



## The Motorola MC75A

# Lean your end-to-end manufacturing operations with the Motorola MC75A



The MC75A premium 3.5G EDA allows manufacturers to reap the benefits of mobility throughout operations. The small form factor is easy to hold, easy to use and easy to carry, yet offers the rugged specifications required to easily survive life in the most demanding conditions. The WWAN/WLAN model supports workers who spend the day out in the field, while the WLAN model is ideal on the manufacturing floor or outdoors in expansive plant environments. And maximum processing power, data capture capabilities, security and manageability meet the needs of both users — and IT.

### The challenge: enable faster and more cost-effective production and delivery of high quality products

Process and discrete manufacturers face a myriad of issues associated with the production and delivery of product. Faster product lifecycles and the demand for more customized products require manufacturers to be more flexible than ever before. The globalization of the supply chain pressures quality control and manufacturing lead times. And the new economy increases not only competition, but also customer expectations — customers want product delivered faster and at a lower price.

To maintain profitability, manufacturers must eliminate cost, time and errors throughout the entire supply chain — without impacting quality, response times, machine availability or customer service. But when manual processes are used to move information throughout the supply chain, workers are forced to capture information on paper and pen that must then be entered into the computer. This slow movement of information inserts time and cost into all your processes, reducing margins and profitability — and ultimately your ability to meet customer expectations.

### The solution: automate and error-proof processes with mobile voice and data at the point of work

Motorola's MC75A field proven rugged mobile computer offers the comprehensive feature set required to automate many applications, effectively improving the 'lean score', driving errors and cost out of your end-to-end manufacturing operations — and flexibility and profitability in. Rich mobile voice and data allows your workers to complete tasks fast, accurately and on the spot — regardless of the type of finished goods that are produced. Paper and pen are replaced with continuous access to real-time business critical data and applications. Cycle times and costs are reduced, response times are increased, and product production times and quality are improved. The result is real business advantage — increased profit margins, overall profitability, customer service and customer satisfaction.

### Streamline end-to-end manufacturing operations

The MC75A is designed to streamline business processes in virtually every corner of your manufacturing operations, including:

- Quality
- Asset maintenance
- Inspections, operator rounds and mobile HMI/SCADA
- End-to-end track and trace
- Field service
- Delivery operations: route accounting and Direct Store Delivery (DSD)
- Facilities management — security and safety Compliance
- Parts and tool crib
- Training

# MC75A: built to enable mobility in the end-to-end manufacturing supply chain

Motorola's rugged MC75A is purpose built to enable mobility in manufacturing. As one of the world's premier EDAs (Enterprise Digital Assistant), the MC75A offers the most rugged design, the most flexibility, the most enterprise-class features and functionality and the most security in its device class. The easy to use device is small and lightweight, yet rugged enough to withstand all day, every day use in the plant or out in the field. And the MC75A offers an outstanding value — the device stands at the head of its class in features and functionality — but not price.

The following chart highlights the benefits of the many technology advantages that the MC75A offers:



## The MC75A Advantage...

## ...and the enabling feature set

### Flexible wireless connectivity

Cost-effectively support all workgroups inside and outside your four walls

Multiple configurations: a combination 3.5G WWAN broadband (GSM HSDPA or CDMA EVDO Rev A) and 802.11a/b/g WLAN connection, or WLAN only

### The right form factor

Non-obtrusive and easy to carry in virtually any job

A field-proven ergonomic form factor designed for ease of use in virtually any application

### The most rugged design in its product class

Built to withstand everyday life in demanding plant environments, out on delivery routes and even in farm fields

Three specifications ensure reliable operation despite exposure to the dust common in manufacturing plants and warehouses, the inevitable drops inside and outside the four walls and exposure to the elements out in the field: the 5 ft. drop specification, which meets and exceeds applicable MIL-STD 810G specifications; and the 1,000 1.6 ft./0.5m tumble specification and IP54 sealing, which exceed application IEC specifications

### The right product features

The power to run virtually any application

The most robust processing architecture in its class provides support for the most demanding applications — an 806 MHz processor, 256MB RAM/1GB Flash and up to 32GB additional storage

Large screen size with extraordinary clarity for viewing the most detailed data

Transflective color 3.5 in. VGA display with backlight enables easy viewing of any data in any lighting condition, from HMI data on the plant floor to maps for real-time navigation in delivery operations

Maximum data entry simplicity

The touchscreen and a choice of five keypads enables maximum data entry simplicity regardless of job type – Numeric keypads to support heavy numeric data entry; QWERTY/AZERTY/QWERTZ keypads support heavy alphanumeric input around the world, and a DSD keypad for Food & Beverage (F&B) delivery operations

Very cost-effective upgrade from Motorola MC70/MC75 to the latest generation technology

Complete backward compatibility with MC70/MC75 accessories

### The right user capabilities — virtually every voice and data feature available

Enables the capture of practically any type of data

Can capture 1D and 2D bar codes, high resolution photos and videos, signatures and documents as large as 8.5 in. x 11 in., complete with legible fine print (requires selection of 2D imager and 3.2 MP camera)

Rich voice capabilities eliminates the need for wired and cordless deskphones inside the four walls and separate cell phones out in the field — and enables cross-communications with workers carrying different device types on different networks inside the four walls for superior collaboration

PBX integration enables the extension of comprehensive deskphone functionality to the MC75A, eliminating the need for physical deskphones, the associated wiring costs and roaming limitations associated with cordless phones. In addition, the integrated TEAM Express client enables PTT over VoWLAN with other TEAM-Express enabled Motorola devices — including other Motorola mobile computers, TEAM VoWLAN smartphones and even two-way radios operating on a completely separate network

Ability to expand device functionality with a broad offering of task-specific accessories

Rich accessory ecosystem includes: snap-on mobile payment card readers for on-the-spot payment processing in DSD and Route Accounting; a rugged headset for voice calls and voice-directed applications; a gun-style handle and a tiny cordless scanner worn on two fingers to enable comfortable scan intensive tasks, such as inventory takes; and a whole host of third party peripherals (including RFID readers) that extend solution reach

## The applications

### Quality

Quality engineers may need to manage up to 200 different forms to ensure the quality of incoming components and the final product as well as compliance with ISO9000 and other government regulations. The MC75A allows engineers to complete forms electronically, eliminating the need for inspectors to handwrite data that is then transcribed and entered into the computer. In addition, data can be electronically captured and transmitted in real time to the Statistical Process Control (SPC) program, eliminating the lag time between when data is collected and when it is available in the system for analysis. Last, the MC75A allows the automated collection of environmental and waste data, right at the point of waste creation.

### Benefits

- Enables rapid identification and quarantine of materials that do not meet standards, reducing errors as well as the opportunity for and high cost of recalls.
- Protects yield and ensures timely order fulfillment to protect customer service levels.
- Eliminates time-intensive paper-based processes, increasing productivity — the same number of inspectors can now handle more work orders.

### Asset maintenance

Lack of paper and manual procedures dramatically improves the efficiency and the effectiveness of the asset maintenance function:

- Electronic work orders are now completed in real time, eliminating the need for maintenance engineers to waste time shuttling back and forth to the office to pick up work orders that must be completed and then entered into the computer at the end of the day.
- A work order can be automatically generated and scheduled for instant execution in the event the Manufacturing Execution System (MES) or Supervisory and Data Acquisition (SCADA) system detects a potential equipment issue — and an alert can be sent to the nearest technician with the tools and skills to perform the required maintenance.
- Supervisors can monitor work order status in real time, dynamically re-prioritizing work orders as required, ensuring that critical maintenance and repairs are always performed first.
- At the job site, engineers can scan the bar code on the equipment to ensure that maintenance is about to be performed on the right piece of



The MC75A is built to deliver reliable operation — even in the demanding environment of the manufacturing plant and warehouse. The ability to endure multiple 5 ft./1.52m drops and 1,000 consecutive 1.6 ft./0.5m tumbles (2,000 hits) combines with IP42 sealing, creating the most rugged field proven device in the EDA category.

equipment — especially critical in environments that have multiple identical pieces of machinery, such as pumps.

- The wireless connection combines with the high-resolution easy to read screen to enable engineers to access machine history, visual SCADA data, equipment manuals, schematics and more right on the MC75A — no need to hunt for files and manuals for each job.
- The proper repair routine can be presented on the device, complete with detailed instructions and checkboxes to ensure repair accuracy and accountability.
- The ability to integrate stockroom and tool crib requirements with the work order schedule ensures that engineers have the available materials required for the job.
- The ability to capture and transmit a high-resolution photo or video and call a co-worker, supervisor or service center enables the robust on-the-spot collaboration required to resolve maintenance issues as rapidly as possible.

### Benefits

- Maintenance, repairs and operations (MRO) are optimized.
- Maintenance is performed accurately and on time, reducing shutdowns and improving production line uptime.
- Increased production line uptime protects and improves yield.
- Accurate records provide visibility into true maintenance costs, providing manufacturers with the intelligence to better assess whether it is more cost effective to replace rather than maintain a piece of equipment.

- Shrinkage of parts and tools is minimized through better tracking — since parts can be scanned when they are picked up and then used, while tools can be scanned upon pickup and return.
- Productivity is improved, allowing the same number of maintenance engineers to execute more work orders per day.
- Accurate costing per work order and for all MRO assists in cost containment, since work order start and stop times can be automatically captured along with parts that are utilized.
- Ensures that maintenance is performed properly and at the right time, protecting asset lifecycle.

### Inspections, operator rounds and mobile HMI/SCADA

The MC75A streamlines the process for completing inspection and operator rounds, regardless of whether your production machinery is inside the four walls or spread across a vast outdoor campus environment — such as a tank farm or a chemical processing plant. Using either the wireless broadband 3.5G WWAN or 802.11a/b/g WLAN connection, operators can accurately collect and transmit machine readings in real time. Out-of-tolerance specifications can trigger the release of an emergency work order for immediate maintenance. If a machine must be shut down on the spot for safety reasons, an electronic checklist ensures that workers properly execute shutdown procedures.

In addition, mobilizing HMI and Visual Supervisory Control and Data Acquisition (SCADA) information eliminates the need to man the centralized control room. Now, operators can remain out on rounds yet still control and monitor equipment.

#### Benefits

- Maximizes line-side uptime
- Increases workforce productivity
- Protects manufacturing quality, preventing high cost of the inadvertent manufacture of goods that are not saleable

### End-to-end track and trace

The rugged MC75A enables the cost-effective and highly accurate tracking of all activities related to the creation of a product in both discrete and process manufacturing. Bar code scanning, RFID capability (via 3rd party snap-on accessories) and integrated GPS functionality combine to enable track and trace at the very start of the supply chain. Ingredients and components can be scanned as they are received and utilized on the production line — from an automobile tire to raw material such as flour.

Another scan of either the bar code or RFID tag when the product leaves the shipping dock and is delivered completes the track and trace record, ensuring that at any point in time, should a recall be necessary, manufacturers can locate the finished products that contain any defective materials or ingredients, regardless of where they may be in the supply chain.

The result is highly efficient and targeted recalls that maximize consumer safety, minimize recall costs and protect brand equity.

#### Benefits

- Consumer safety is maximized
- Recall costs are minimized
- Brand equity is protected
- The ability to collect comprehensive track and trace data with very little human intervention enables highly accurate and cost-effective compliance with government regulations

### Field service

Whether your field service teams are repairing or inspecting equipment, the MC75A provides the real-time voice and data access required to improve the productivity and reduce the costs of this major business function. Electronic work orders that can be dynamically prioritized replace paper forms. The MC75A allows technicians to access everything they need to get the job done right on the first visit — from asset and repair history to detailed maintenance and repair procedures. All billable hours and parts are accurately captured with real time access to warranty and service level agreements, as well as the automatic capture of job start and stop times and the ability to scan parts and materials as they are used. Motorola MAX Sensor enables automatic screen rotation for easy signature capture. The ability to process magnetic stripe and chip and PIN-based credit and debit cards provides real-time proof of service and real-time payment processing. And GPS provides the real-time navigation and fleet management information required to ensure drivers arrive on time, every time and enable dispatch to maximize the efficiency of everyday routes.

#### Benefits

- The ability to process payments or transmit proof of service completion substantially reduces days-sales-outstanding (DSO), improving profitability.
- Service is performed accurately and on time, with first time resolution, improving customer service and satisfaction.
- Productivity is improved — the same number of field technicians can now execute more work orders per day.

- Profitability is protected — invoices include accurate charges for material and labor.
- The ability to minimize mileage reduces fuel costs, maintenance costs and wear-and-tear on the enterprise fleet.

### Delivery operations: route accounting and Direct Store Delivery (DSD)

The MC75A can dramatically streamline the entire distribution process, regardless of whether you are involved in the order management or the direct delivery of equipment, F&B perishables or non-perishable Consumer Packaged Goods (CPG).

**Delivery.** The MC75A enables the real-time capture of robust proof of delivery (PoD), proof of condition (PoC) and proof of service (PoS) data. Drivers can capture signatures; take and append high-resolution digital photos of shipments to the shipment record; and automatically append the date, time and the geographic coordinates via the integrated GPS capability. The result is highly cost-effective proof positive that the right product was delivered in good condition to the right person at the right time. In addition, MC75A payment accessories and third party mobile printers enable drivers to take magnetic stripe and chip and PIN-based credit and debit cards to process payment right on the spot, complete with a printed receipt.

**Orders.** With the MC75A and a compact mobile printer, DSD drivers can: check stock and price; place an order; and provide customers with a written copy of the order as well as the order delivery date.

**Merchandising.** The rich multimedia capabilities of the MC75A allow delivery drivers to capture valuable customer and competitor information. The snap of a few photos can be instantly transmitted to supervisors to verify that product is in compliance with the plan-o-gram and any additional promotional agreements. And the ability to take and send photos of competitive product displays and shelf presence provides the real-time intelligence supervisors need to proactively respond to competitive promotions, improving response times and overall business agility.

**Fleet management.** The integrated GPS technology in the MC75A allows manufacturers to collect historic route information as well as view fleet location in real time. Dispatchers can create the most efficient routes possible. And in the event a truck breaks down and perishables are on board, such as ice cream, the nearest truck can be spotted in seconds and diverted to pick up the inventory, preventing spoiling of product and ensuring that promised customer delivery times are met.



The MC75A 3.5G WWAN/WLAN model provides a high-speed wireless voice and data connection and all the features and functionality your field service teams need to streamline everyday processes — enabling real-time Proof of Delivery (PoD) and payment processing in Food & Beverage and Consumer Packaged Goods (CPG) as well as real-time work orders and Proof of Service in equipment delivery and repair operations.

### Benefits

- Real-time order and inventory visibility out in the field enables better demand visibility, improved production planning, more cost-efficient use of resources and just-in-time inventory management, greatly improving overall efficiency and profitability.
- The elimination of paperwork increases driver productivity — the same workforce can make more stops per day.
- Errors inherent in paper-based processes are reduced, eliminating the high cost of mis-ships and the need for a second dispatch to the same customer.
- The ability to monitor, analyze and improve routes reduces mileage, fuel costs and vehicle wear and tear.
- Real-time merchandising information maximizes the value of the customer visit by enabling better management of promotional campaigns and better protection of sales and brand equity.
- No need to invest in a separate GPS solution, reducing capital and operational costs associated with technology.

### Facilities management — security and safety compliance

The MC75A provides the peace of mind that your facility is secure and in compliance with safety regulations. The horsepower to support real-time video combines with the 3.5G wireless broadband and 802.11a/b/g WLAN connections to enable security officers to remain out on rounds, yet view streaming video from security cameras — regardless of whether they are indoors,

outdoors or in the most remote corners of the facility. Workers who are inspecting your facility can scan an asset, such as a fire extinguisher, to determine if maintenance or asset replacement services are required. In addition, inspectors who discover an asset that requires repair, such as a malfunctioning exit door or a broken handrail, can take a quick picture and attach it to a work order request, delivering multiple benefits:

- Supervisors can make better decisions about which engineer to assign to the job.
- Engineers can pick up the right parts and tools before traveling to the job site.
- Photographic information enriches the asset history.

### **Benefits**

#### **Security:**

- Dedicated personnel are no longer required to sit in the security control room to watch live video feeds on computer monitors, enabling a reduction in staffing without impacting facility security.
- Security officer effectiveness is increased — staff can now continually patrol the grounds.

#### **Facilities management:**

- All the required information to prove compliance is always available at the press of button — from date and time and who performed the inspection, maintenance or repair to what procedures were performed — enabling cost-effective compliance with safety regulations.
- Increased photographic intelligence enables the dispatch of the right person the first time, improving worker productivity and the efficiency of the safety function.

### **Parts and tool crib**

The MC75A enables real-time inventory visibility in the parts and tool crib. Insight into the work order schedule allows stockroom and tool crib managers to place orders in a timely fashion, ensuring that engineers have the right materials on hand to complete a job. Parts and tools can be scanned as they are received and put into service for easy and accurate warranty tracking. In the event a part breaks, a quick scan can determine if the part is still under warranty and eligible for warranty repair and/or

replacement services. And since workers can scan their identity badge and the bar code on the tools before removing from the tool crib, tracking and accountability for tools is improved.

### **Benefits**

- Tools can be easily located, eliminating the need for buffer stocks of tools to ensure availability, reducing capital purchasing, inventory carrying costs and the time and cost associated with managing a larger tool crib.
- Real-time visibility into the parts inventory as well as the upcoming maintenance schedule enables better management of the parts inventory — costly stockouts are eliminated that could potentially increase machine downtime.
- The ability to associate tools to specific workers improves accountability, reducing the chances of loss and theft.

### **Training**

The powerful processing architecture of the MC75A enables the delivery of desktop-like high performance video — ideal for training. Now, workers can view training videos whenever it is convenient — no need to take workers away from the job to physically attend a training class. In addition, since the videos can be accessed on demand, viewers can opt to rewind and review certain parts of the video as needed or access videos when performing a task — such as a specific repair routine or a lock-out/tag-out procedure.

### **Benefits**

- Training is highly cost-effective, no longer requiring staff down time.
- A simple form at the start and/or end of the video can be automatically completed and submitted to human resources, providing low-cost insurance of compliance with training-related regulations.
- In-house training instructor staff requirements may be reduced, lowering overall costs.
- The automatic compilation of training records reduces the costs related to administering training programs
- The enterprise can easily track and ensure that training requirements are met for each technician to meet compliance, safety and other regulations.

## A rapid return on investment (ROI), a low total cost of ownership (TCO) and the business agility to cost-effectively adapt to market changes

In addition to providing all the features and functionality for your users, the MC75A also offers the ROI and TCO required to satisfy financial decision makers, along with the manageability and security to satisfy the most demanding IT departments by providing:

- **Reduced technology-related capital and operational costs through single device simplicity.** The ability to standardize on a single device to support many applications improves buying power and reduces support costs — there are fewer device types and related accessory families to purchase and manage. In addition, this one device can take the place of a cell phone, a mobile computer, a GPS unit, a bar code scanner and a digital camera, again substantially reducing the number of required devices.
- **Reduced facilities-related capital and operational costs.** Inside the plant environment, the MC75A offers the high performance integrated mobile voice and data capabilities required to eliminate wired workstations and deskphones — and the associated installation costs. The ability to communicate with existing mobile devices — such as other Motorola mobile computers and two-way radios — further improves the ROI of existing technology investments. And the ability to utilize the WLAN for mobile voice inside the four walls helps save on monthly cell phone fees.
- **Improved business agility.** The MC75A acts as a mobile workstation, allowing the easy and cost-effective reconfiguration of production lines as needed. The manufacturer can easily adapt to changing customer and market demands — and the improved business agility protects the general health of the business.
- **Business or Mission critical support.** The rugged design of the MC75A combines with Motorola's world-class mission critical support programs to keep the MC75A in the hands of your workers,

protecting business continuity. Motorola's Service from the Start with Comprehensive Coverage is a unique all-inclusive service that significantly reduces unforeseen repair expenses by covering normal wear and tear as well as internal and external components damaged through accidental breakage. Options such as Commissioning Service and Express Shipping further minimize downtime in the unlikely event your device requires repair. And Motorola's global reach ensures fast support when you need it, regardless of where in the world your properties are located. The result is maximum uptime, maximum device utilization and maximum return on investment (ROI).

- **Low cost management.** Compatibility with the Motorola Mobility Suite provides granular device control and substantially reduces one of the largest costs associated with mobility — day-to-day management. Motorola Mobility Services Platform (MSP) enables centralized and remote control of all your MC75A mobile computers — IT can stage, provision, monitor and troubleshoot tens of thousands of devices inside and outside the four walls, virtually anywhere in the world, all from a central location. Device-level intrusion protection and Mobile Virtual Private Network (VPN) solutions provide additional layers of security to better protect data that is resident on the device and in transit between the MC75A and your network. And Motorola's AppCenter allows enterprises to easily define which features and software applications users can access, preventing unauthorized device usage that could reduce productivity.
- **Government grade security.** Manufacturers need to protect everything from intellectual property to customer's credit card information, which requires compliance with Payment Card Industry (PCI) regulations. The MC75A is the only device in its class that offers the FIPS 140-2 Level 1 certification required for sensitive government agencies, bringing government grade security to enterprise-class operations. In combination with support for the most advanced encryption and authentication protocols, the MC75A enables the layered security required to keep the data on your network safe.

***For more information on how you can leverage the benefits of the MC75A in your manufacturing operations, please visit us on the Web at [www.motorola.com/MC75A](http://www.motorola.com/MC75A) or access our global contact directory at [www.motorola.com/enterprisemobility/contactus](http://www.motorola.com/enterprisemobility/contactus)***



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