



# The Motorola MC9500-K

A premium industrial-class mobile computer:  
raising the bar for rugged key-based field mobility applications



## FEATURES

**Motorola MAX Rugged:** Next generation rugged design: industry leading drop and tumble tests, IP67 sealing, Monocoque housing and integrated internal antennas (WWAN, WLAN and GPS); meets and exceeds applicable MIL-STD and IEC specifications for drop, tumble, sealing and other environment parameters

Next generation ergonomic design — sleeker, smaller, easier-to-grip rugged form factor delivers a new level of comfort and easy one-handed operation for key-based applications

**Motorola MAX FlexWAN:** Customer swappable 3.5G broadband WAN (GSM HSDPA and CDMA-EVDO Rev A) right in the backroom — no need to return the device to a Motorola service center

**Motorola MAX Keypad:** Modular field swappable keypad options with new ergonomics — alpha primary, numeric telephony, numeric calculator, and full alpha numeric

Extremely durable Polycarbonate Insert Mold Decorated (IMD) keypad

Best-in-class display with advanced LCD technology for easy viewing in any lighting

3.7 inch color high resolution VGA display (640 x 480) with digitizer and backlight

Motorola Mobility Platform Architecture (MPA) 2.0, provides the latest best-in-class technology platform and enables easy and cost-effective porting of applications from other Motorola mobile computers

Next generation performance: powerful Marvell PXA320 @ 806 MHz microprocessor, larger memory footprint and a user accessible micro-SD card

Microsoft Windows Mobile 6.x operating system for increased interoperability and security

**Motorola MAX Sensor** — Interactive Sensor Technology (IST) offering leading edge motion-based applications

**Motorola MAX Locate:** SiRFstarIII GSC3ef/LP chipset; Assisted and Autonomous GPS; SUPL 1.0 compliant — enables a signal lock in challenging areas where signals are typically weak, such as urban canyons and indoors

WLAN: 802.11a/b/g tri-mode radio; comprehensive VoIP support

FIPS 140-2 certification ensures data security — even in sensitive government applications

WPAN: Bluetooth® v2.1 with EDR

IrDA for wireless connectivity to existing business equipment

**Motorola MAX Data Capture:** Multi-mode data capture: industry leading 1D/2D bar code scanning plus 3 megapixel (2048 x 1536) autofocus flash-enabled optional digital color camera with decode and high resolution document capture capability

High quality speakerphone, microphone and receiver, with multiple voice modes — handset, headset and speakerphone

**Motorola MAX Backroom Management:** game-changing backroom management through an industry-first Universal Accessory System

**Motorola MAX Battery:** high capacity battery with unique, industry-first battery information indicators for state of charge and state of health, greatly simplifying battery management

IEEE 1725 compliance for the entire MC9500-K system — including all models, all batteries and all power-related accessories (such as cradles and charging cables)

MSP compatibility — comprehensive and flexible centralized management of all devices, anywhere in the world, all from a single console

## The next evolution in rugged design, ergonomics, features, functionality and performance

The MC9500-K leverages the flagship features and functionality of Motorola's signature MC9000 Series rugged mobile computers, while introducing many new capabilities defined through extensive research and testing in logistics, parcel/post, direct store delivery (DSD), field service, public safety and sales force automation applications in some of the world's leading organizations. The result is a device that is as different on the inside as it is on the outside — a groundbreaking product with an unsurpassed feature set that takes rugged mobile computing innovation to a new level. With the MC9500-K, you can simply expect more: a more rugged design, more data capture options, more intelligence, more processing power and better ergonomics, all in a sleeker, lighter and easier-to-use form factor that offers a completely new approach to accessories, battery and backroom management.

# MC9500-K Specifications

<b>Physical Characteristics</b>	
Dimensions:	9.2 in. H x 3.5 in. W x 2 in. D 23.36 cm H x 8.89 cm W x 5.08 cm D
Weight:	22 oz./623 g (including battery, stylus, keypad & strap)
Display:	3.7 in. VGA Color (TFT) Display (640 x 480) with touch panel and backlight
Touch Panel:	Polycarbonate analog resistive touch
Backlight:	LED Backlight
Keypad Options:	Modular: alpha primary; numeric telephony, numeric calculator, alpha numeric
Expansion Slot:	microSD slot — supports up to 16GB
Notifications:	Programmable LEDs; Audio notifications; Vibrator alerts
<b>Performance Characteristics</b>	
CPU:	Marvell PXA320 @ 806 MHz
Operating System:	Windows Mobile 6.1 (Classic and Professional editions)
Memory:	128MB RAM/512MB Flash
<b>User Environment</b>	
Drop Specification:	Meets and exceeds applicable MIL-STD-810G drop specifications: 6 ft./1.8 m drop to concrete across the operating temperature range
Tumble Specification:	2000 3.2 ft./1 m tumbles (4,000 hits) at room temperature; meets and exceeds applicable IEC tumble specifications
Operating Temperature:	-4° F to 122° F/-20° C to 50° C
Storage Temperature:	Ambient to -40° F/-40° C Ambient to 158° F/70° C RH 95%
Sealing:	IP67 sealing; meets and exceeds applicable IEC sealing specifications
Humidity:	5 - 95% non-condensing
Vibration:	4g's PK Sine (5Hz to 2KHz); 0.04g2/Hz Random (20Hz to 2KHz); 60 minute duration per axis, 3 axis
Thermal Shock:	-40° F to 158° F/-40° C to 70° C rapid transition
ESD:	±15kv Air discharge, ±8kv direct discharge, ±8kv indirect discharge
Altitude:	-1,200 ft. to 12,000 ft. operational; 15,000 ft. shipping
Key and Trigger:	1 million presses
Light Immunity:	Readability: Incandescent – 450 ft. candles; Sunlight – 8000 ft. candles; Fluorescent: 450 ft. candles
<b>Battery</b>	
Capacity:	Rechargeable Lithium Ion 4800 mAh battery @ 3.7V – with State of Charge and State of Health indicators
Standby Time:	150 hours
Talk Time:	8 hours (minimum/suspend mode)

User Profiles:	<b>Outdoor WAN+GPS:</b> 15 min./hour voice communication, 10KB transmission every 10 min, and GPS on all time, default out-of-box configuration of other parameters, minimum 8 hours of operation
	<b>Outdoor Voice:</b> 15 min./hour voice communication, default out-of-box configuration of other parameters, minimum 8 hours of operation
	<b>Outdoor Scan:</b> 600 scans and WAN transmits per hour, default out-of-box configuration of other parameters, minimum 8 hours of operation

<b>Data Capture Options</b>	
Scanning:	1D Scanner; 2D Imager; 3 MP auto-focus flash-enabled digital color camera with symbology decode software
Scan Angle:	Optimized for scanning (15° downward angle)
Options:	Available options: 1D laser scanner; 2D imager; 1D laser scanner and camera; 2D imager and camera

<b>Color Camera</b>	
Resolution:	3 megapixel
Illumination:	User controllable flash
Lens:	Autofocus

<b>1D Laser Scanner (SE950)</b>	
Range on 100% UPCA:	24 in./60 cm
Resolution:	4 Mil minimum element width
Roll:	±35° from vertical
Pitch Angle:	±65° from normal
Skew Tolerance:	±50° from normal
Ambient Light Immunity:	10,000 ft. candles/107,640 lux
Scan Rate:	104 (±12) scans/sec (bi-directional)
Scan Angle:	47° ±3° default; 35° ±3° reduced

<b>2D Imager (SE4500SR)</b>	
Focal Distance:	From center of exit window: SR – 7/5 in./19 cm
Sensor Resolution:	752 x 480 pixels
Field of View:	Horizontal: 40°; Vertical: 25°
Skew Tolerance:	±60°
Pitch Tolerance:	±60°
Roll Tolerance:	360°
Ambient Light Immunity:	9,000 ft. candles/96,900 lux
Aiming LED (VLD):	655 ± 10 nm Laser
Illumination Element (LED):	625 ± 5 nm LEDs (2x)

<b>Motorola Interactive Sensor Technology</b>	
Motion-sensor:	3-axis accelerometer that enables motion-sensing applications for dynamic screen orientation, power management and free-fall detects

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**Wireless WAN Voice and Data Communications**

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Radio:	3.5G: GSM HSDPA and CDMA-EVDO Rev A broadband for voice and data
Frequency Band:	HSDPA: 850, 900, 1800, 1900, and 2100 MHz EVDO Rev A: 850 and 1900 MHz
Antenna:	Internal antenna w/diversity

**Integrated GPS**

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GPS:	Integrated standalone or Assisted-GPS (A-GPS) through SUPL; SIRFstarIII GSC3f/LP chipset
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**Wireless LAN Voice and Data Communications**

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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; FIPS 140-2 Certified
Antenna:	Internal antenna w/diversity
Data Rates Supported:	1, 2, 5.5, 6, 9, 11, 12, 18, 24, 36, 48 and 54 Mbps
Operating Channels:	Chan 1-13 (2412-2472 MHz), Chan 14 (2484 MHz) Japan only; actual operating channels/ frequencies depend on regulatory rules and certification agency
Voice Communications:	Voice-over-IP ready, Wi-Fi™-certified, IEEE 802.11a/b/g direct sequence wireless LAN, Wi-Fi Multimedia™ (WMM), Motorola Voice Quality Manager (VQM)

**Wireless PAN Data and Voice Communications**

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Bluetooth®:	Class II, v2.1 with Enhanced Data Rate (EDR); integrated antenna
IrDA:	Infra-red port for connection to printers and other devices

**Voice and Audio**

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Audio:	VoWWAN; VoWLAN; TEAM Express compliant; rugged audio connector; high-quality speakerphone; support for wired and wireless (Bluetooth) headsets; headset, handset and speaker phone modes
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**Network Communications**

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I/O:	USB 2.0 Client (High Speed) or USB 1.1 host (Full Speed); USB (via 1-bay cradle) or Ethernet (via 4-bay cradle)
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**Peripherals and Accessories\***

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Communication and Charging Cables:	Charge only cable, auto charge cable, USB charge/ sync cable, DEX cable, modem adapter cable
Battery Chargers/ Cradles:	4-slot battery charger; 1-slot battery charger; 4-bay Ethernet cradle; 4-bay charge only cradle; single bay USB cradle; vehicle battery charger using auto charge cable; vehicle cradle with charging capabilities

Application Specific Attachments:	Snap-on magnetic stripe reader
Soft Goods:	Rigid and soft case holsters
* For a complete list of MC9500 Peripherals and Accessories, please visit <a href="http://www.motorola.com/mc9500">www.motorola.com/mc9500</a>	

**Regulatory**

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Electrical Safety:	IEC/UL/CSA/EN 60950-1
Environmental:	RoHS compliant
WLAN and Bluetooth (PAN):	USA: FCC Part 15.247, 15.407 Canada: RSS-210 EU: EN 300 328, EN 301 893 Japan: ARIB STD T33, T66, T70, T71 Australia: AS/NZS 4268s

Wireless Wide Area Network:	<b>GSM-HSDPA</b>
	Global: 3GPP TS 51.010, 3GPP TS 34.121, 3GPP TS 34.123, GCF approved module USA: FCC Part 22, Part 24 Canada: RSS-132, RSS-133 EU: EN301 511, EN301 908 Australia: AS/ACIF S 024 HAC compliant

	<b>CDMA-EVDO</b>
	USA: FCC Part 22, Part 24 Canada: RSS-129, RSS-133 HAC compliant

RF Exposure:	USA: FCC Part 2, FCC OET Bulletin 65 Supplement C Canada: RSS-102 EU: EN 50360 Japan: ARIB STD T56 Australia: Radiocommunications Standard 2003
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EMI/RFI:	USA: FCC Part 15, Class B Canada: ICES-003 Class B EU: EN55022 Class B, EN 55024, EN 301 489-1, EN 301 489-7, EN 301 489-17, EN 301 489-19, EN 301 489-24, EN 60601-1-2, EN 50121-3-2, EN 50121-4 Australia: AS/NZS CISPR-22
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Laser Safety:	IEC Class2 / FDA Class II in accordance with IEC60825-1/EN60825-1
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For countries outside USA, Canada, European Economic Area, Japan, or Australia, consult your local Motorola representative

**Warranty**

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The MC9500-K 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**

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Customer Services:	Service from the Start with Comprehensive Coverage
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## SPECIFICATION SHEET

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A premium industrial-class mobile computer: raising the bar for rugged key-based field mobility applications



**MOTOROLA**

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