



The Motorola MC55 eCitation solution: Providing a path to higher revenues, increased productivity and officer safety



With Motorola's MC55 Enterprise Digital Assistant (EDA) in hand, officers in the field have everything they need to issue and process citations in real time. Paperwork and citation errors are reduced — improving officer productivity, officer safety and citation revenues. In addition, the MC55 is at the top of its class in functionality, yet in the middle of its class in price, providing an extraordinary value for budget constrained law enforcement agencies.

The challenge: unprecedented budget cuts force agencies to do more...with less

In the face of revenue reductions related to unpaid taxes and unprecedented budget cuts, today's cities and law enforcement agencies must figure out how to cut costs — without impacting public safety or the quality of public services. The International Association of Chiefs of Police is reporting an expected 60 percent reduction in funding for state, tribal and local law enforcement agencies from 2008 levels — representing a \$19.8 billion dollar reduction.¹ As a result, law enforcement agencies in big cities and small towns are forced to figure out how to do more with less — and how to protect every penny of revenue. One way law enforcement agencies are addressing these challenges is to automate and reduce paper-based processes — and one of the most common processes under scrutiny is that of the paper-based citation.

The high cost of a paper-based citation

For agencies that are utilizing paper-based citations, the process is not only time-consuming, but also error-prone — reducing productivity and revenues. An agitated constituent or the stress of an accident scene can cause an officer to inadvertently make a mistake while completing the paper form. In addition to the officer's time to manually complete a citation, a data entry clerk must manually key the handwritten information into the system. Legibility issues related to the handwritten data can easily lead to a data entry error. The magnitude and cost of that error can easily multiply since citations are often entered into as many as three reporting systems — police records, court case management system and citation tracking. The result is a recipe for a potentially devastating loss of revenue due to a high volume of citation errors — and the dismissal of those tickets.

According to the Bureau of Justice and the U.S. Department of Transportation, approximately 10 out of every 100 tickets issued is dismissed due to errors, translating into millions of dollars in lost revenue.² Yet in real life, this estimate often proves to be conservative. For example, in one U.S. city, parking violations alone represented three percent of the city's revenue — approximately \$500

KEY BENEFITS

- **Increased productivity:** Real-time processing of an electronic citation is completed in a fraction of the time of a paper-based citation, providing an agency-wide increase in productivity.
- **Increased data accuracy:** Bar code scanning, drop down menus and the ability to auto populate fields substantially reduce the errors typically found in paper-based citations.
- **Increased revenue:** The reduction in errors reduces the number of citations that are dismissed. In addition, less paperwork translates into more time out on patrol — and the opportunity to prevent violations.
- **Reduced costs:** Employee utilization is improved, the elimination of multi-part paper citations reduces office supply costs, and the need for filing cabinets and related supplies is also reduced.
- **Increased officer safety:** Officers spend less time out of the patrol car, reducing the opportunity for injury from traffic or vehicle occupants.
- **Increased community service levels:** Officers have more time to spend out on patrol, increasing response times as well as citizen safety and satisfaction levels.

million USD. Yet one third of the 25,000 tickets issued daily were automatically dismissed, due to either a technical error or illegible handwriting, representing a loss of about \$250 million dollars — every year.

In addition to the loss of revenue, paper-based citation processes can drive operating costs up — and community service levels and officer safety down. The more steps involved in processing a citation, the longer it takes to process and the more human resources it requires. Staffing costs and the cost per citation increase. Officers are forced to spend more time completing paperwork, reducing time out on patrol. Finally, handwritten citations are very time consuming, with a reported average of 10 minutes to complete. Not only is the number of traffic stops an officer can make per day is reduced, reducing potential citation revenue — but studies have also validated that the more time an officer spends out of the car issuing a ticket, the greater the risk to his or her safety. Being struck by a vehicle is the third leading cause of death for on-duty police officers in the United States.³

The solution: automate and error proof the citation process with the powerful Motorola MC55 handheld mobile computer

With Motorola's MC55 Enterprise Digital Assistant (EDA) in hand, officers in the field have everything they need to issue citations in real time, automating the citation process. A real-time wireless connection to your back-end citation applications allows officers to complete an electronic version of a citation instead of paper form. Date and time are automatically recorded. The ability to scan a bar code or magnetic stripe on a driver's license combined with a real-time connection to the Department of Motor Vehicles (DMV) enables the automatic population of many fields in seconds, including name, address, license number and expiration date. The real-time connection to the Department of Motor Vehicles (DMV) also allows officers to double check license information and status, check for outstanding violations and even view a driver's photo to verify identity. Drop down menus for violations and vehicle information further streamline data capture and protect against errors, and related fields can be automatically populated, such as fine amounts and court information. In addition, integration of GPS and a high-resolution color digital autofocus camera allows officers to capture and append photographic evidence to the electronic citation with the press of a button, complete with a geostamp — the latitude and longitude of the location. For example, officers can snap panoramic pictures of an entire accident scene as well as close-ups of vehicle damage to document proof of location and proof of condition — evidence that can be instantly and automatically appended to an electronic accident report.

When the electronic form is complete, officers can present the mobile computer to the violator to verify the information on screen. The citizen's electronic signature at the bottom of the electronic form provides proof of receipt — and validates that the constituent had the opportunity to review the accuracy of the citation data. With the addition of a mobile printer, officers can print the citation for the violator right on the spot — the only paper copy that is required. The press of a button completes the transaction, simultaneously transmitting the information in real time to all the required agency systems.

Finally, with a real-time connection to the Internet in hand, officers in the field can access other law enforcement databases, such as the National Crime

The Motorola MC55: Size optimized and feature-rich for eCitation applications

Designed to fit in an officer's shirt pocket, the MC55 packs the ultimate in features and rugged design into one of the smallest and lightest devices in the rugged EDA class to date. The MC55 not only re-defines the standard for rugged EDA design, but it also offers an extraordinary value for law enforcement agencies — in the middle of its class in price, yet at the top of its class in functionality:

- Fully featured mobile computer
- World class 1D or 2D bar code scanner
- 2 megapixel color autofocus digital camera with flash
- Integrated best-in-class GPS
- Wireless data and cellular voice (GSM/GPRS/EDGE networks)
- Bluetooth(R) Class II, v2.0
- Choice of keypads (QWERTY, AZERTY, QWERTZ and numeric)
- IP54 sealing
- Superior impact resistance: drop and tumble tested
- Full accessory suite, including a snap-on magnetic stripe reader

Information Center (NCIC). Now, officers can identify stolen vehicles, check the driver's criminal history and more — improving officer safety and the ability to apprehend known criminals.

The results

Since the citation is completed and processed in real-time, the traditional multi-part form is eliminated — along with the time and human resources required to process those forms back in the office. The results of the automation of this process are dramatic. Where traditional paper-based citations take an average of 12 days to process,⁴ eCitation solutions reduce that time to minutes. Bar code scanning alone has been credited with eliminating up to 200 keystrokes per traffic citation⁵ — automating and ensuring the accurate capture of the information contained on a driver's license.

The benefits of eCitation

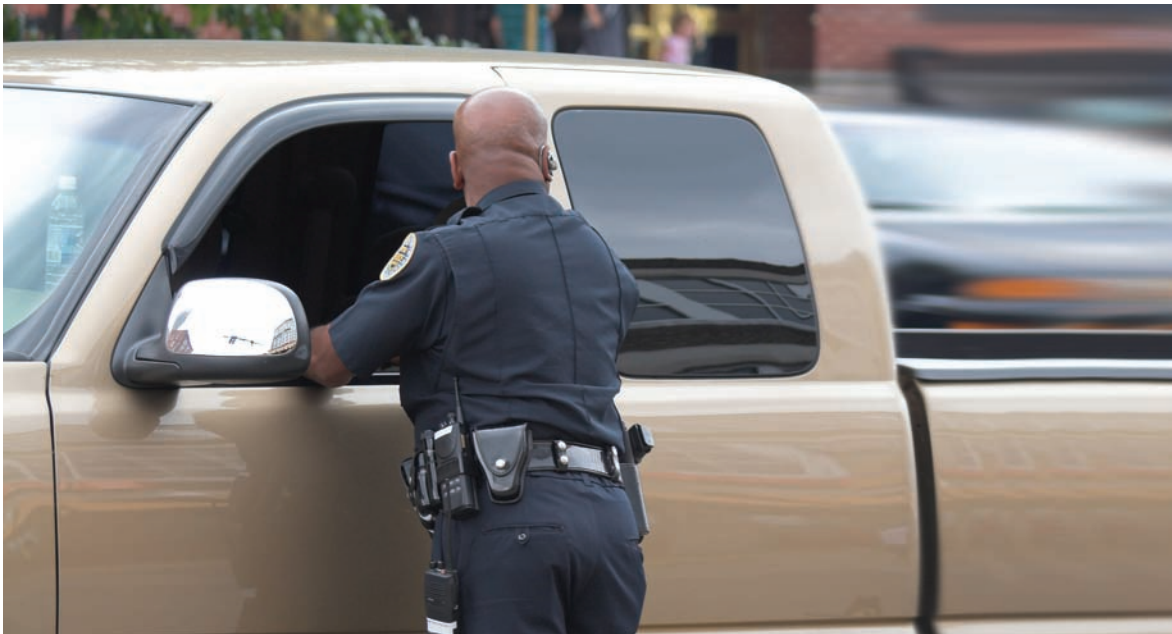
Increased productivity

Due to the elimination of paper and the automated data capture, officers can complete an eCitation in just a fraction of the time of a paper-based citation.

Cities like Portland, Oregon and Glendale Arizona as well as Miami Dade County FL who have deployed an eCitation solution report a dramatic 80 percent reduction in processing time — officers are able to complete a citation in just two minutes.⁶ Eliminating the paper citation also eliminates administrative time previously required to enter citation data into a computer and file the paper tickets. The result is an agency-wide increase in productivity — officers now have more time to spend on patrol instead of on paperwork, and administrative staff is available to spend more time on more critical tasks.

Increased data accuracy

Practically all the data on a citation is either automatically captured via bar code scanning, selected from drop down menus or auto-populated based on information that is entered. As a result, the costly data errors that typically result in ticket dismissal are virtually eliminated — from handwriting legibility issues to keying errors. For example, in North Carolina, the first state to implement a statewide electronic citation system, 2,000 officers in over 450 law enforcement agencies issued over 1,000,000 eCitations with absolutely no errors.⁷



The more time an officer spends out of the car, the greater the safety risk. With the MC55 in hand, your officers have the tools they need to reduce the average citation processing time by as much as 80 percent, enabling officers to issue citations in a little as two minutes.⁶ Officers spend less time out of the car and have more time to spend on patrol, protecting the citizens of your community — instead of processing paperwork.

Increased revenue — and reduced costs

Revenue lost due to citation error is recaptured. Less paperwork keeps officers out on patrol, where they can write more citations. The dramatic reduction in data entry and filing requirements improves utilization of administrative staff. And even office supply costs are lowered — multi-part paper citations no longer need to be purchased, and the need for filing cabinets and filing-related supplies is reduced.

The State of North Carolina is proof of the return. In the five fiscal years following the 2001 statewide deployment in all 100 counties, the state estimates the total revenue increase and cost savings attributable to the state's eCitation solution at just over \$17 million — an average annual return of \$3.4 million — with a rapid return on investment of just 20 months.⁷

Increased officer safety

Since an eCitation can be issued in a fraction of the time of a paper citation, officers spend less time out of the patrol car, reducing the opportunity for potential injury either from traffic or vehicle occupants. In addition, the Motorola MC55 can provide a real-time connection to other databases, such as the National Crime Information Center (NCIC), the Department of Motor Vehicles (DMV) and Criminal Justice Information Services (CJIS). Officers can utilize these resources to determine if a vehicle is stolen or was involved in a crime before approaching the car's occupants, allowing officers to make more informed decisions that greatly improve safety. And since the pocketable, lightweight MC55 is capable of capturing a photograph, video and even a voice recording, officers have everything they need to capture evidence and other situational proof, including the ability to record witness narratives, right in the their hand.

Increased community service levels

Officers can now spend more time out on patrol, increasing the safety of the citizens of the community and response times as well as improving the satisfaction levels of your most important customers — your constituents.

Increased citation profitability

Automation of the citation process greatly reduces the actual cost of a citation. An eCitation application virtually eliminates errors, the human resources previously required to process a paper citation — from law enforcement officers to data entry clerks, and the office equipment and supplies required to manage and store millions of paper-based citations. As a result, the cost to issue the citation is drastically reduced, increasing the margins on citation revenue.

Why choose Motorola's MC55 for your eCitation solution?

While an eCitation solution can be deployed on a wide range of mobile devices, Motorola's MC55 Enterprise Digital Assistant (EDA) is truly built for the job. This fully featured handheld mobile computer packs the ultimate in functionality and rugged design into one of the smallest and lightest pocketable devices in the rugged EDA class to date. The MC55 not only re-defines the standard for rugged EDA design, but it also offers an extraordinary value for budget constrained law enforcement agencies — at the top of its class in functionality, yet in the middle of its class in price.

What can you expect from Motorola's MC55?

The math adds up

Regardless of the size of your law enforcement agency, Motorola's MC55 eCitation solution makes financial sense by enabling the recapture of a substantial amount of revenue:

Agency size	Small agency	Mid-size	Large
# of citations written per year:	10,000	300,000	1,000,000
Percent of dismissed citations:	10% (1,000)	10% (30,000)	10% (100,000)
Average fine:	\$75	\$75	\$75
Total potential citation revenue:	\$750,000	\$22,500,000	\$75,000,000
Actual citation revenue:	\$675,000	\$20,250,000	\$67,500,000
Potential citation revenue to be recaptured:	\$75,000	\$2,250,000	\$7,500,000

The most rugged device in its category

The MC55 is packed with features that provide an optimized platform for life on patrol. The MC55 is the first and only mobile computer to date to offer a Monocoque housing — a type of frame design widely utilized in the aerospace and automotive industries to literally build a better body. Motorola's patented unibody frame eliminates the stress points associated with the typical clamshell design (where two frame 'halves' are held together by screws). In the event the device is dropped, stress is evenly distributed throughout the entire surface of the device, greatly increasing torsional rigidity and structural stability — unlike a clamshell design where the stress is concentrated on the bosses (the flanges that hold the screws).

The MC55 meets and exceeds military (MIL-STD) and industrial (IEC) drop, tumble and sealing specifications, and offers two impact specifications for stress and endurance. Motorola's stress test is performed across the entire operating temperature range to ensure durability even in extreme cold or hot temperatures — reaching well beyond the parameters of the typical drop test. And in the tumble test, the MC55 continued to perform reliably, even after 500 consecutive short drops of 1.6 ft./5m in a rotating drum.

And finally IP54 sealing ensures reliable operation despite exposure to dust, moisture and liquid spills.

Truly pocketable and easy to use with a size optimized design

The MC55 is not only rugged, it is small enough to fit in an officer's shirt pocket. The high definition 3.5 color QVGA touch screen is easy to view in all types of lighting, inside and outside — even in bright sunlight. The specially designed keypad accommodates small, large and even gloved hands, and includes industry leading keypad ergonomics for easy and accurate data entry. In addition, the MC55 is designed for one-handed operation, so your officers always have one hand free for fast action should a situation become dangerous. And the intuitive placement of buttons combines with the industry standard Windows® Mobile operating system for a very comfortable and familiar interface that is second nature, allowing officers to stay focused on the job at hand instead of the technology.

All the features you could ever need

Since the Monocoque housing eliminates the need for 'bosses' (flanges that hold the screws), there is more room for more electronics. Motorola utilized



The MC55 is not only exceptionally rugged, it is also exceptionally small and light. Truly pocketable, the MC55 allows law enforcement agencies to standardize on a single device for all officers — regardless of whether they patrol in a car, on foot, on horseback, on a motorcycle or on a bicycle.

that additional space to pack virtually every mobile computing function available that can help improve officer productivity and safety into the MC55. Where most competitive devices force you to choose between functions, with the MC55, you can have it all, including both a bar code scanner and a high resolution color camera — providing the flexibility to choose the functions that will best suit the needs of your officers.

Bar code scanning

Motorola's integrated world-class 2D imager provides the dependable, rapid and accurate capture of the 2D bar codes found on driver's licenses. Omnidirectional scanning provides true 'point-and-shoot' capture of bar codes by eliminating the need to align the scanner and license, further simplifying data capture out in the field.

High resolution color camera

The MC55 is the only device in its category offering a 2 megapixel autofocus flash-enabled color digital camera, allowing officers to capture a close-up detailed photograph or a picture of a scene as well as video, signatures and documents as large as 8.5 in. x 11 in. — complete with legible fine print.

Integrated best in class GPS

Integrated GPS functionality benefits your officers and the agency. Officers enjoy location-based applications, able to easily obtain real-time directions around traffic jams to ensure prompt arrival at an emergency site. With real-time visibility into officer location, dispatchers can help ensure a swift response to emergency calls throughout the day.

And since Motorola selected a best-in-class SUPL 1.0 compliant chip that works in either standalone GPS or Assisted-GPS (aGPS) mode, your officers enjoy a faster fix in more areas, providing the performance and availability improvements you need to increase the value of your location-based applications. Why? The SUPL-compliant aGPS mode of the MC55 enables GPS data to be obtained from a local (terrestrial) server, improving the availability of GPS data when there is a limited view of the sky and satellite signals are weak. The two alternative solutions — standard aGPS and non-SUPL compliant solutions that utilize predictive instead of real time data — deliver reduced performance. Standard aGPS solutions require at least three strong satellite signals to obtain a fix. And while non SUPL-compliant solutions that utilize predictive data require only one strong satellite, data accuracy decreases as the predictive data ages, reducing the accuracy of your GPS applications.

High performance architecture and robust wireless connectivity

The MC55 offers the processing power and memory architecture required to support virtually all the applications that could benefit your officers out in the field. Compatibility with the GSM/GPRS/EDGE broadband cellular network provides support for the world's broadest wireless voice and data footprint, providing the most pervasive connection available outside the four walls, no matter where in the world your agency is located. Support for 802.11b/g Wi-Fi enables seamless connection to a wireless LAN for more cost-effective connectivity when officers are in the office or in hotspots. And with a Bluetooth® wireless connection to a Bluetooth-enabled mobile printer and headset, officers enjoy easy on-the-spot cable-free convenient printing of citations as well as hands-free voice capability for cell phone calls, further simplifying life on-the-job for your officers.

The little device with the big return on investment (ROI)

A rapid return on investment makes the MC55 easy for budget-constrained law enforcement agencies to cost-justify. The MC55:

- **Increases productivity and revenue:** The MC55 state-of-the art mobile computer provides all the technology needed to streamline, automate and error-proof the citation process, driving productivity and revenue up.

- **Reduces capital and operational expenses:**

The MC55 packs the power of four devices into one — a cell phone, bar code scanner, camera and mobile computer. As a result, agencies can provide more functionality with fewer devices, dramatically reducing the number of devices to purchase and manage.

- **Delivers a very low total cost of ownership (TCO):**

The rugged design of the MC55 provides a three to five year life cycle — two to three times that of the average consumer-grade PDA. And Motorola's end-to-end mobility solutions offer everything you need to go mobile — all from a convenient single source — including management solutions as well as world-class pre- and post-deployment services. Motorola's Mobility Services Platform (MSP) dramatically reduces the single largest cost of any mobility deployment — day-to-day management of the mobile devices. MSP enables your IT staff to remotely stage, provision, monitor and troubleshoot all your MC55 devices, regardless of where they are located — all from a single centralized location. In addition, MSP enables automatic remote locking and wiping of lost or misplaced devices to secure your network and data against unauthorized access. Our Advanced Services allow you to leverage our decades of experience in deploying mission critical mobile solutions, and can help ensure that your solution is designed to deliver maximum benefits and deployed in record time, with minimal disruption to your day-to-day operations. And finally, even the most rugged devices need a support plan for 'just-in-case' peace of mind. Service from the Start with Comprehensive Coverage sets the standard for post deployment support by including normal wear and tear, as well as coverage for internal and external components damaged through accidental breakage, significantly reducing your unforeseen repair expenses.

For more information

For more information about how the MC55 can help your agency increase citation revenues and reduce costs, please visit us on the web at www.motorola.com/MC55. For more information on the return on investment for eCitation solutions, please download our white paper, "The ROI of eCitation: Just the Ticket to Higher Revenues", located at www.motorola.com/eCitation

About Motorola Enterprise Mobility Solutions

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 business in nearly every major industry. Every day, businesses of all sizes all over the world count on Motorola Enterprise Mobility Solutions to maximize employee effectiveness, improve customer service and increase supply chain efficiency.

Our broad technology portfolio and world-class partnerships enable us to offer true end-to-end solutions that offer the simplicity of a single accountable source — regardless of the number of vendors involved. Our comprehensive product offerings include: rugged and enterprise class mobile computers with extensive advanced data capture and wireless communications options; business-class smartphones; rugged two-way radios for always-on voice communications; private wide area and local area wireless network infrastructure to deliver wireless connectivity to workers inside and outside the four walls — and to network multiple business locations; comprehensive RFID infrastructure, including fixed, mobile and handheld RFID readers; a partner channel delivering best-in class applications; software products for central 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 mobile automation system solution running at peak performance every day of the year.

Footnotes:

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