



MOTOROLA DS3500 SERIES: IMPROVE QUALITY CONTROL AND TRACEABILITY IN YOUR MANUFACTURING OPERATIONS

THE MOTOROLA DS3500 SERIES



Automate your processes to improve margins and better serve your customers with Motorola's DS3500 Series of rugged cordless and corded scanners. Built to thrive in the harsh environment of a manufacturing plant, this versatile family ensures first-time every-time accurate bar code capture for virtually any bar code — 1D, 2D, high density 2D, DPM or IUID codes. The result? Improved productivity and fewer errors on the production line, in quality control, in the warehouse and beyond.

THE CHALLENGE: MANAGING A GLOBAL MARKETPLACE AND STRINGENT REGULATIONS WITHOUT IMPACTING QUALITY, PRODUCTIVITY, EFFICIENCY AND PROFITABILITY

Discrete and process manufacturers in virtually every industry face a common set of challenges. With market globalization, manufacturers now compete with companies all around the world — placing even more pressure on pricing and product quality. In addition, the development of government and industry-imposed regulations add to the everyday administrative burden by requiring 'cradle to grave' product traceability to protect consumer safety. For example, in the U.S.,

the Prescription Drug Marketing Act (PDMA) in the pharmaceutical industry requires a complete pedigree from manufacturing to the store shelf in order to prevent substandard and counterfeit drugs from entering the supply chain. In the food industry, a new U.S. law (HR 2749) increases food traceability requirements to help ensure the safety of imported foods. The Produce Traceability Initiative (PTI) is an industry-driven effort to achieve end-to-end traceability for every case of produce by 2012. The United States Department of Defense (DoD) requires compliance with MIL-STD 130N, Item Unique Identification (IUID) standards that provide unique identifiers to better track and manage critical assets.

To remain competitive in this environment, manufacturers need to cut cost, time and errors out of the end-to-end production cycle, yet still retain product quality and compliance with government and industry regulations. However, manual procedures that require information to be captured first on paper and then entered into the computer actually lengthen cycle times and increase the opportunity for data entry errors. Mistakes can occur anywhere along the way: when information is initially written on a form; transposed incorrectly due to handwriting legibility issues; or keyed into the computer. In addition, the lag time between when information is captured and when it is available in your system provides more opportunity for error. For example, the use of a wrong part on the production line may not be visible for a full day, rippling into the high cost of re-work.

In addition, many of these new regulations involve the storage of a large volume of data, such as lot numbers and expiration dates, and require the use of 2D bar codes. Manufacturers with 1D bar coding solutions in place today may find themselves needing to migrate to 2D bar codes, which often entails upgrading from laser to digital imaging scanners.

THE SOLUTION: HIGH PERFORMANCE SCANNING OF ANY BAR CODE, RIGHT AT THE POINT OF WORK

Motorola's flexible DS3500 Series of rugged handheld 2D imaging scanners helps organizations address these issues by automating practically any paper-based data capture system. Both the DS3508 corded and DS3578 cordless models can read virtually any type of bar code, enabling the integration of whatever symbologies are required — including 1D, 2D and IUID bar codes as well as Direct Part Marks (DPMs). With built-in support for Item Unique Identification (IUID), the DS3500 Series can validate, read, separate and transmit the right information for seamless integration with your application. Our advanced EZ-DPM software allows the easy capture of virtually any type of DPM code on any surface, including dot peen, laser etch, chemical etch, inkjet, mold, cast and thermal spray marks on metal, rubber, plastic or glass. You can even capture the most challenging marks, including very low contrast marks on black plastic, 'noisy' marks on cast surfaces and marks on

corroded steel and cast iron pipes that have been in the field for years. And with FIPS 140-2 validation, government agencies and businesses alike can count on government grade security to protect the most sensitive data.

THE BENEFITS

Now, information is automatically and accurately captured and transmitted instantly into the right backend system, streamlining every inch of the manufacturing plant — from the warehouse to the production line. Cycle times are dramatically reduced. Processes are error-proofed. And end-to-end traceability data is captured cost-effectively at every step in the production process. The result is an improvement in product quality, production velocity, delivery turnaround times, customer satisfaction — and profit margins.

THE APPLICATIONS

From the plant floor to the warehouse and the tool crib, the DS3500 Series enables:

- Real-time quality control, right on the production line
- Real-time track and trace for cost-effective 'cradle to grave' traceability
- Real-time error-proofing of the entire production process
- Real-time inventory management from the moment items are received to the shipping of finished goods
- Real-time parts and tools tracking

REAL-TIME QUALITY CONTROL

Regardless of whether you are manufacturing new products or providing repair services, the DS3500 Series helps control quality by ensuring that products enter and pass all quality checkpoints as well as process consistency. As a product reaches a checkpoint, a quick scan of the bar code can instantly capture the date and quality station that conducted the action. So whether it's a hydraulic pump that requires pressure testing, a cam shaft that needs a dimensional check or a programmable component that just received a software download, you can easily gather indisputable electronic documentation for each action.



With the corded DS3508 tethered to a workstation, incoming shipments can be automatically reconciled and visible in inventory in seconds, without any processing of paperwork.



The cordless DS3578 offers wireless 'go anywhere' freedom, allowing workers to easily scan bar codes anywhere in your warehouse — including outdoors.

In addition, scanning can also provide direction and verify that all steps in a specific process were completed. The delivery of the most accurate information possible to those creating your products ensures the consistency of the process itself as well as increased accountability.

REAL-TIME TRACK AND TRACE

Scanning raw materials and work-in-process (WIP) at every stage of production allows you to quickly and cost-effectively collect the track and trace data that helps protect the lives of consumers and ensure compliance with a myriad of government and industry regulations. Process and discrete manufacturers alike can track the lot and batch numbers of ingredients and parts as they move through the production process and begin their journey through the distribution channel to the end customer — from flour used to make bread to the processor in a computer or the software that controls a vehicle transmission.

This real-time track and trace data results in very rapid, yet cost-effective recalls. Manufacturers can identify the location of all products that contain the tainted ingredients or faulty components — regardless of whether they are WIP on the production line, waiting to be shipped to a distributor, en-route to a distributor or customer, or already delivered to a customer. As a result, it not only takes less effort to execute a recall,

but all affected parties can be personally notified faster. The amount of product that must be recalled is limited to only product that is actually affected, eliminating the time, cost and lost revenue associated with removing uncompromised inventory from the supply chain. And the agility to respond rapidly protects consumer safety and helps minimize the impact on brand equity.

REAL-TIME ERROR PROOFING

Regardless of whether workers are handling individual parts or creating sub-assemblies, a quick scan verifies that the right part is about to be used at every assembly station. You can cost-effectively compile a complete product history detailing every utilized part and the identity of the specific assemblers, for proof positive that products were built properly. Production flexibility increases since multiple products can be reliably produced on one assembly line. And you can enjoy major cost savings by eliminating:

- The high cost of re-work farther down the assembly line
- A dissatisfied customer who receives a defective product
- The negative brand impact caused by the delivery of less-than-perfect products

REAL-TIME INVENTORY MANAGEMENT IN THE WAREHOUSE

The Bluetooth®-enabled DS3578 is ideal in the warehouse, providing cordless freedom and improving safety for workers who are managing inventory — from the receipt of raw goods to the shipping of finished product. The DS3578 models can be wirelessly connected to any standard Bluetooth-enabled device, so you can easily extend the benefits of automated bar code capture throughout the facility to streamline and error-proof inventory management activities. For example, the device can be wirelessly connected to Motorola's vehicle mounted mobile computers on forklifts and other material handling equipment, a PC via a dongle or directly to your back end systems via a Wi-Fi access point.

- **Receiving.** A quick scan instantly and automatically reconciles incoming shipments with orders. Any errors are immediately visible, minimizing cross-docking time. And when inventory is visible in the inventory system the moment it arrives, you can:
 - Protect against a false out of stock situation that could result in one of the most costly events in a manufacturing plant — the unplanned shut down of the production line
 - Enable quality engineers to instantly begin testing raw materials to minimize quarantine times and help keep the production line moving
- **Put-away.** A scan of incoming shipments can display the exact put-away location and the fastest route to that location on the screen of a Motorola mobile computer, such as the VC5090. By scanning the shelf tag at the put-away location, workers are sure to place materials in the right location, each and every time.
- **Replenishment.** When materials are needed on the production line, a scan of the bar code verifies that the forklift operator has selected the right items, preventing mistakes that could result in the costly production of unusable product.
- **Picking.** When fulfilling orders, a scan of the bar code verifies that the item that is about to be selected is correct before it is picked, ensuring order accuracy.

- **Shipping.** Before a worker places a shipment in a truck for delivery, a scan of the boxes and pallets in an order provides a valuable double check that the right items are being shipped to the right person. Mis-ships are avoided, eliminating the high cost of retrieving and re-shipping the order, as well as missed delivery dates and disappointed customers.

IN THE STOREROOM

The DS3500 Series enables manufacturers to easily and cost-effectively track high value parts and tools throughout their lifecycle — as they are received, utilized and returned. With the resulting real-time parts inventory, you'll be able to re-order in a timely fashion, so parts are always on hand when needed. Accountability is improved, as a quick scan of the bar codes on both the employee badge and tool provides a record of who last checked out or returned a tool. The result? Fewer opportunities for loss and theft. And tools can be easily located, reducing buffer stock requirements, along with the costs to purchase and carry inventory.



The DS3500 Series delivers blazing performance on virtually any bar code — including 1D and 2D, DPM and IUID serialized bar codes; damaged and poor quality codes; and even codes buried under shrinkwrap. Designed for scanning in noisy manufacturing environments, the DS3500 Series provides three types of feedback to indicate a successful scan — visual, audio and tactile.

THE DS3500 SERIES: CAPTURE EVERY TYPE OF BAR CODE WITH THIS SINGLE FLEXIBLE SCANNER FAMILY

The DS3500 family includes six models, allowing manufacturers to standardize on a single device type regardless of data capture needs, simplifying purchasing as well as everyday device management. The following chart provides an at-a-glance look at the functionality of the various models.



MODEL	CORDED	CORDLESS	RUGGED	1D/2D	2D HIGH DENSITY CODES	IUID	DPM	IMAGE CAPTURE
DS3508-SR	•		•	•				•
DS3508-HD	•		•	•	•			•
DS3508-DP	•		•	•	•	•	•	•
DS3578-SR		•	•	•				•
DS3578-HD		•	•	•	•			•
DS3578-DP		•	•	•	•	•	•	•

THE TECHNOLOGY: THE MOTOROLA DS3500 SERIES

Motorola's DS3500 Series of rugged handheld scanners are built to thrive in the harsh environment of a manufacturing plant. Workers get the performance they need to be as productive as possible, regardless of the task at hand. And the easy management and low cost application integration combine to deliver a low total cost of ownership (TCO).

SUPERIOR SCANNING PERFORMANCE

Your workers will experience blazing performance on virtually any bar code — including 1D and 2D, DPM and IUID serialized bar codes as well as damaged and poor quality codes. If you use Direct Part Marks, our advanced EZ-DPM software* allows you to easily capture even the most challenging codes — such as low contrast codes on a black surface, codes on a cast surface, or even codes on corroded steel. Exceptional motion tolerance combines with omni-directional scanning, so workers simply point and scan — there is no need to pause between scans or align bar code and scanner. And since the plant floor is notoriously noisy, the DS3500 Series offers visual, audio and tactile feedback to indicate a successful scan. Two large LED's, a traditional 'beep tone' and a vibration in the handle all let workers know their scan was successful. The result? Peak productivity in your highest volume, scan intensive applications.

EXTRAORDINARY RUGGED DESIGN

With Motorola's maximum drop specification of 6.5 ft. (2 m) to concrete, you can count on reliable operation despite the inevitable drops and bumps. And IP65 sealing means there's no cause for alarm if the DS3500 is exposed to dust, grease and jetting water.

PHOTOGRAPHIC INTELLIGENCE

When you receive a damaged shipment, in seconds, workers can use the DS3500 to capture not only the bar code to reconcile the shipment, but also a photo to document the damage. The photo can instantly be transmitted to the right application, where it becomes part of the permanent order record and is easy to locate.

EASY TO MANAGE

Support for Motorola's 123Scan2 Configuration Utility and Remote Scanner Management (RSM) technology dramatically reduces the time, cost and logistical headaches associated with scanner configuration and management. Set up and customize your scanners with our complimentary utility, 123Scan2. This powerful PC-based software tool offers two patent-pending industry firsts:

- The ability to automatically detect and establish 2-way communication with your scanners, without scanning a bar code
- The ability to update firmware without losing scanner settings — or scanner connectivity

Once your scanners are deployed, RSM enables day-to-day remote, network-based device management from a central location.

EASY APPLICATION INTEGRATION

Built-in features allow enterprises and government agencies to manipulate and format the data properly before it is sent to the host application, eliminating the high cost of modifying existing applications. Robust Advanced Data Formatting (ADF) lets you easily add static and dynamic prefixes and suffixes — including dates as well as keystrokes such as 'tab' or 'enter'.

APPLICATION BRIEF

DS3500 SERIES: MANUFACTURING

In addition, Motorola-specific integrated IUID parsing capability enables the DS3500 series to validate an IUID bar code against MIL-STD-130N specified constructs, decode the data and pass concatenated IUID data or user-defined fields of information from the bar code to the host application. There's no need to upgrade legacy software systems, and field upgradable IUID construct tables protect your investment.

A VERY COST-EFFECTIVE SOLUTION

When you choose the rugged DS3500 series, you can count on an investment that will save you money today as well as meet your needs today and well into the future. You can:

- **Spend less money on scanners and cradles.** Since the DS3500 can capture virtually any bar code, you no longer need to purchase different types of scanners to accommodate different symbologies. And if you purchase the DS3578 cordless models, one Bluetooth cradle can support seven scanners (requires FIPS-validated cradle and scanners).

- **Scan what you need today...and tomorrow.** The DS3500 captures virtually any bar code, providing support for DPM as well as emerging 2D bar code standards such as the GS1 initiative in the food and beverage, consumer goods and healthcare industries.
- **Count on maximum uptime.** The rugged DS3500 Series is built to handle the demanding environment inside your manufacturing plant.
- **Upgrade to meet future needs — from new types of bar codes to new host systems.** The ability to easily upgrade the firmware ensures support for new symbologies. And with onboard support for multiple interfaces standard in every model, you can easily connect the DS3500 with the system you have today, as well as the new system you may have tomorrow.

ABOUT MOTOROLA ENTERPRISE MOBILITY SOLUTIONS

When you choose Motorola for your mobility solutions, 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 in all types of industries count on Motorola Solutions to maximize employee effectiveness, improve customer service and increase supply chain efficiency.

Our broad technology portfolio and world-class partnerships enable us to provide true end-to-end solutions that offer the simplicity of a single accountable source — regardless of the number of vendors involved.

Our comprehensive product offering includes: rugged and general purpose bar code scanners; rugged and enterprise class mobile computers with extensive advanced data capture and wireless communications options; business-class smartphones; handheld, mobile and fixed RFID readers; 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; a partner channel delivering best-in-class applications; a suite of software applications 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.

For more information on how the DS3500 Series can benefit your manufacturing operations, please visit us on the Web at www.motorola.com/ds3578 or www.motorola.com/ds3508 or access our global contact directory at www.motorola.com/enterprisemobility/contactus



APPLICATION BRIEF
DS3500 SERIES: MANUFACTURING

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