



# GET THE MOST OUT OF EVERY MILE: OVERHAUL YOUR OPERATIONS WITH A REAL-TIME DELIVERY NETWORK

## MOBILITY IN TRANSPORTATION AND LOGISTICS



Drive costs down and customer service up with the best-in-class GPS technology in our mobile computers. The same device that eliminates driver paperwork can allow dispatch to track drivers in real time, whether they are at the delivery dock or out on the road — even in areas with a dense canopy of foliage and urban canyons. The constant stream of real-time location information allows dispatchers to better manage routes and ensure drivers arrive on time, with the least amount of miles traveled — reducing fuel costs and vehicle wear and tear. And since you can track mileage and hours logged, you can automatically collect regulatory information, such as hours of service and fuel tax data. The result? Instead of completing volumes of regulatory paperwork, your drivers can spend more time on the road, improving the efficiency of your fleet.

### **THE CHALLENGE: RISING COSTS, COMPLIANCE REGULATIONS AND COMPETITION THREATEN PROFITABILITY**

If you are in the business of moving freight, you face a new set of challenges that threaten your earning potential and your profitability. To keep your existing customers as well as attract new customers, intense competition forces you to keep your rates low. Yet today's customers are more demanding than ever, with zero tolerance for late pickups or deliveries — and information on your competition just a few keystrokes away on the Internet. Fuel prices are not only high, but

also volatile, unpredictably eating away at your margins. Industry regulations limit daily hours of service, yet require drivers to collect more information while they are out on the road, adding paperwork that reduces time in the driver's seat. And then there are the complexities of the new delivery network. The linear predictable routes of the past have been replaced with the complex random webs required to allow your customers to meet the delivery requirements of their customers — including Internet shoppers who want fast delivery of even large items such as furniture. Dispatchers need to make hundreds of real-time decisions to maintain route efficiency — without real-time information.

## APPLICATION BRIEF

### MOBILITY IN TRANSPORTATION AND LOGISTICS

## THE SOLUTION: TRANSFORM YOUR DELIVERY NETWORK WITH REAL-TIME INFORMATION

Motorola's Transportation and Logistics Mobile Computing Portfolio addresses these issues, allowing you to deliver each and every shipment on time, at the lowest possible cost. With our mobile devices in the hands of your drivers and in the cabs of your trucks, real-time processes replace paper throughout the entire delivery network. The split-second visibility of information allows you to more tightly manage your drivers, vehicles, loads and even your customers. And that improved management drives efficiency and profitability into your business, while driving wasted time and inaccuracies out.

### **Dispatch: real-time information drives costs down and service quality up**

Dispatchers have the information they need to orchestrate the most efficient movement of trucks, drivers and loads between pickup and delivery sites, including:

- The location of each truck
- The route your trucks have travelled — and whether a truck is 'off route'
- How many hours each driver has logged
- Which loads are in danger of being delivered late
- The location of all new pick-up requests and the promised pick-up time
- The available space in each truck
- Confirmation of load deliveries
- A potential mechanical problem in the engine that could reduce mileage or result in a breakdown that would wreck havoc with service quality
- Time spent waiting to load or unload shipments at customer locations

As a result, loads are delivered on time, at the right time, with the least amount of time and miles traveled. Costs are minimized and customer service quality increases, improving the bottom line while strengthening customer relationships and retention.

### **Drivers: real-time information increases productivity and reduces errors in the delivery process**

With mobility, computerized forms and automated data capture tools replace paper. Now, drivers can capture a wealth of data with very little, if any, effort — from:

- A signature for instant proof of delivery — and same day invoicing
- Mileage and hours for paperless regulatory compliance
- A photo for indisputable proof of condition
- The scan of the bar codes on cases and pallets to validate that the right shipments are being loaded and unloaded throughout the day.

The result? Time spent on administration is turned into time spent on the road, allowing drivers to cover more miles and make more deliveries every day.

## OVERHAUL YOUR ENTIRE OPERATION — FROM DISPATCH TO DELIVERY

Our mobile computers help you overhaul the way you do business — from the moment a customer orders a pick-up to the moment the order is delivered.

### **Proof of pick-up and delivery of the right shipment — at the right time**

Pickup and delivery processes are typically heavily dependent upon paper forms. But when drivers carry a Motorola mobile computer, there is no need for paper. Drivers start with a quick scan of the bar codes on the shipment to verify that the right boxes and pallets are about to be loaded or unloaded, preventing costly mis-shipments.

Instead of capturing a signature on a paper form that is returned to the office for additional processing, your customers can sign electronically right on the screen of our mobile devices. Drivers can simply hand the mobile computer directly to customers to sign — the signature line will display regardless of which way the device is oriented. Drivers can snap a quick photo of the shipment at the doorstep with a geostamp that is embedded automatically for proof positive of the time, date and physical location of the pick-up or drop-off. The fast cellular connection allows all information to be instantly transmitted back to the office — including the high-resolution color photo.

The result? You have proof positive that the right shipment was delivered to the right place at the right time. And accounting can invoice the same day as the delivery, with less administrative effort and less cost.

### **Damage control: Real-time proof of condition**

A picture really is worth a thousand words — especially when proof of condition is required. For example, if a table was damaged in transit, the driver can take a picture of the entire table as well as a detailed close-up



Motorola's VC6096 mobile computer is an all-in-one-in-cab solution that delivers a world of benefits to Less Than Truckload, Truck Load and Over the Road providers. Driver paperwork is eliminated — no more hours of service logs and fuel tax reports to complete. The information is automatically collected, driving the cost of compliance down, while drivers can spend more time where it counts — out on the road. Route efficiency is improved with real-time GPS locationing. Drivers arrive on time, improving customer service, yet drivers travel fewer miles, reducing fuel costs and vehicle wear and tear. And telematics support provides insight into driving habits of each driver plus engine health, allowing you to proactively protect and improve the lifecycle of one of your most expensive assets — your vehicles.

shot of the damaged area. Text or voice comments can be appended to the photo to explain how the damage occurred and the details of the conversation with the customer. With the press of a few keys, the driver can rename the files so they are intuitively associated with the right work order — no need to spend time transferring to a laptop or desktop computer. The electronic photos are then automatically attached to the work order and submitted instantly, simplifying recordkeeping — no need to organize and store printed photos. The result is indisputable proof of condition, preventing false damage claims and limiting liability to the actual damage that was incurred.

#### **OSD (overages, shortages and damages)**

Processing exceptions during the day can be very time consuming — unless your drivers have a mobile computer in hand. Instead of completing additional forms, drivers can capture the required information electronically and instantly transmit the data directly into your business system. Neither office administrators nor your drivers need to spend time on OSD-related paperwork, improving the productivity of your drivers and your internal administrative staff time.

#### **Real-time payment processing**

A driver arrives at the door to deliver a drop-shipment of a large item to an end customer. The delivery is C.O.D., but the customer does not have the cash on hand. With

a payment card module attached to one of our handheld mobile computers, the problem is solved — customers can use a credit or debit card to make the payment. Your customer appreciates the flexibility to better serve their customers, while their customers appreciate the added convenience.

#### **Real-time paperless recordkeeping — and regulatory compliance**

With Motorola mobile computers, you can eliminate paper — period. At the start of the day, dispatch sends electronic route plans and manifests right to the Motorola mobile computer — drivers no longer need to stop in the office to pick up paperwork or spend time throughout the day processing that paperwork. Even customer paperwork can be turned into electronic documents, complete with legible fine print. For example, with the single press of a button, drivers can use the integrated high-resolution camera to capture and attach an electronic version of a paper Bill of Lading (BOL) and more to the shipping record.

Complying with government regulations in the trucking industry can quickly translate into a sizeable block of time drivers must spend on paperwork instead of driving. Now, you can create an application that allows drivers to simply log on to the mobile device to activate the automatic capture of everything from hours of service to mileage for fuel tax computations —

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### **MOBILITY IN TRANSPORTATION AND LOGISTICS**

no driver action required. When performing safety inspections, drivers can complete an electronic list of checkboxes, ensuring that inspections are always performed consistently. And an unalterable stamp with the time, date and location of the safety inspection can be automatically appended to the form, providing proof that inspections were performed when and where they were required. The result? Driver productivity is improved, and you can count on receiving highly accurate information on time, eliminating the risk of non-compliance fines. And as new regulations are enacted, gathering the new information can be as simple as adding a new auto-fill field to an existing electronic form.

#### **Improve route efficiency and shipment visibility**

Do you know where your shipments are? With best-in-class GPS integrated into our T&L Mobile Computing portfolio, you will. You can count on virtually constant location-based data — even if your trucks are traveling through urban canyons or heavily forested areas. With visibility into the real-time location of all trucks and the shipments in those trucks, dispatchers can:

- Use vehicle proximity and remaining driver hours of service to assign new pick-up requests, minimizing mileage and ensuring on-time arrivals.
- Provide customers with accurate delivery windows — and timely updated delivery windows in the event of delay.
- Review historical route information to refine routes and continually reduce mileage and fuel costs.

#### **Better tracking of demurrage time and fees**

Time is money in the trucking industry, and when customers unnecessarily delay your drivers, demurrage fees help offset the high cost of an idle truck. With our mobile computers, you are no longer dependent upon your drivers to capture and transmit time spent waiting to load or unload to your dispatchers — instead, dispatchers can see arrival and departure times in real time. Alarms can notify dispatchers before the time threshold is crossed, allowing dispatch to proactively contact the customer to help eliminate the extra charge and avoid the downtime. In the event the excessive idle time does occur, you can consistently and accurately charge the demurrage fee, complete with undeniable

proof in the form of GPS-based information. And to help protect the productivity of your fleet, dispatch can identify customers who regularly incur demurrage charges and develop a plan to help eliminate those extra charges for a win-win situation: your customers eliminate penalty fees and your fleet utilization, freight capacity and customer service levels are improved.

#### **Make every driver a safe driver**

Our fixed mount in-vehicle mobile computer provides a right-now look into driver behavior, allowing dispatch to spot unsafe driving habits. Drivers that routinely speed and brake heavily can be better managed and counseled on how to develop safer driving practices that improve the safety of the driver, the truck and everyone in the vicinity of the driver, reducing risk — and insurance premiums.

#### **Improve load security**

Since GPS tracking provides real-time location information, geo-fences can be established to define the geographic perimeter for each route. When drivers stray outside of the geo-fence, alarms can instantly notify dispatchers, who can then immediately contact drivers to determine if they are off route for a valid business reason — or if there is a potential security issue with a load.

#### **Real-time navigation**

Your drivers spend their day out on the road, where traffic and road conditions are just as dynamic as your delivery manifest. With access to real-time navigation as well as traffic and road conditions, drivers can easily find their way around a traffic jam or a road closing to remain as on schedule as possible.

#### **Real-time voice and text-based communications for faster response times**

With real-time voice, text messaging and email communications in hand, your drivers can reach and be reached in seconds by co-workers, dispatch, supervisors and customers. Push-to-talk (PTT) walkie-talkie style voice communications (carrier dependent) provide an instant connection between dispatch and one driver — or dispatch and all drivers. When drivers return to the depot, our mobile computers can switch from the cellular network to any available wireless LAN, providing cost-effective and robust in building voice and data services.

## **INCREASE THE UPTIME AND LONGEVITY OF YOUR VEHICLE FLEET**

Our mobile computers allow you to monitor the real-time health of your vehicles and automatically schedule standard maintenance based on miles driven, increasing the uptime of each and every vehicle in your fleet.

### **Perform maintenance on time, every time**

Whether you leverage the GPS functionality in our mobile handheld computers or the telematics data in our vehicle mount mobile computers, you can automatically monitor the mileage on every truck in your fleet. Once that information is electronically transferred to your vehicle maintenance system, regular maintenance can be automatically scheduled and the necessary parts and tools ordered. Maintenance is performed on time, every time, increasing vehicle lifecycle, performance and fuel efficiency.

### **Spot and address developing mechanical issues — before a breakdown occurs**

With our vehicle-mount mobile computers installed in your trucks, real-time visibility into engine error codes and other engine metrics can help you spot and instantly react to developing potential mechanical issues. The proactive repair prevents unplanned downtime that can wreak havoc with your delivery schedule — and threaten customer satisfaction.

## **RUN A MORE PROFITABLE AND SUCCESSFUL BUSINESS — AND GET A SUPERIOR RETURN ON YOUR MOBILITY INVESTMENT**

With our mobile computers in the hands of your drivers, you'll have the real-time information you need to reduce the cost of your delivery operations, get the most value out of your vehicles and your drivers, and improve the quality and consistency of your services. The result is a highly successful mobility solution that drives your profits and the success of your business to a new level.

### **Improve customer service quality and customer loyalty**

With more efficient business processes and real-time visibility into the location of your entire fleet, dispatchers can ensure pickup and delivery on time, every time — a consistent high-level of service that earns customer satisfaction and loyalty.

### **Save money**

Tighter day-to-day management reduces costs throughout your operations:

- The reduction in miles travelled per day reduces fuel costs.
- A reduction in paperwork helps contain staffing costs by improving workforce efficiency — the same number of drivers can deliver more loads and the same administrative staff can handle more work.
- The reduction in miles travelled per load allows trucks to deliver more loads throughout their lifecycle, improving the return on investment (ROI) for these high dollar assets.
- The automatic collection of information required to comply with government regulations reduces the cost of compliance.
- Detailed information on damaged shipments eliminates overpayment of damage claims.
- Better management of driving habits reduces maintenance costs.
- Safer driving habits mean fewer traffic violations, minimizing insurance costs.

### **Improve profitability**

- Freight is now delivered at the lowest cost per load, improving margins and allowing more competitive pricing.
- Identify and collect all demurrage fees, providing the revenue required to offset vehicle downtime.
- Reduce unplanned vehicle downtime with proactive maintenance, protecting service continuity.

### **Decrease your environmental footprint**

Mobility also helps protect the environment by making your business operations greener:

- Proper maintenance and fewer miles reduce the carbon footprint of your vehicle fleet.
- Elimination of paper forms reduces the amount of paper-based waste — and the energy required to recycle that waste.

## THE MOTOROLA T&L MOBILE COMPUTING PORTFOLIO

Whether your drivers are local or over-the-road, and whether they are moving large shipments between distribution points or drop-shipments to your customer's customer, there is a Motorola mobile computer that is just right for the job — and your budget.

All devices offer:

**A rugged design:** Get reliable everyday operation out in the field despite exposure to the inevitable drops, extreme weather conditions or even spilled coffee.

**The fastest cellular connections, fast processors and plenty of memory:** Give your workers desktop-style application performance on a handheld mobile computer.

**Anywhere, anytime capture of virtually any type of data:** Scan 1D and 2D bar codes, take high-resolution color photos and videos, and capture signatures and documents — complete with legible fine print.

**Motorola's unrivaled bar code scanning technology:** As the inventor of the entire bar code industry, we offer high performance 'scan and go' simplicity, so your drivers can capture even damaged and poorly printed bar codes — without aligning the bar code and scanner window.

**Superior GPS technology:** Enables more signal locks in more areas with more accuracy, improving the availability and value of your location-based applications.

**Easy centralized remote management of your Motorola and non-Motorola mobile devices and their peripherals:** Get your devices up and running, update applications, monitor the health of all devices and troubleshoot and resolve device issues — all without ever touching our mobile computers.

**Motorola's industry leading service plans that cover everything — period.** Service from the Start with Comprehensive Coverage sets the standard for post-deployment support. This unique all-inclusive program includes normal wear and tear as well as accidental damage to internal and external components, ensuring unpredictable repair expenses never impact your budget.

**Security you can count on:** Make sure only authorized users can access your mobile computers, your data and your network. Motorola's Mobile Security Suite brings wired network class security to the data resident on our mobile devices as well as the data in transit over cellular or Wi-Fi networks, with a firewall, intrusion prevention, enforced authentication and data encryption on the mobile computers; mobile VPNs for government grade security over wireless networks; and more.

### **Extraordinary control over the features on our mobile devices:**

Motorola's AppCenter allows you to choose which device features and software applications your users can access to protect productivity. For example, you can lock out web browsing or disable voice calling for drivers that need data only.

### **Easy and cost-effective application development and deployment:**

Our partner channel offers ready-to-go and custom best-in-class applications to streamline virtually any business process. Our complementary PocketBrowser application allows your developers to easily incorporate bar code scanning as well as photo and document capture in your applications. And if you are using mainframe applications today, your Motorola mobile devices can access those applications right out of the box with our Terminal Emulation application.

### **Which device is right for your drivers?**

All the mobile devices in our Transportation and Logistics portfolio offer all the features you need to maximize efficiency in your operations. A few key differences will help you determine which device is right for your drivers and your budget.

**Size and Weight:** Whether you are most concerned with physical device size and weight or how rugged a device is, you'll find a device that is just right in our large mobile computing portfolio — from small devices that easily slip in a pocket to extra-rugged full size mobile computers.

**Display:** Determine how much display area your applications require. Are screens simple or complex? Do workers need to view multimedia training or other educational product information that may require more display space?

**Ruggedness:** Select the drop specifications, environmental sealing and operating temperature range you need for reliable everyday operation.

**Interface:** Need to make device use as easy as possible? Devices that offer the Motorola Enterprise User Interface (MEUI) as an alternative to the standard Windows Mobile interface put virtually everything your drivers need right on the home screen, just a screen touch or two away — from business applications to email.

**Payment processing:** If you need real-time payment processing, select models support payment technologies around the world — from magnetic stripe readers for credit cards to Chip and PIN-based readers that can process international debit and credit cards.

# MOTOROLA T&L MOBILE COMPUTERS

	ES400	MC65	MC75A (A6/A8)	MC9500-K SERIES	VC6096
					
	<a href="http://motorola.com/es400">motorola.com/es400</a>	<a href="http://motorola.com/mc65">motorola.com/mc65</a>	<a href="http://motorola.com/mc75a">motorola.com/mc75a</a>	<a href="http://motorola.com/mc9500">motorola.com/mc9500</a>	<a href="http://motorola.com/vc6096">motorola.com/vc6096</a>

## GENERAL DESCRIPTION

<b>Form factor</b>	Pocket-sized handheld	Size optimized handheld	Handheld	Full size handheld; largest handheld display	Full size in-vehicle fixed mount
<b>Applications</b>	Business applications: Proof of Delivery, Proof of Condition, more efficient route instructions, real-time load track and trace, geofencing, voice communications, safety inspections, driver logs, fuel tax reports, automated demurrage charge capture, real-time navigation, maintenance scheduling				Telematics; automatic collection of compliance data; proactive maintenance

## WIRELESS CONNECTIVITY OPTIONS

<b>WWAN (cellular carrier)</b>	<ul style="list-style-type: none"> <li>Dual user-selectable 3.5G GSM HSPA and CDMA-EVDO Rev A</li> </ul>	<ul style="list-style-type: none"> <li>Dual user-selectable 3.5G GSM HSPA and CDMA-EVDO Rev A</li> </ul>	<ul style="list-style-type: none"> <li>Order with either 3.5G GSM HSDPA or CDMA-EVDO Rev A</li> </ul>	<ul style="list-style-type: none"> <li>Purchase with or without one of three modules and add or change at any time onsite:                             <ul style="list-style-type: none"> <li>» 3.5 GSM HSDPA or CDMA-EVDO Rev A for integrated voice and data</li> <li>» Dual user-selectable data only 3.5G GSM HSUPA or CDMA-EVDO Rev A (for users who don't need voice)</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>3.5 GSM HSDPA</li> </ul>
<b>GPS</b>	•	•	•	•	•
<b>Wi-Fi a/b/g and Bluetooth</b>	•	•	•	•	•

## USER AND APPLICATION CONSIDERATIONS

<b>Weight</b>	5.5 oz./156 g	12.5 oz./359g	14.9 oz./423 g	22 oz./623 g	4.85 lbs./2.2 kg
<b>Display</b>	PenTile® 3 in. VGA	3.5 in. VGA	3.5 in. VGA	3.7 in. VGA	6.5 in. VGA
<b>Processor</b>	600 MHz	600 MHz (multi-CPU)	806 MHz	806 MHz	624 MHz
<b>Accelerometer*</b>	•	•	•	•	N/A
<b>MEUI**</b>	•				
<b>Keypads</b>	QWERTY, AZERTY, QWERTZ	Numeric, QWERTY, AZERTY, QWERTZ	Numeric, QWERTY, DSD, AZERTY, QWERTZ	Modular (change onsite): alpha primary; numeric telephony (DSD), numeric calculator, alpha numeric	Full 65-key QWERTY
<b>Extra security features</b>	Built-in biometric fingerprint reader		FIPS 140-2	FIPS 140-2	

## RUGGED DESIGN

<b>Drop tested</b>	4 ft./1.22 m	6 ft./1.8 m	6 ft./1.8 m	6 ft./1.8 m	N/A
<b>Tumble tested</b>	•	•	•	•	N/A
<b>Sealing</b>	IP42	IP64	IP54	IP67	IP64
<b>Operating temperature</b>	32° F to 104° F/ 0° C to 40° C	14° F to 122° F/ -10° C to 50° C	14° F to 122° F/ -10° C to 50° C	-4° F to 122° F/ -20° C to 50° C	-4° to 140° F/ -20° C to 60° C

## VERTICAL MARKET REQUIREMENTS

<b>Trigger handle</b>		•	•		
<b>Snap-on MSR</b>		•	•	•	
<b>Snap-on Debit/Credit card reader</b>			•		
<b>Bluetooth handheld and wearable hands-free scanners</b>	•	•	•	•	•

\*Motorola MAX Sensor provides a business class accelerometer technology that enables dynamic screen rotation, automatic power reduction whenever the device is not in use and more.

\*\*The Motorola Enterprise User Interface (MEUI) is a unique customizable user interface that puts everything your drivers need on the home screen, making device use and access to features easier and faster.



For more information on how you can make the most out of every mile in your T&L operations, access our global contact directory at [www.motorola.com/enterprisemobility/contactus](http://www.motorola.com/enterprisemobility/contactus) or visit [www.motorola.com/t&l](http://www.motorola.com/t&l)