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MC9090-Z RFID

Handheld RFID Reader for US-Based Frequencies

EMPOWER MOBILE WORKERS WITH REAL-TIME COMPREHENSIVE ADVANCED DATA CAPTURE CAPABILITIES IN A RUGGED HANDHELD COMPUTER

Streamline your business operations, reduce errors, and increase your productivity and profitability with the power of the MC9090-Z RFID Handhelds from Motorola. The device provides mobile workers throughout the supply chain with complete data capture functionality and real-time connectivity to critical business applications. Workers can read RFID tags, and capture 1D, 1D at extended ranges and 2D bar codes as well as images, ensuring seamless integration throughout the enterprise. Handheld, on-the-spot RFID capabilities remove the dependency on fixed readers installed at typical choke points, enabling efficient exception handling, pricing audits and changes, stock picking and more.

The MC9090-Z is designed to withstand rigorous use in extreme environments and a wide variety of working conditions, providing the flexibility to be used on the manufacturing floor, in the warehouse, on the loading dock, and out in the yard as well as in the back room or out on the sales floor of a retail operation. An anywhere, anytime wireless connection provides the real-time information needed to streamline business processes, increase productivity and enable more strategic decision-making. Support for wireless printing, wireless headsets and more via wireless PAN simplifies everyday use for end-users, while the ergonomic pistol-grip design provides comfort in scan intensive applications, such as shelf price audits and inventory management.

EASY-TO-USE ROBUST LOCATING CAPABILITY

Until now, RFID handheld readers identified the general proximity of an item — for example, a warehouse zone or shelf. With the MC9090-Z, a unique combination of intuitive audible and visual cues can quickly guide an associate to locate any desired item, which is useful in back room or stock picking situations. As the device moves closer to a specific item to be found, a beep tone increases in frequency and volume, while a sliding graphical bar increases in size.

THE POWER TO MEET YOUR ENTERPRISE APPLICATION REQUIREMENTS

Equipped with the latest advances in mobile technology, the MC9090-Z RFID handheld provides support for the richest enterprise applications. Whether your application is simple or complex, the MC9090-Z RFID reader delivers performance you can count on — from the latest Intel processor designed for the specific demands of mobility, to robust persistent storage capabilities and multiple advanced data capture options.

The ability to read and encode RFID tags, capture images as well as scan bar codes enables enterprises to deploy a single device in many business areas, eliminating the need and associated costs for multiple devices in multi-modal data capture environments. Workers can count on ample battery life for a full shift through superior power management. And modular keypads, a rugged touch panel and a display that is easy to view inside and outside provides users with maximum readability, as well as ease-of-use and comfort.

FEATURES

Motorola RFID Reader Engine Module

For increased, high efficiency read performance

Supports 1D, 1D at extended ranges and 2D bar code scanning, RFID and imaging

Multi-modal single device provides superior application flexibility and cost-efficiencies

Exceptionally rugged construction: passes industry's most stringent drop and tumble tests; IP64 sealing rating; integrated internal antennas

Flexibility to use in nearly any environment; dramatically reduces repair and downtime costs; delivers enterprise performance and ROI

Pinpoint locating technology

A unique combination of intuitive audible and visual cues easily guides workers to a specific item: as the device moves closer to the desired item, a beep tone increases in frequency and volume, while a sliding graphical bar increases in size

Common Motorola platform

Maximizes software development investment

Intel XScale PXA270 processor: 624 MHz; enhanced memory architecture for persistent storage

Supports simple to complex multimedia applications; ensures retention of mission-critical data

Windows Mobile 5.0 and 6.1

Advanced mobile operating system for robust application support (Windows or application-specific)

WPAN: Bluetooth v1.2 radio with BT Explorer (Manager included)

Wirelessly synchronize, print, and connect to a headset

RUGGED CONSTRUCTION AND MAXIMUM MANAGEABILITY DELIVER A LOW TCO

The MC9090-Z delivers outstanding investment protection and a low total cost of ownership through superior design, construction, manageability and support services. Adding Motorola

Mobility Services Platform (MSP) enables you to quickly and easily provision, track and support all your MC9090-Z RFID

devices from a central location, delivering an unprecedented level of simplicity and low cost to management of mobile devices. And to help protect your investment, Motorola offers Service from the Start with Comprehensive Coverage.

For more information on the MC9090-Z RFID handheld and its full line of accessories, visit our global contact directory at www.motorola.com/enterprise/contactus, or visit us on the Web at www.motorola.com/mc9090Z

MARKET, APPLICATIONS AND USERS

| Market | Applications | User |
|-----------------------|---|---|
| Manufacturing | Inventory management Supply-line replenishment | Assembly-line personnel Shipping/receiving personnel |
| Retail | Warehouse management Price audits/changes Store receiving Inventory management | Sales associates Receiving-dock personnel Stock-room personnel Supervisors |
| Wholesale | Warehouse management Receiving/Putaway/Shipping | Warehouse personnel |
| Distribution | Returns processing | Loading-dock personnel |
| Third-party logistics | Warehouse management | Warehouse personnel |
| Pharmaceutical | Enhanced Traceability | Compliance personnel |
| Aviation | Parts Tracking Baggage | Maintenance personnel Baggage handling personnel |
| Defense | Logistics/Supply | Service personnel |

HOW DO HANDHELD SOLUTIONS ADD VALUE TO RFID TECHNOLOGY?

| Challenge | Solution |
|-------------------------|--|
| Exception Processing | Allows misreads and other problem shipments to be investigated away from the dock without impeding flow |
| Remote Location Support | Provides a means of utilizing RFID information for receiving |
| Quick Start | No installation and low total solution cost allows a "quick start" with RFID |
| On Site Processing | Goods stored away from fixed readers — e.g. in storage racks — can still be processed using RFID tag information |
| Mixed Bar Code and RFID | Lets workers switch quickly between RFID-tagged items and items marked with a bar code |

MC9090-Z RFID SPECIFICATIONS

PHYSICAL AND ENVIRONMENTAL CHARACTERISTICS

| | |
|-------------|--|
| Dimensions: | 10.75 in. L x 4.7 in. W x 7.7 in. H 27.3 cm L x 11.9 cm W x 19.5 cm H |
| Weight: | 35.4 oz./1 kg (includes battery, scanner and radio) |
| Keyboard: | 53-key; Terminal Emulation (5250, 3270, VT) |
| Display: | QVGA color |
| Power: | Removable, rechargeable 7.2 volt Lithium Ion 2200 mAh battery pack, 15.8 watt hours |

PERFORMANCE CHARACTERISTICS

| | |
|--------------------------|--|
| CPU: | Intel® XScale™ Bulverde PXA270 processor at 624 MHz |
| Operating System: | Microsoft Windows Mobile 5.0 Premium Edition and 6.1 Premium Edition |
| Memory (RAM/ROM): | 64 MB/128 MB |
| Expansion: | SD/MMC card |
| Application Development: | PSDK, DCP and SMDK available through Motorola Developer Zone Web site |
| Bar Code Options: | Omni-directional 1D, 1D ER and 2D imaging engine reads symbologies and captures grayscale images and signatures with intuitive laser aiming. |

USER ENVIRONMENT

| | |
|--------------------------------|--|
| Operating Temp.: | -4° F to 122° F/-20° C to 50° C |
| Charging Temp.: | 32° F to 104° F/0° C to 40° C |
| Storage Temp.: | -40° F to 158° F/-40° C to 70° C |
| Humidity: | 5% to 95% non-condensing |
| Drop Spec: | Multiple drops to concrete: 6 ft./1.8 m across the operating temperature range |
| Tumble: | 2,000 one-meter tumbles at room temperature (4,000 hits) |
| Environmental Sealing: | IP64 (electronic enclosure, display and keypad) |
| Electrostatic Discharge (ESD): | +/-15kVdc air discharge; +/-8kVdc direct discharge; +/-8kVdc indirect discharge |

RFID

| | |
|-----------------------|--|
| Standards supported: | EPC Gen 2 DRM (DRM compliant up to 0.5w) |
| Nominal read range*: | 20 ft. to 40 ft depending /6.09 cm to 304.8 cm |
| Nominal write range*: | 1 ft. to 2 ft./30.5 cm to 60.9 cm |
| Field: | 70-degree cone (approx.) measured from nose of device |
| Antenna: | Integrated, linearly polarized |
| Frequency Range: | 902-928 MHz |
| Output Power: | 4 Watt EIRP |

WIRELESS DATA COMMUNICATIONS

| | |
|--------------------------|---|
| WLAN: | 802.11 a/b/g |
| Output Power: | 100 mW U.S. and international |
| Data Rate: | 802.11a: up to 54 Mbps; 802.11b: up to 11 Mbps; 802.11g: up to 54 Mbps |
| Antenna: | Internal |
| Frequency Range: | All country dependent: 802.11a - 5 GHz; 802.11b – 2.4 GHz; 802.11g – 2.4 GHz |
| PAN (Bluetooth Support): | Bluetooth Version 1.2 with BTExplorer (manager) included |

PERIPHERALS AND ACCESSORIES

| | |
|--------------------|---|
| Cradles: | Single-slot serial/USB, 4-slot Ethernet, 4-slot charge only |
| Printers: | Supports extensive line of Motorola- approved printers and cables |
| Charger: | 4-Slot universal battery charger |
| Other Accessories: | Cable adapter module; snap-on magnetic stripe reader; modem module; full set of cables |

REGULATORY

| | |
|-------------------------|---|
| General: | Approved for use in the US and Canada** |
| Electrical Safety: | Certified to UL60950-1, CSA C22.2 No. 60950-1, IEC 60950-1 |
| EMI/RFI Radio Versions: | US: FCC Part 2 (SAR), FCC Part 15, RSS210 Europe: EN 301 893, EN 300 328 EN 60950-1 |
| Laser Safety: | IEC Class2/FDA Class II in accordance with IEC60825-1/EN60825-1, 21CFR1040.10 |

AVAILABILITY

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|-----------|------------|
| MC9090-Z: | US, Canada |
|-----------|------------|

WARRANTY

The MC9090-Z RFID is warranted against defects in workmanship and materials for a period of one year (12 months) from date of shipment, provided the product remains unmodified and is operated under normal and proper conditions.

RECOMMENDED SERVICES

Customer Services: Service from the Start – Bronze with Comprehensive Coverage

*Actual read/write range is dependent upon a number of factors, including the specific tag used, nature of the items tagged, and presence or absence of radio interference.

**NOTE: Model numbers for Regulatory Certification are:
MC9090-Z1: US, Canada.

NOTICE: Repairs of this product 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 your Motorola account manager or the local Motorola Customer Service representative in your area for further details.



**Large QVGA display:
exceptional clarity
and contrast**

Easy to read in a variety of
lighting conditions

**Forward scanning, pistol grip
ergonomics**

Reduces user fatigue in bar code
scanning and RFID tag reading
intensive applications

**Integrated directional
antenna (70 degree
forward-looking)**

Enables isolation of
desired tags

**API (Application
Programming Interface) for
Microsoft® Windows®
CE.NET 4.2 and Windows
Mobile 5.0 and 6.1**

Familiar tools simplify and
reduce the time required to
develop RFID-enabled
applications

PRODUCT SPEC SHEET
MC9090-Z RFID

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