# MOTOROLA MC3190-Z

## BUSINESS-CLASS HANDHELD RFID READER

### BRING THE BENEFITS OF RFID TO THE CARPETED SPACE

The MC3190-Z represents another RFID first from Motorola — the first business-class handheld RFID reader designed specifically to extend RFID beyond industrial spaces and into customer facing and business environments. This highly versatile device is at home in the retail storefront, the carpeted business office and hospitals as well as the warehouse and manufacturing production line. The MC3190-Z starts with the same signature rugged design and high performance found in all Motorola industrial handheld RFID products, and adds the ergonomics required for all day comfort and ease of use. At just half the weight of its industrial counterparts, the MC3190-Z is the lightest UHF RFID rugged handheld reader on the market — period. Its well-balanced, gun-style grip brings comfort to the most read-intensive applications. And the advanced, high efficiency Motorola RFID reader engine increases workforce productivity with faster read rates that increase throughput.

### MOTOROLA MAX *RFID ANTENNA* FOR MAXIMUM RFID PERFORMANCE

Until now, enterprises have been forced to choose between two types of antennas: linear polarization for a longer read range or circular polarization for wider coverage. The MC3190-Z antenna combines the advantages of these two technologies into a patented omnidirectional antenna that offers the best of both worlds — a superior read range and superior coverage area. The orientation insensitive antenna delivers extraordinary reliability and there's no need to precisely align the reader with the tag. As a result, workers can accurately and rapidly capture RFID tags on even the most challenging items — from a pile of clothing in a retail store or a box of files in the office to a shelf full of data tapes in the data center.

### GET SUPERIOR VALUE — MOTOROLA'S SIGNATURE RUGGED DESIGN AND DUAL DATA CAPTURE FUNCTIONALITY

The MC3190-Z offers the best of form and function with Motorola MAX *Rugged* and Motorola MAX *Data Capture*. While the MC3190-Z is designed for the carpeted space, Motorola MAX *Rugged* provides Motorola's flagship rugged specifications to ensure dependable operation and a maximum lifecycle in any environment. The reader passes one of the industry's most stringent impact tests, able to survive a 4 ft./1.2 m drop to concrete across the entire operating temperature range. In our unique endurance test, the MC3190-Z performs reliably after 1,000 1.64 ft./0.5m hits in our tumble drum. And with IP54 sealing, the device can withstand dust, spills and the routine wipedowns required in healthcare and other challenging environments.

## FEATURES

**Business-class RFID handheld for global deployments**
Supports regions based on European RFID frequencies (ETSI EN 302-208) and US RFID frequencies

**Motorola RFID reader engine**
Delivers advanced, high efficiency read performance for faster read rates and higher throughput

**Motorola's patented omnidirectional MAX *RFID Antenna***
Orientation insensitive design eliminates the need to align reader and tag for faster and more accurate reads

**Pinpoint locating technology**
A unique combination of intuitive audible and visual cues easily guides workers to a specific item

**Proven platform**
Built on the proven, widely adopted MC3100 platform

**Easy-to-use Application Programming Interfaces (APIs)**
Rapid and cost-effective application development

**Motorola MAX Secure:**
FIPS 140-2 certification and support for the most advanced encryption and authentication algorithms as well as Virtual Private Networks (VPNs) enables compliance with the most stringent industry security regulations, including sensitive government applications

**Motorola MAX *Rugged*: meets and exceeds MIL-STD 810F standards for drop, tumble and sealing**
Built for all day enterprise use; provides dependable operation despite the inevitable drops and spills; provides extended lifecycle; withstands wipe downs

**Motorola MAX *Data Capture***
Offers exceptional RFID and bar code scanning functionality in a single device; eliminates the need to purchase two devices, reducing capital and operational costs

Motorola MAX *Data Capture* puts two best-in-class advanced data capture technologies in one device — the ability to read RFID tags and scan bar codes. This versatility translates into fewer devices to purchase and manage. And just because the MC3190-Z offers advanced RFID technology does not mean you need to sacrifice bar code performance. The device accurately captures even damaged and poor quality 1D bar codes.

## EASY-TO-USE ROBUST LOCATING CAPABILITY

Until now, RFID handheld readers identified the general proximity of an item — for example, a shelf. The MC3190-Z offers a unique combination of intuitive audible and visual cues to quickly guide a worker to the location of any desired item. As the device moves closer to a specific item, a tone beeps louder and faster, while a sliding graphical bar increases in size. The result? Employees can rapidly locate any individual item, regardless of where it may be, faster and easier than ever before.

## THE MOTOROLA END-TO-END ADVANTAGE

When you choose the Motorola MC3190-Z, you enjoy the advantages of a world-class partner channel, world-class management solutions and world-class services. Our award-winning partner ecosystem offers a best-in-class, broad set of ready-to-go and custom applications for the MC3190-Z, minimizing deployment time and cost. Compatibility with Motorola's Mobility Services Platform (MSP) and the Motorola Mobility Suite offers extraordinary centralized control over all your Motorola devices, including the ability to remotely stage, provision, monitor, troubleshoot, secure data on the devices and much more. And since your employees will count on the MC3190-Z every day, our Service from the Start with Comprehensive Coverage will help keep your devices up and running at peak performance. This unique service includes normal wear and tear, as well as coverage for internal and external components damaged through accidental breakage at no additional charge — significantly reducing your unforeseen repair expenses.

For more information on how you can bring the benefits of RFID into new areas of your business, please visit us on the web at www.motorola.com/mc3190z or access our global contact directory at www.motorola.com/enterprisemobility/contactus

## MC3190-Z APPLICATIONS

As the first business-class handheld RFID reader, the MC3190-Z enables the extension of RFID beyond industrial spaces and into customer facing and business environments. Industries and applications include:

| INDUSTRY | APPLICATION |
|---|---|
| **Retail** <br> Sales Floor; POS; backroom | • Inventory/cycle counting <br> • Automatic replenishment <br> • Receiving/shrink control <br> • Item finding |
| **Enterprise** <br> Business offices/carpeted spaces | • Asset/IT management <br> • File and document tracking <br> • Item finding |
| **Healthcare** <br> Hospitals; clinics | • Asset management (for high value critical assets) <br> • Patient tracking <br> • Item finding |
| **Manufacturing/Warehousing** <br> (environmentally controlled) <br> Production line; warehouse aisles and loading docks | • Work in Process (WIP) <br> • Receiving/shipping |

# SPECIFICATIONS CHART

## PHYSICAL CHARACTERISTICS

| | |
|---|---|
| Dimensions | 7.6 in. H x 4.7 in. W x 6.4 in. D<br>19.34 cm H x 11.94 cm W x 16.26 cm |
| Weight | 22.93 oz./650 g (including battery, stylus, narrow keypad & strap) |
| Display | 3 in. QVGA color display (320 x 320) touchscreen with backlight |
| Battery | Li-Ion 4,400 mAh @ 3.7Vdc<br>(2X Battery only) |
| Network Connections | RS232; USB (host and client) |
| Keypad | 48-key Alpha-Numeric |
| Data Capture Options | RFID, 1D laser scanner and 2D imager |

## PERFORMANCE CHARACTERISTICS

| | |
|---|---|
| CPU | Marvell PXA320 @ 624 MHz |
| Operating System | Microsoft® Windows Embedded Handheld 6.5.3 |
| Memory | 256MB RAM/1GB Flash as shipped, user expandable |

## USER ENVIRONMENT

| | |
|---|---|
| Drop Spec | 4 ft./1.2 m drop to concrete across the operating temperature range; meets and exceeds MIL-STD 810F |
| Tumble Spec | 500 1.64 ft./.5 m tumbles (1,000 drops) at room temperature; meets and exceeds MIL-STD 810F |
| Operating Temp | 14° F to 122° F/-10° C to 50° C |
| Storage Temp | -22°F to 160° F/-30°C to 70°C |
| Sealing | IP54; Meets and exceeds MIL-STD 810F |
| Humidity | 5-95% non-condensing |
| Electrostatic Discharge (ESD) | +/-15kv VDC air discharge, +/-8kv VDC direct discharge, +/-8kv indirect discharge |

## RFID

| | |
|---|---|
| RFID Power Output | EU: 1/2 watt ERP for Europe<br>US: 1 watt EIRP |
| RFID Antenna Type | Integrated Orientation Insensitive |
| Frequency Range | EU: 865-868 MHz; US: 902-928 MHz |
| Standards Supported | EPC Gen 2 DRM (DRM compliant up to 0.5W) |

## WIRELESS LAN VOICE AND DATA COMMUNICATIONS

| | |
|---|---|
| Radio | Tri-mode IEEE® 802.11a/b/g |
| Security | WPA2 (Personal or Enterprise); 802.1x; EAP-TLS; TTLS (CHAP, MS-CHAP, MS-CHAPv2, PAP or MD5); PEAP (TLS, MSCHAPv2, EAP-GTC); LEAP, EAP-FAST (TLS, MS-CHAPv2, EAP-GTC); CCXv4 certified; support for IPv6; FIPS140-2 Certified |
| Data Rates Supported | 802.11a: up to 54 Mbps, 802.11b: up to 11 Mbps, 802.11g: up to 54 Mbps |
| VoIP-Ready | Optional (region dependent) |

## WIRELESS PAN DATA AND VOICE COMMUNICATIONS

| | |
|---|---|
| Bluetooth® | Region dependent |

## PERIPHERALS AND ACCESSORIES

| | |
|---|---|
| Cradles | Single-slot USB/RS232 charging cradle with spare battery well |
| Chargers | Four-slot battery charger; adaptor for universal battery charger |
| Printers | Supports Motorola approved printers |
| Other Accessories | Charging cables, magnetic stripe reader |

## REGULATORY

| | |
|---|---|
| EMI/EMC | FCC Part 15 Class B, ICES 003 Class B, IEC 60601-1-2, EN 301 489-1, EN 301 489-17, EN 301 489-3 |
| Electrical Safety | UL 60950-1, CSA C22.2 No. 60950-1, IEC 60950-1 |
| RF Exposure | EU: EN 50360; EN 50364<br>USA: FCC Part 2, FCC OET Bulletin 65 Supplement C<br>Canada: RSS-102<br>Japan: ARIB STD T56<br>Australia: Radiocommunications Standard 2003 |
| WLAN, Bluetooth and RFID | EU: EN 300 328, EN 301 893 : EN 302 208<br>US: FCC Part 15.247, 15.407<br>Canada: RSS-210<br>Australia: AS/NZS 4268 |
| Laser Safety | A21CFR1040.10, IEC/EN 60825-1 |

Model Numbers for Regulatory Certifications: MC319ZUS, MC319ZEU
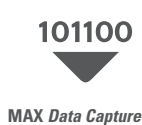
## GEOGRAPHIC AVAILABILITY

Supported regions based on European RFID frequencies (ETSI EN 302-208) and US RFID frequencies*

## WARRANTY

The MC3190-Z is warranted against defects in workmanship and materials for a period of 12 months from date of shipment, provided that the product remains unmodified and is operated under normal and proper conditions.

## RECOMMENDED SERVICES

Customer Services: Service from the Start with Comprehensive Coverage

**MAX** *Rugged*   **MAX** *Data Capture*   **MAX** *RFID Antenna*   **MAX** *Secure*

abg WiFi CERTIFIED®   Bluetooth®

Windows Embedded Handheld

# FEATURING MOTOROLA MOBILITY ARCHITECTURE EXTENSIONS (MAX)

Motorola Mobility Architecture eXtensions (MAX) allows Motorola mobile computers to deliver extraordinary value — a truly unprecedented return on investment (ROI) and total cost of ownership (TCO). This unique set of Motorola features turbo charges Motorola mobile computers, driving ease-of-use, ease-of-management, flexibility, modularity, lifecycle and overall system performance to new heights. Features in the MC3190-Z include...

**MAX** *Rugged*
With MAX Rugged, you can count on a device built for the most demanding business environments. A minimum of three specifications — industry leading mechanical stress and endurance tests plus environmental sealing — insures dependable performance and maximum lifecycle.

**MAX** *Data Capture*
Integrate best-in-class advanced data capture functionality, including: 1D, 2D and DPM bar code scanning; signature capture; high resolution image and document capture; RFID and more.

**MAX** *RFID Antenna*
Maximize the performance of your RFID solutions with this patented orientation insensitive antenna. The unique combination of linear and circular polarization maximizes read range and coverage area, delivering the extraordinary reliability required to capture tags — even on the most challenging items.

**MAX** *Secure*
MAX Secure provides the security features required to ensure secure data transmissions over either the WLAN or the WWAN — including highly sensitive applications in government and public safety.

**MOTOROLA**