well in EU frequency in most applications.

RFID Antenna Notices

Repairs of Motorola RFID antennas for fixed readers may require the use of Motorola proprietary parts (and/or Motorola proprietary information). Motorola will sell these parts (and provide this proprietary information) only to end-user customers for self-service. Applicable in the U.S. For all other countries, please contact the Motorola account manager in your area for further details.

The antenna frequency specification and label is a characteristic trait of the antenna's peak frequency response. The RFID reader, when professionally installed and selected for a country of operation, dictates the actual frequency of transmission/reception to ensure regulatory compliance for operation in a designated country. The actual frequency specification of the antenna is not material to regulatory compliance.

**WITH THE BROADEST PORTFOLIO
OF RFID READERS IN THE INDUSTRY,
THERE IS A MOTOROLA RFID
READER THAT CAN HELP YOU
MANAGE ANY ASSET MORE
EFFICIENTLY — FROM MILITARY
EQUIPMENT, VEHICLES,
COMPUTERS AND HARD DRIVES
TO THE MILLIONS OF ITEMS IN THE
DEFENSE SUPPLY CHAIN.**

Motorola Solutions, Inc. 1301 E. Algonquin Road, Schaumburg, Illinois 60196 U.S.A. motorola.com/federal

MOTOROLA, MOTO, MOTOROLA SOLUTIONS and the Stylized M Logo are trademarks or registered trademarks of Motorola Trademark Holdings, LLC and are used under license. All other trademarks are the property of their respective owners. ©2011 Motorola, Inc. All rights reserved.

