



# The Motorola MC9500-K Series mobile computer

## Improve the efficiency and profitability of your delivery operations with the latest innovations in mobility



The Motorola MC9500-K Series is packed with the features and functionality required to meet the needs of delivery operations for transportation and logistics providers. The result is peak operational efficiency — drivers can make more stops per day, invoice payment cycles are dramatically reduced, and much more. The rugged design is truly built for life outdoors, offering reliable operation despite everyday drops and exposure to the elements. The ability to add or change WWAN subsystems as needed, right in the backroom, enables deployment and re-deployment on the cellular network that will provide the best coverage for drivers in different geographies or across town. Add a Universal Accessory System and the ability to change keypads to support updated or new applications and you have one of the most cost-effective mobility solutions for T&L providers on the market today.

## The challenge: rising costs, reduced productivity and increasing customer demands

In transportation and logistics (T&L), drivers spend their day out in their trucks delivering product to customers, isolated from the business tools they need to perform their duties in real time. As a result, businesses must depend on paper-based processes to bridge the gap between the point of data collection and back-end systems. Drivers must travel to a designated area to pick up printed manifests each morning that provide the details of the day's route. At the delivery site, paper forms are used to capture signatures to document proof of delivery. Other paper forms are used to document overages, shortages and damages (OS&D). Still other forms enable the capture of the information required to complete accurate fuel tax returns.

At the end of the day, drivers or other administrators typically enter all the information captured on these forms into a computer, requiring the data to be touched at least twice — a major inefficiency that invites errors. Initial mistakes can be made when:

- Information is first written on a form
- Hard-to-read handwriting is transcribed at a later date
- Information is finally keyed into the computer

At the same time, competition is at an all time high and fuel prices remain volatile, making it even more important to make every mile count. But without real-time visibility into the location of your trucks, dispatch cannot always create the routes that minimize mileage, fuel costs and wear and tear on your vehicles. As a result, margins and profitability are threatened — forcing T&L providers to look for ways to streamline everyday processes. But as long as information remains confined on paper, it will continue to have a negative impact on driver productivity, billing cycle times, customer service levels, dispatch efficiency, fleet utilization and vehicle costs.

## BENEFITS

Increase driver productivity — the same number of drivers can make more stops

Real-time proof of delivery (POD) and payment processing reduces invoicing cycle times and Days Sales Outstanding (DSO), improving cash flow and profitability

Eliminate paper-based processes — and the associated cost and errors

Real-time load tracking and dynamic routing reduce fleet costs and protect service levels

Real-time proof of condition (POC) eliminates the high cost of dispute resolution

Real-time navigation keeps drivers on time — despite traffic jams

Real-time customer-driver communications to confirm delivery times and more improves customer service

The ability to provide drivers with one device for mobile voice and data communications reduces the number of devices you need to purchase and manage, in turn reducing the capital and operational costs associated with mobility

## The solution: a true road warrior — the MC9500-K rugged mobile computer

The Motorola MC9500-K Series can address these issues by providing drivers with the tools required to work in real time. With the MC9500-K in hand, drivers hold the equivalent of five separate devices all in one easy-to-use mobile computer:

- A mobile computer with a real-time high-speed 3.5G connection to the back-end business systems in the office
- A cell phone for voice connectivity to dispatch and other drivers
- Two data capture devices: a barcode scanner or imager plus a high resolution color camera for automated error-free capture of a wide variety of data
- A GPS unit that allows dispatch to automatically track the vehicle fleet while enabling real-time location-based applications for drivers

With these tools in the hands of drivers, enterprises can eliminate most of the paperwork and automate everyday procedures, effectively eliminating wasted time and recapturing costs every day. Drivers can utilize electronic forms that take just a fraction of the time required to complete paperwork — and can be transmitted to your business systems within

seconds of completion. Barcode scanning allows drivers to scan shipments as they are loaded into the truck, providing real-time tracking information for customers. And dispatch has constant visibility into driver and load location, improving route efficiency as well exception management throughout the day.

But functionality is just one of the three criteria required for successful mobility in T&L. You also need a device that can survive the demands of life outside the four walls, as well as provide the return on investment (ROI) required to help justify the cost of this mobility solution.

When it comes to device construction, the super-rugged MC9500-K offers Motorola's maximum rugged specifications for a low total cost of ownership. The device is purpose-built for life on the road, designed to perform reliably despite constant exposure to dust, extreme temperatures, inadvertent drops, driving rain and more.

And when it comes to ROI, the MC9500-K offers a number of unique features that no other mobile computer in the world offers — features that not only drive the return on mobility to a new high, but also make this one of the most cost-effective mobility solutions for T&L providers on the market today. When you choose the MC9500-K, you put the power of the entire Motorola Mobility Architecture eXtensions (MAX) feature set to work in your delivery operations — a set of capabilities that boosts ease-of-use, ease-of-management, flexibility, modularity and lifecycle to new heights, delivering the unsurpassed ROI and total cost of ownership (TCO) required to easily justify this mobility investment.



### The ideal companion for your delivery fleet

With Motorola MC9500-K, your drivers have all the tools of the office and more, right in the palm of their hands. A real-time connection to back-end business systems enables the elimination of paperwork and the automation of many everyday processes. Bar code scanning and a high-resolution camera further automate and error-proof data capture. GPS provides drivers with real-time navigation and dispatchers with real-time fleet tracking. And mobile voice, including push-to-talk (network dependent), completes this robust feature set, allowing drivers to reach dispatch, other drivers and emergency services as needed.

## The many features of the MC9500-K

The MC9500-K features that are most valued in Transportation and Logistics include:

### Motorola MAX Rugged

The Motorola MC9500-K is designed to endure the harsh realities of life out on the delivery route, providing dependable performance every minute of the day. The next generation rugged design offers some of the most rugged specifications in this device category. Key features include:

- **The industry's most stringent stress and endurance tests** — the ability to survive multiple 6 ft./1.8 m drops to concrete across the entire operating temperature range as well as 2,000 3.2 ft./1 m tumbles at room temperature. The highly unique tumble test provides real world testing, replicating the stress of a real-world common occurrence in T&L — the tumbling that occurs when a device is dropped or inadvertently left on the bumper of a vehicle.
- **IP67 sealing** — providing the highest level of dust protection plus the ability to survive complete submersion in water
- **A unique Monocoque housing** — a new unibody design that substantially improves structural stability
- **Internal antennas** — complete internal integration of all antennas (WWAN, WLAN and GPS) eliminates one of the most common vulnerabilities
- **A more rugged display** — polycarbonate touch panel for increased impact resistance
- **Extremely durable Polycarbonate Insert Mold Decorated (IMD) keypad** — greatly improves keypad durability by eliminating the ability to dislodge an individual key, while printing under the polycarbonate layer protects keypad graphics against wear

### Superior ergonomics for one-handed use

Drivers frequently need to use one hand to carry a box or push a hand truck. Researched and field-tested ergonomics led to the implementation of two criteria that ensure comfortable one-handed operation:

- Strategic placement and size of the keys

- A lighter, sleeker and easier-to-grip design that is always balanced in the hand, regardless of the presence of any snap-on attachments, hand preference or hand size — with or without gloves

### Next generation architecture for next generation performance

When you choose the MC9500-K, you get the most powerful processor in this device class (Marvell PXA320 @ 806 MHz), a large memory footprint and a user accessible microSD card slot that can accommodate up to 32GB. Add a large 3.7 inch high resolution color display that can dynamically switch between portrait and landscape modes and you give your drivers a superior experience — even for demanding video and multimedia applications.

### Comprehensive and best-in-class advanced data capture options

With the MC9500-K, businesses no longer need to choose between types of data capture — they can have it all. Simultaneously support for either a 1D laser scanner or 2D imager plus a 3 megapixel auto focus color camera allows the capture of more types of data. The result is better business intelligence — your drivers can capture whatever type of information you need to streamline your business processes, from 1D and 2D bar codes, high resolution close-up and standard range color photographs to video and documents with legible fine print and signatures. Regardless of whether you choose the 1D or 2D scanner, users experience Motorola's superior scanning performance, enabling first-time accurate capture of even damaged or poor quality bar codes. And with Motorola's revolutionary 2D imager, there is no need to sacrifice laser scanning speed to deploy 2D capability — Motorola's SE4500 imager provides stunning performance on both 1D and 2D bar codes.

### Motorola MAX Battery

While vehicle cradles can enable in-vehicle charging of batteries, drivers can still inadvertently select an unhealthy battery that is only capable of holding its charge for a short time, risking the high cost of an unproductive driver out in the field. Motorola MAX Battery addresses this issue with an elegant solution, offering the only battery on the market to offer integrated dual display information indicators. This patented feature enables IT and drivers to determine not only the state of the charge but also the state of the health of a battery — and whether the battery is still capable of holding a full charge or needs replacement. As a result, battery management

is simplified and battery-related costs are reduced. Drivers can easily double check the battery before they leave the depot. Backroom managers spend virtually no time identifying which batteries need to be replaced, ensuring that the battery pool contains only viable healthy batteries, effectively reducing the need for buffer stock — and the related costs.

### **Motorola MAX FlexWAN**

Until today, businesses have been forced to purchase mobile devices that are proprietary to a specific cellular network. But in T&L operations, this can be an exceptionally difficult decision, since different networks may provide better coverage for drivers covering different areas. The MC9500-K offers a groundbreaking design that completely eliminates this issue by providing true carrier independence. Purchase the device without WAN technology or with one of three modules — and modules can be swapped at any time, right in your back room, no service center visit required. Our 3.5G GSM HSDPA or CDMA-EVDO Rev A WAN modules provide integrated voice and data device on the network of your choice. If your workforce does not require voice, our dual on-board user-selectable modem provides wireless data only on either 3.5G GSM HSUPA or CDMA-EVDO Rev A networks — or both (requires data plans on each network). If multiple networks are activated, the data-only device can be switched between networks as users travel, ensuring connectivity throughout the business day. Known as Motorola MAX *FlexWAN*, this complete cellular network independence allows you to deploy and redeploy a single pool of devices on the cellular network that will provide the best coverage for drivers in different parts of the world — or a remote part of town.

### **Motorola MAX Locate**

Another crucial feature in T&L is MAX *Locate*, a best-in-class implementation of GPS locationing technology that enables line-of-business applications that further increase user productivity and improve overall business efficiency. The SiRFstarIII GSC3ef/LP chipset offers support for assisted and autonomous GPS as well as SUPL 1.0 compliance, providing your drivers with a robust GPS connection even in challenging geographies. MAX *Locate*:

- Expands the coverage area for GPS applications with a high performance, power-efficient processor capable of acquiring and maintaining a signal lock in areas where signals are typically weak
- Offers a faster time to first fix (TTFF)

- Provides the flexibility to operate in either standalone or assisted GPS (aGPS) mode (carrier dependent) for faster positioning — especially in challenging areas such as urban canyons

### **Motorola MAX Sensor: Interactive Sensor Technology (IST) — enterprise-class motion sensing**

The MC9500-K offers an integrated accelerometer that starts where typical consumer-style accelerometer integration ends, allowing T&L providers to achieve real business value from motion sensing technology. Right out of the box, the device supports dynamic screen orientation, simplifying signature capture by eliminating the need for the driver or the recipient to orient the device in a specific direction. An array of power management features work to conserve power whenever the device is not in use. For example, the MC9500-K can be configured to enter power-saving mode when movement has not been detected in a defined period or when the device is placed screen-side down. In addition, the ability to access and integrate accelerometer data into customized applications allows enterprises to more fully leverage the value of motion sensing technology — especially valuable in T&L where drivers are alone out on the road. If a device has not moved in a pre-determined period of time or sustains a substantial fall, an alert can be sent to dispatch, allowing supervisors to detect and immediately respond to potential emergency situations.

### **Motorola MAX Keypad**

In order to ensure maximum simplicity in data entry, you need the keyboard that best matches your application type. The MC9500-K offers a complete portfolio of keypads designed to meet virtually any data entry requirement — from heavy text entry to calculator-style numeric data. In addition, the modular keypad architecture enables the swapping of keypads in minutes, right in your backroom, allowing:

- Modification of the MC9500-K to meet the needs of new applications
- Re-deployment of unused MC9500-K devices in another area of the business
- The ability to replace the keypad in the event of keypad damage

Finally, for larger deployments, this patented feature enables the cost-effective manufacture of custom keypads, allowing enterprises to tailor key size, placement, color and text to best complement applications.

### Motorola MAX Backroom Management

When you choose Motorola's MC9500-K, you get more than the industry's premier rugged mobile computer — you get an elegant system designed to simplify and reduce the cost of mobility. The first of its kind, the Motorola Universal Accessory System provides an unprecedented level of flexibility that maximizes backroom density and enables migration to future generation Motorola rugged mobile computers — without requiring an upgrade of the backroom infrastructure. The form-factor agnostic cradling approach ensures that the backroom infrastructure you buy today can live beyond one generation of mobile computers and can even accommodate popular existing Motorola mobile computers (via an adapter available in the near future). As a result, the need to 'rip and replace' accessories with the purchase of every new mobile computer is eliminated, substantially simplifying and reducing the cost of backroom management — and enabling enterprises to achieve a superior return on investment (ROI) and total cost of ownership (TCO) for the entire MC9500-K ecosystem.

## T&L applications

The MC9500-K enables many applications that provide T&L providers with significant operational and competitive advantage:

### Real-time Proof of Delivery (POD)

The efficiency of proof of delivery procedures affects everything from driver and administrative staff productivity to billing cycles. But when paper-based forms are used to capture signatures, there are a number of issues. The process is not only error-prone, but there is a significant time lag between when signatures are collected and when they are received and processed back at the office to enable invoicing.

The MC9500-K streamlines the end-to-end POD process. When drivers arrive at a destination, the barcode on the shipment is scanned, ensuring that the right shipment is being delivered to the right address. Signatures are captured electronically, and all information is immediately transmitted to the right back office system for instant processing.

Real-time visibility into the delivery cycle eliminates the time lag between data collection and data entry. Invoices can be cut and sent the same day the shipment is delivered, reducing billing cycle times

by days or even weeks — as well as the cash-to-cash cycle. Drivers no longer have to spend time managing paperwork, improving productivity. And the reduction in data entry enables administrative staff to focus on more important business initiatives.



### Real-time Proof of Delivery

The MC9500-K in hand allows drivers to capture and transmit an electronic signature for proof of delivery, just minutes after the delivery is completed. Paperwork is eliminated — as well as the cost and opportunity for errors. And billing cycle times are reduced by days or even weeks.

### Real-time Proof of Condition (POC)

In addition to POD, the MC9500-K can also allow drivers to capture proof of condition (POC) in just seconds. The 3 megapixel autofocus color camera allows drivers to take a high quality snapshot with an embedded date stamp as well as a geostamp, providing proof that the entire shipment was delivered on the right day, at the right time, to the right place — and in good condition.

In the event of damage, the photo is truly worth a thousand words — drivers no longer need to spend time trying to accurately describe the damage on paper forms. And the picture provides a clear and instant understanding of the exact extent of any damage, enabling the right corrective action to be taken at the right time to preserve customer service and satisfaction levels.

### Real-time returns processing

With a mobile computer in hand, drivers can instantly process returns. The items are instantly visible in inventory, available to commit to an incoming order, even while they are still en route back to the warehouse. In addition, the appropriate credit is immediately visible in the invoicing system, reducing invoice cycle times as well as Days Sales Outstanding (DSO).

### Real-time payment processing

With the addition of a magnetic stripe reader, the MC9500-K becomes a fully-featured mobile point-of-sale that allows drivers to process credit card payment right at the delivery site. This snap-on attachment does not disturb the ergonomics of the MC9500-K, ensuring comfortable one-handed operation despite the presence of an accessory. And real-time payment processing reduces the invoice cycle time to just minutes, dramatically improving cash flow and profitability.



### Real-time payment processing

With the addition of a magnetic stripe reader, the MC9500-K becomes a mobile point-of-sale, able to process payments in real time. Invoicing cycle time is reduced to minutes, improving cash flow — and profitability.

### Electronic recordkeeping minimizes paper — and supports green initiatives

The ability to send electronic route plans and manifests directly to the MC9500-K eliminates many paper forms from everyday business processes. Drivers no longer need to stop in the office to pick up paperwork. And since drivers can capture an electronic version of any

paper documents that might be provided by customers, complete with legible fine print, T&L providers can implement electronic recordkeeping, further reducing administrative costs as well as enabling the company to improve its 'green' scorecard.

### Real-time load tracking and dynamic routing

The integration of best-in-class GPS technology allows dispatch to monitor the real-time location of all vehicles. As a result, dispatch can provide customers with a tight yet accurate delivery window, ensuring customers are available and ready to accept the shipment to minimize delivery turnaround times. As new orders arrive during the day, dispatchers can easily identify and dynamically re-route the driver with ample space that is nearest to the customer. In addition, dispatchers can take proactive action on exceptions and notify customers in advance of any unexpected delays. The GPS information can even be utilized to allow customers to track their shipments in real time, reducing call volumes. Faster pickup times, faster delivery times and highly accurate delivery windows dramatically improve customer service. At the same time, the efficiency of the dispatch function is improved — instead of sifting through paperwork for hours to locate the information needed to create and modify schedules, the same information is available in seconds with the press of a few buttons.

### Real-time pickup processing

The MC9500-K also streamlines and error-proofs the pickup process. When drivers arrive at the pickup location, a quick scan of the barcode on the shipment allows the driver to verify that the right shipment is being loaded and that shipping address is correct, eliminating costly mis-ships. The ability to embed time, date and a geostamp into a photograph of the load provides proof positive that the right load was picked up at the right time and place, as well as the condition of the load. The entire record, complete with photograph, can be transmitted before the driver even starts the truck. And the ability to monitor targeted vs. actual pickup times providing supervisors with the information required to better monitor driver performance and customer service levels — and enable more proactive management of drivers.

### Cost-effective and robust voice communications — and more

The MC9500-K provides the comprehensive voice communications required to keep your drivers in touch with dispatch. Whether a dispatcher has a question or

driver has a roadside emergency, push-to-talk instant walkie-talkie style capability cost-effectively connects drivers and dispatch in seconds, with the simple press of a button. And with a fast 3G data connection, drivers can offer customers real-time delivery window updates by the preferred communication method of their choice — with a phone call, an email or a text message. Service levels are improved — customers at work can conveniently monitor delivery windows without interrupting workflows to check messages or answer the phone.

### Real-time navigation and points of interest

The ability to deliver on time every time is a key metric that wins loyal customers in delivery operations. The GPS capability in the MC9500-K provides access to real-time directions that are based on real-time conditions, helping drivers arrive right on schedule despite a major traffic jam in the area. In addition, drivers can easily find the services they need, able to easily research and locate everything from the nearest gas station to a restaurant for lunch in just moments.

### The MC9500-K Series — designed to deliver unsurpassed ROI and TCO

By allowing drivers and dispatch to conduct business in real time, the MC9500-K allows T&L providers to improve operational efficiency and the cash-to-cash cycle. The result is the ultimate competitive advantage — better customer service, satisfaction and retention; better margins; and increased profitability. In addition, the unique feature set of the Motorola MC9500-K drives the cost of mobility to an all time low, allowing T&L providers to get more for their investment dollars by:

Reducing capital expenditures:

- The MC9500-K offers the functionality of five separate devices — a cell phone, a mobile computer, a camera, a bar code scanner and GPS — substantially reducing the number of devices you need to purchase.
- Since the backroom infrastructure is now form factor agnostic, the backroom accessories you purchase today will continue to serve your needs in the future, eliminating the high cost of 'rip and replace' to update device cradles and battery chargers.
- The maximum rugged specifications expand device lifecycle, eliminating the more frequent replacement required for consumer style devices.

- Device utilization and lifecycle are maximized through superior modularity. Right in the backroom, keypads can be changed to support new applications and the WWAN module can be changed to support a different cellular carrier.

Reducing operational expenses:

- Since the MC9500-K offers the functionality of multiple devices, there are fewer devices for employees and IT to manage.
- Compatibility with Motorola's Mobility Services Platform (MSP) provides the comprehensive centralized management capabilities required to enable IT to stage, provision, monitor and troubleshoot all MC9500-K mobile computers — regardless of where in the world they are located. As a result, one of the largest costs associated with any mobility deployment is minimized — the day-to-day management of the mobile devices.
- Since Motorola mobile computers are built on a common technology platform, existing applications developed for other Motorola mobile computers can be rapidly ported to the MC9500-K, reducing deployment time and costs while improving the ROI for existing applications.
- Repair costs are contained and reduced with Motorola's Service from the Start with Comprehensive Coverage support program. This exceptional service is truly comprehensive, providing technical software support as well as end-to-end protection for your device. Normal wear and tear, internal and external components damaged through accidental breakage and select accessories that ship together with the MC9500-K are all covered — at no additional charge.

Future proofing this crucial business investment:

- Often, mobile devices must be replaced because the technology is outdated or too rigid to meet changing business needs. But the MC9500-K offers the very latest technology platform and features plus the flexibility to change cellular networks and keypads, enabling the device to serve business needs until it truly reaches the end of its physical maximum lifecycle.

**For more information on how you can put the MC9500-K Series to work in your delivery operations, access our global contact directory at [www.motorola.com/enterprisemobility/contactus](http://www.motorola.com/enterprisemobility/contactus) or visit [www.motorola.com/mc9500](http://www.motorola.com/mc9500)**

## About Motorola: End-to-end mobility solutions for deployment simplicity and success

Every day, organizations of all sizes all over the world count on Motorola Enterprise Mobility Solutions to maximize personnel effectiveness, improve services, and increase revenue potential. When you choose Motorola for your mobility solution, you get the peace of mind that comes with choosing an industry leader as your technology partner. Motorola offers the proven expertise and technology you need to achieve maximum value and a fast return on investment — as well as first hand experience in virtually every size organization in nearly every major industry. And our end-to-end solutions offer the simplicity of a single accountable source — regardless of the number of vendors involved.

Our comprehensive product offering includes: rugged and enterprise class mobile computers with extensive advanced data capture and wireless communications options; rugged two-way radios for always on voice communications; private wide area and local area wireless network infrastructure enables robust real-time wireless connectivity indoors and outdoors in a campus-style facility — as well as between multiple locations; comprehensive RFID infrastructure offering fixed, mobile and handheld RFID readers; a partner channel delivering best-in class applications and rapid deployment with minimal business disruption; software solutions that enable centralized and remote management of every aspect of your mobility solution; and a complete range of pre-and post-deployment services to help get and keep your mobility solution up and running at peak performance every day of the year.



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