



# 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

#### Wi-Fi 802.11a/b/g wireless connectivity

Connects to virtually any  
wireless LAN for easy  
integration; enables  
real-time wireless data  
capture anywhere in your  
environment

#### 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](http://www.motorola.com/mc3190z) or access our global  
contact directory at [www.motorola.com/enterprisemobility/contactus](http://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
<b>Retail</b> Sales Floor; POS; backroom	<ul style="list-style-type: none"><li>• Inventory/cycle counting</li><li>• Automatic replenishment</li><li>• Receiving/shrink control</li><li>• Item finding</li></ul>
<b>Enterprise</b> Business offices/carpeted spaces	<ul style="list-style-type: none"><li>• Asset/IT management</li><li>• File and document tracking</li><li>• Item finding</li></ul>
<b>Healthcare</b> Hospitals; clinics	<ul style="list-style-type: none"><li>• Asset management (for high value critical assets)</li><li>• Patient tracking</li><li>• Item finding</li></ul>
<b>Manufacturing/Warehousing</b> (environmentally controlled) Production line; warehouse aisles and loading docks	<ul style="list-style-type: none"><li>• Work in Process (WIP)</li><li>• Receiving/shipping</li></ul>

# SPECIFICATIONS CHART

## PHYSICAL CHARACTERISTICS

Dimensions 7.6 in. H x 4.7 in. W x 6.4 in. D  
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 (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  
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

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  
USA: FCC Part 2, FCC OET Bulletin 65 Supplement C  
Canada: RSS-102  
Japan: ARIB STD T56  
Australia: Radiocommunications Standard 2003

WLAN, Bluetooth and RFID  
EU: EN 300 328, EN 301 893 : EN 302 208  
US: FCC Part 15.247, 15.407  
Canada: RSS-210  
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

101100

MAX Data Capture



MAX RFID Antenna



## 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.

101100



### **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.