



INNOVATE TO IMPROVE PRODUCTION UPTIME, PRODUCT QUALITY AND PROFITABILITY

THE ET1 ENTERPRISE TABLET IN MANUFACTURING



In order to mobilize key applications that improve asset uptime in your manufacturing facility, you need a tablet that offers the horsepower to support demanding graphic intensive applications and the durability to survive life on the manufacturing floor — and out in the yard. Introducing the Motorola ET1, the tablet designed to help you reduce time and errors in asset maintenance, operator rounds, HMI, quality inspections and fleet maintenance operations.

THE CHALLENGE: MEETING CUSTOMER DEMANDS FOR PRODUCT QUALITY, DELIVERY TIMES AND PRICE

Success in manufacturing is all about the customer. To attract and retain customers, you need to run the leanest operations possible, while ensuring product quality and availability to create competitive advantage. But you face a world of challenges — from a supply chain that spans the globe to faster product lifecycles to increasing regulatory requirements and more demanding customers who want it all — rapid delivery times, the highest quality and the lowest cost. In order to maintain profitability and customer loyalty in this environment, you need to deliver on these demands or risk losing the order to your competition.

In order to do so, you need to find a way to cut time and cost out of your operations — without sacrificing quality, turnaround times, product margins or customer

service. And with some of your most experienced personnel retiring year after year, you also need a way to bring the new, younger workforce up to speed quickly. The longer it takes to train new employees, the more you risk a reduction in productivity as well as the insertion of time and cost into your processes.

THE SOLUTION: TURN CHALLENGE INTO OPPORTUNITY WITH MOBILITY AND THE ALL NEW—ET1 ENTERPRISE TABLET

While mobility can play a major role in the streamlining of manufacturing operations, many applications inside a manufacturing plant are very graphic and text intensive — much more so than the average enterprise. The Motorola ET1 Enterprise Tablet is designed specifically for these types of applications, where users need to navigate through many text-heavy screens; view graphics, schematics and video; or even collaborate via video with co-workers and other product experts in real time to enable the immediate execution of a task.

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For example, when it comes to asset maintenance, workers no longer need to carry file folders, clipboards and product manuals; capture data on paper and then enter that handwritten information into the computer at a later date; or try to view complex data such as detailed equipment schematics on a mobile computer with a small display. Instead, they can access everything they need to inspect and repair any asset in just seconds, all on the ET1. Since real-time graphics that display machine status can be monitored anywhere in your facility, operators are no longer chained to the control room — they are free to move about as needed to execute critical tasks, while never losing touch with the state of your production line equipment.

Quality inspectors can use real-time information to better control the quality of the inspection process itself — the proper steps are always performed, serial numbers and more are scanned for error-free input, and real-time conditions ensure that any known defective material is immediately located and pulled from the supply chain.

Your workers are empowered to get more done in less time, yet perform their tasks more thoroughly than ever before. The result? Unplanned downtime is dramatically reduced and quality assurance is improved — in turn improving profit margins, profitability, customer service and customer satisfaction.

THE ET1: DESIGNED FOR MANUFACTURING

Unlike other Android tablets on the market today, the ET1 rises above the competition as the only tablet that is flat-out enterprise. The ET1 is loaded with the features you need to successfully deploy tablets in your manufacturing facility:

- **Durability**
Easily handles drops, bumps and spills
- **Integrated, dedicated bar code scanner**
Capture accurate information in a split second
- **Business class processing power and memory**
Supports the most graphic intensive applications — add up to 32GB of memory via the user accessible microSD card slot
- **User replaceable and rechargeable battery**
Remains in operation all shift, every shift; eliminates costly service for devices with aging non-customer removable batteries
- **Data security**
Encrypt data on the device and SD cards, plus lock and wipe missing devices
- **Corning® Gorilla® Glass display**
Greatly improves the durability of one of the most vulnerable aspects of any tablet — the display; flexes without shattering, makes scratches virtually invisible
- **OS-agnostic application development tools**
With Motorola's RhoElements, easily develop a single application version you can run on Motorola mobile computers running Android, Windows Mobile or Windows CE
- **Device management simplicity**
Stage, update and troubleshoot devices from a central location with Motorola's Mobility Services Platform (MSP) — no hands-on required
- **Multi-user log-in**
Built for the way you do business — in shifts. Gives access to applications and data based on user ID and password
- **Expandability**
An expansion module port and Bluetooth connectivity allows you to easily add the peripherals you need — from a printer to a temperature probe.
- **Ease of use**
Ergonomic balanced design plus a unique swivel handstrap makes one-handed use easy
- **Enterprise-class support**
Choose a service plan that protects your investment from the unexpected including normal wear and tear
- **Enterprise-class accessories**
Built for the back room, with economical and space saving multi-slot charging cradles, battery chargers and more
- **Enterprise lifecycle**
The three-year lifecycle is twice that of the typical consumer tablet, providing a real business-class return on investment (ROI)

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THE APPLICATIONS: WHERE WILL THE ET1 PROVIDE THE MOST VALUE IN YOUR MANUFACTURING PLANT?

While the ET1 can be utilized for many manufacturing facility applications, following are some of the key applications that will deliver the greatest value.

ASSET MAINTENANCE

Keeping the many assets required for daily plant operations in good working order is key to protecting facility and production line uptime. In addition, maintenance is even more critical with aging capital equipment. The ET1 has what it takes to streamline every aspect of the asset maintenance function. Its large yet extremely durable screen allows technicians to easily view complex schematics and navigate volumes of information on equipment manufacturer websites to locate known issue resolutions and more. And with push-to-talk (PTT), technicians can reach co-workers to request a needed tool or part.

With the ET1 in the hands of your workers, paper work orders are replaced with electronic work orders that can be delivered and re-prioritized in seconds. When workers arrive at the asset, a quick scan of the bar code on the asset is all that is required to display the entire maintenance history. Needed parts and tools can be ordered in seconds for speedy delivery to the job site. Schematics and how-to repair videos are easily viewed. Video collaboration empowers workers to connect and interact with a product expert for on-the-spot assistance. And with real-time information, you can spot trends that unveil emerging issues — and address them before they threaten asset lifecycle.

Benefits

- Worker productivity is improved, allowing the same number of maintenance engineers to handle more work orders.
- Asset maintenance is completed on time and accurately, preventing costly unplanned downtime.
- Profitability is protected.
- The ability to deliver product on time is protected — along with customer retention and satisfaction.
- Asset lifecycle is protected through timely maintenance — improving the return on investment (ROI) and reducing total cost of ownership (TCO).

- Reduce shrinkage through better tracking of parts and tools.
- Better manage maintenance costs through automated tracking of time and cost per work order.
- Better assess Overall Equipment Effectiveness (OEE) and Return on Asset (ROA) with complete, documented information.
- Collect richer asset condition documentation — take a digital photo with the integrated camera and instantly add it to the maintenance record.

MOBILE HUMAN-MACHINE INTERFACE (HMI)

Programmable Logic Controllers (PLCs) are the heart of the manufacturing automation system. The supervisory control and data acquisition system (SCADA) resides on top of the PLCs, and the Human Machine Interface (HMI) makes it easy to view the volumes of data generated by these systems — as well as control and manage the manufacturing process, throughput and quality control.

Mobilizing the HMI and leveraging the large touchscreen display of the durable ET1 makes it easy for operators to view and interact with the HMI system anywhere in your facility, eliminating the need for dedicated control room personnel. Those same workers are now free to move throughout your facility as needed, yet still monitor and respond to alarms as well as spot and respond to brewing issues — such as a machine that is coming out of tolerance or beginning to overheat. Checklists and dynamic, standardized workflows ensure that workers take the proper steps in every situation. Information is easy to collect and store in one central record, simplifying and reducing the cost of recordkeeping — and ensuring the availability of information. For example, critical inspections and routines such as lock out tag out can be documented with on screen signature capture, photos or video.

Benefits

- Staff productivity is improved — the same staff can handle more tasks.
- Quality is protected through faster reactions to real-time alarms and alerts, reducing production exceptions.
- Production line uptime is improved. Since HMI data is available at the point-of-problem — technicians can begin repair or calibrations prior to major shutdowns.

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The ET1 allows manufacturers to give operators anytime, anywhere mobile access to HMI information. No longer tied to the control room, operators are free to move around the facility as needed to monitor production lines and equipment, while maintaining throughput and quality.

- Employee safety is improved through standardized workflows for unit and line startup and shutdowns.
- ROA/OEE is improved through ability to spot and address issues before they threaten equipment lifecycle — or profitability.

OPERATOR ROUNDS

With an ET1 tablet in the hands of operators, manufacturers can ensure that every task is properly executed on every piece of equipment. When an operator arrives at a piece of equipment — from equipment on the production line to a fire extinguisher or eye wash station — a quick scan verifies that the operator is about to inspect the right piece of equipment and displays the proper checklist. And since bar codes can be captured with an integrated, dedicated bar code scanner instead of a camera, scanning performance is significantly improved — even dirty, scratched and damaged bar codes can be captured accurately on the first scan.

Graphics can help provide the details required to properly direct workers. For example, instead of a simple checkbox that states 'check for leaks', a schematic or photograph could be displayed with checkboxes on the specific areas that could potentially leak. If simple maintenance, such as machine calibration, is required, a checklist ensures the task is performed correctly and improves worker accountability. In addition, instead of capturing equipment gauge data on paper that remains invisible until the operator is able to enter the information into the computer, the data can be captured and transmitted in real time, immediately available for viewing and analysis.

Benefits

- Operator efficiency is improved — the same number of operators can monitor more equipment in a day.
- Machine and production line downtime can be reduced through increased task accuracy and availability of real-time data.
- Real-time machine status prevents the high cost of manufacturing product that does not meet quality standards.
- Employee safety is increased, since safety equipment is always in good working order.

QUALITY INSPECTION

Protecting the quality of the products you manufacture involves the collection and management of an exceptionally large amount of data. The ET1's large display makes accessing and entering that data easier. Quality engineers often need to manage many forms to protect the quality of incoming materials and finished products, as well as ensure compliance with ISO9000 and other government regulations. Instead of capturing this volume of data on paper that must then be entered into a computer, the ET1 allows inspectors to pull up and complete the right electronic form quickly, easily and in real time. In addition, since you can add enterprise-class attachments to the ET1, you can easily customize this mobility solution to better meet your needs. For example, you can connect a temperature sensor to the ET1 to automate the collection of food temperatures, helping to ensure proper handling and protect consumer health.

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Data collection is faster and more accurate, since real-time data collection eliminates the double touch required for paper-based information. For manufacturers managing traceability requirements, in the event of a recall, error-free scanning of the serial numbers on batches of parts or ingredients enables the rapid identification, location and removal of any products that contain the contaminated materials, no matter where they are in the manufacturing process — in the warehouse waiting to be delivered to the production line, on the production line, in the finished goods warehouse awaiting shipment or already on the shelves of a distributor.

Benefits

- Increases productivity — inspections are performed faster, improving speed of materials through the manufacturing process.
- Overall quality is improved through the availability of highly accurate real-time data.
- Increases inventory turns, reducing stocking inventory requirements and the associated storage space
- Helps ensure perishable materials are used on time, preventing unnecessary waste — and the associated impact on profitability.
- Protects your brand, profitability and customer safety by enabling cost-effective and timely identification and quarantine of materials and products that do not meet quality standards.
- Prevents the high cost of manufacturing non-saleable product or costly re-works.
- Ensures quality product is available for timely shipment to customers.
- Improves vendor/supplier accountability by providing better — and faster — information on goods that do not meet quality standards.

FLEET MAINTENANCE

You depend on your fleet of cars and trucks to keep sales people and delivery drivers out in the field. With the ET1, maintenance is performed right — and at the right time. While your vehicles are likely stored outside, the ET1 is engineered to handle all day outdoor use. Unlike a consumer tablet, it can handle winter cold and summer heat. And with a Military Standard drop specification, environmental sealing and Gorilla® Glass display, the ET1 can handle the inevitable drops, even out on the tarmac.

Now, when preventative maintenance is due, an electronic work order can be automatically created and sent directly to the hands of the maintenance engineer most suited for the job. Engineers can scan a bar code or enter an identifying number to ensure that they are about to perform routine maintenance or repairs on the right vehicle. The detailed vehicle maintenance history can also be displayed, along with a checklist of required maintenance tasks. The large screen makes it easy to view any needed information, from detailed manuals and engine schematics to training videos. And with text messaging and video conferencing, engineers can contact internal supervisors or external experts to get the help they need, right at the point of work.

Benefits

- The maintenance function is more efficient and maintenance engineers are more productive, able to service more vehicles per day.
- Preventative maintenance is always performed on time, preventing vehicle down time that could result in the late delivery of customer shipments.
- Vehicle life cycle is extended, improving the ROA.
- Driver safety is protected — issues are addressed before they can cause vehicle failures.

For more information on how the ET1 can shave time, cost and errors out of your manufacturing operations — and why the ET1 is the right tablet for your plant — visit www.motorolasolutions.com/ET1 or access our global contact directory at www.motorolasolutions.com/enterprisemobility/contactus

THE MOTOROLA ET1 ENTERPRISE TABLET — THE ONLY TABLET THAT'S FLAT-OUT ENTERPRISE

WHAT DOES THE ET1 OFFER THAT OTHER ANDROID TABLETS ON THE MARKET TODAY CAN'T DELIVER?

- **Durability.** The ET1 has what it takes to survive in your manufacturing plant. It is built to handle drops and spills that are bound to occur with devices in use all day, every day. In addition, we've fortified one of the most vulnerable elements of any tablet — the display. The Gorilla® Glass touch screen is about 30 percent thicker than the display on the typical consumer tablet and is practically impervious to damage. It can flex without shattering or scratching. And deep chemical strengthening makes most scratches invisible.
- **Manageability.** Available centralized control allows you to provision tablets for initial use, update tablets with the latest versions of operating systems and applications, and even take control of a specific tablet to troubleshoot and resolve end user issues — all from a single remote location with no hands-on required. (Requires Motorola Mobility Services Platform.)
- **Security.** Operating system enhancements allow you to easily protect data with government grade AES 256 encryption — regardless of whether it resides on the device or on a card in the SD media slot. Add the ability to lock and wipe devices that are lost or stolen and you have a device that has what it takes to protect sensitive customer and business information.
- **Built for multiple users.** The ET1 is built for the way your employees work — in shifts. A multi-user log-in feature allows different employees to use any ET1, and only gain access to the applications and data they need for their particular job.
- **Right-sized with the comfort that only ergonomic industrial design can deliver.** The screen is large enough to allow workers to see all the data they need, yet the tablet is compact and well balanced — easy to hold in one hand.
- **The ability to create operating system (OS) agnostic applications.** You likely have other mobile computers running other operating systems. Adding yet another operating system to the mix will mean yet another application version to develop and manage. But not when you choose the ET1. Motorola's RhoElements application development platform allows you to create a single application version that runs on many Motorola mobile computers, regardless of whether they are based on Android, Microsoft Windows Mobile or Microsoft CE.
- **The power to stay in service 24x7.** With a battery that is rechargeable and user swappable, your ET1 tablets can remain in service every minute of your working day — even if you operate around the clock. Since you never need to dock the ET1 and wait for the battery to charge, you need fewer units to serve your workforce.
- **The ability to add new functionality, as you need it.** Want to add a portable printer or bar code scanner to your tablet solution? No problem. You can choose to physically attach an available peripheral via either the integrated expansion port or



Bluetooth™ wireless connection. And since we know the kinds of tasks required in your plant, we know what peripherals you'll need. By adding support in the Android kernel for these business-class peripherals, you'll find it easy to do something you can't do with a typical Android tablet — program peripheral functionality into your applications.

- **The ability to sense and act on its environment to maintain visibility, conserve power and more.** Built-in intelligence makes the ET1 even easier to use. The device can detect changes in available light and adjust display lighting for easy constant viewing. The application on the display automatically rotates when the device is turned. And when a lack of movement is detected, the ET1 can automatically enter a power-saving mode to conserve battery power.
- **A real enterprise-class lifecycle.** The lifecycle of the ET1 is three years — twice the average lifespan of a consumer tablet — and a great way to improve your ROI. In addition, since the ET1 will remain available for purchase for three years from the date the product was first available for purchase, you can eliminate the time consuming and costly complexities associated with deploying and managing different models from year to year. And in the event you purchase ET1 tablets near the end of its availability, no problem. We will continue to support the ET1 for three full years after the product has been discontinued, for a total of six years of support — a time frame that is unheard of for consumer tablets.
- **Some of the industry's best enterprise-class support programs.** Our industry-leading support programs will keep your ET1 up, running and in the hands of your users, while minimizing support costs. Motorola's Service from the Start with Comprehensive Coverage is an all-inclusive service that covers normal wear and tear, internal and external components damaged through accidental breakage for the device and select accessories, as well as operating system issues. We even have a service that alleviates the heavy costs associated with day-to-day management of your devices. Your users get a multi-lingual help desk that serves as a first point of contact, with assistance provided in the user's native language. Our technicians have the tools to take complete control of the ET1 to identify and resolve issues with minimal user involvement. This fully-featured service also includes real-time asset tracking, device usage profiling and proactive device monitoring to identify and correct device issues before users are impacted.

EVERYTHING YOU NEED TO LAUNCH SUCCESSFUL MOBILITY SOLUTIONS

When you choose Motorola for your mobility solution, you get true deployment simplicity — we offer everything you need to mobilize business processes in your manufacturing operation. In addition to the ET1, we offer a complete portfolio of mobile computers, award-winning wireless LAN (WLAN) infrastructure, management software and support services. Our indoor/outdoor WLAN portfolio offers a robust wireless connection, regardless of the size of your facility or physical challenges in your environment. For example, our WLANs accommodate the presence of the metal fixtures common in manufacturing plants that can create RF blind spots, as well as coverage in outdoor areas in yards. Compatibility with Motorola's Mobility Services Platform (MSP) substantially reduces one of the largest costs associated with any mobility solution — day-to-day management. MSP enables centralized and remote staging, provisioning and day-to-day monitoring of all your mobile computers, regardless of whether they are in one building, in multiple locations across the country — or around the world. And when you choose one of Motorola's Service from the Start programs, you'll enjoy affordable coverage that will keep your mobility solution up and running, with protection that begins from the date of purchase.

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