Get vital parts traceability with reliable Direct Part Mark scanning technology

ZEBRA DEVICES MAKE PARTS TRACKING POSSIBLE—THROUGHOUT THE PRODUCT LIFE CYCLE.

Traceability is increasingly critical in all manufacturing processes. Adherence to regulations, maintaining the safety of the public and recall capability drive a critical need for part traceability. Gaining traceability throughout the life of a part requires a unique, permanent identifier and, often, the very nature of the part or product surface warrants use of Direct Part Marking (DPM). The most common marking methods are dot peen (repeated impinging at precise locations with a sharp tool), laser etching, ink marking, chemical etching, inkjet molding or thermal spraying.

Appropriate scenarios for use

DPM offers manufacturers value in several distinct scenarios.

- Parts that will be exposed to environmental conditions deemed too harsh for traditional part labeling[1]
- Parts that are too small for barcode labels[2]
- Hard surfaces such as metals and glass
- Equipment such as automotive components, industrial pumps and medical devices
- Softer materials such as plastics, leather and rubber[3]

Because these scenarios are particularly common in the automotive, aerospace, medical device and military/defense equipment manufacturing industries, their use of DPM is relatively high.

The potential business benefits of tracking parts with DPM

When combined with reliable barcode tracking technology, DPM helps manufacturers achieve parts traceability all the way to the production line—which enables them to meet several business challenges:

- **The quest for higher productivity.** Tracking parts with DPM scanning technology is much more reliable and efficient than depending on paper records.
- **The need to minimize costs.** Identify root cause of a product failure due to a defective part—potentially saving millions in lost revenue, recalls, litigation and public relations costs.

Source:
1)"4 Commonly Asked Questions about Direct Part Marking," The SMS Group, blog post. 2)Ibid. 3)Ibid.

- **The quality imperative.** The need to meet quality standards is growing along with the potential for online reviews and social media to adversely impact manufacturers' reputations in the event of a product recall.
- **Critical regulatory compliance.** DPM can enable tracking of product histories and reduce the odds of fines and penalties from regulatory noncompliance.

Look to Zebra for DPM tracking expertise

Zebra has built a well-deserved reputation among manufacturers as a leader in barcode scanning technology. That scanning expertise—including DPM scanning capability—is available in versatile mobile computer form factors and ultra-rugged scanners. Our portfolio offers unique value in several areas:

- **Accumulated DPM barcode scanning expertise.** Zebra has been developing advanced DPM scanning technology for more than 10 years—and our DPM hardware portfolio is growing.
- **Designs for operational continuity.** Our DPM-capable mobile computers and ultra-rugged scanners feature designs that ensure the devices keep working, even after they're dropped or sustain other impacts in rigorous work environments. Additionally, they're equipped with long battery life to prevent work disruptions during long shifts.
- **Scanning versatility.** Zebra DPM ultra-rugged scanners and mobile computers can also scan 1D and 2D barcodes on other media, such as labels. Our PRZM Intelligent Imaging Technology enables data capture from poorly printed to dirty barcodes, or barcodes covered in shrink wrap. This flexible scanning capability is available on the same device, so there's no need for your workers to switch devices in the middle of a shift.

Unrivaled DPM scanning technology

Major disruptions occur to your operations when your workers have difficulty reading DPM. For example, light reflecting back at the imager when scanning on bright metal surfaces or reading DPM on curved, hard to read surfaces. Zebra has combined advanced decode algorithms, specialized imaging engines and patented light diffusion technology within our DPM-capable mobile computers and ultra-rugged scanners to overcome this. Alternating direct white and indirect red illumination eliminate shadows and bright spots, addressing challenges in reading DPM on shiny metallic, uneven and low contrast surfaces for fast, reliable scanning.

Mobility DNA™ gives Zebra Android mobile computers distinct enterprise capabilities

With Zebra's built-in Mobility DNA software ecosystem of development, productivity management and business tools, DPM-capable mobile computers are transformed into powerful enterprise-ready devices.

Development Tools

- Enterprise Mobility Development Tool Kit
- Enterprise Browser
- Mobility Extensions (Mx)

Productivity Tools

- All-Touch Terminal Emulation
- Enterprise Keyboard
- SimulScan
- Device Diagnostics
- Swipe Assist
- DataWedge

Management Tools

- Enterprise Mobility Management Tool Kit
- PowerPrecision Console
- Enterprise Home Screen
- Device Tracker
- WorryFree WiFi
- StageNow
- LifeGuard for Android™

Business Tools

- Workforce Connect™ powered by Savanna®

DataCapture DNA tools maximize Zebra ultra-rugged scanner performance

Zebra ultra-rugged DPM scanners feature DataCapture DNA, software tools that augment front-line workers' DPM barcode scanning performance.

Development Tools

- (SDK) Software Development Kit
- Scan-to-Connect
- Scanner Control Application

Productivity Tools

- PRZM Intelligent Imaging
- Intelligent Document Capture
- Multi-Code Data Formatting
- Wi-Fi Friendly Mode
- Preferred Symbol

Management Tools

- Remote Management
- PowerPrecision+ Battery
- 123Scan

Visibility Tools

- ScanSpeed Analytics
- Remote Diagnostics

DPM-capable Mobile Computers: the MC9300 and TC8300

We offer mobile computers with DPM scanning capability so you can use one ultra-rugged device to scan DPM barcodes and run Android™ applications.

<table>
<tr><th></th><th>MC9300 handheld mobile computer</th><th>TC8300 touch computer</th></tr>
<tr><td>DPM-capable models</td><td>• MC9300 DPM
• MC9300 DPA (wide angle)</td><td>• TC8300 DPM
• TC8300 DPA (wide angle)</td></tr>
<tr><td rowspan="5">Barcode scanning</td><td colspan="2">• Rapidly capture DPM barcodes of any size, surface, contrast or density—including dot peen, laser etch, ink mark, chemical etch, inkjet mold and thermal spray
• Patented light-diffusion technology reads challenging DPM barcodes
• Provide multiple lighting effects to capture low- and high-contrast marks on reflective, irregular and curved surfaces
• Also capture data from any 1D or 2D barcode on a screen, or on a label in virtually any condition or under shrinkwrap</td></tr>
<tr><td>MC9300 DPM</td><td>TC8300 DPM</td></tr>
<tr><td colspan="2">Optimized to read high-density barcodes and DPM</td></tr>
<tr><td>MC9300 DPA (wide angle)</td><td>TC8300 DPA (wide angle)</td></tr>
<tr><td colspan="2">Optimized to read 1D/2D, wide 1D paper barcodes and DPM</td></tr>
<tr><td colspan="3"></td></tr>
<tr><td>For maximum uptime in the plant</td><td colspan="2">• Fast-charging, hot-swappable battery and power to run for three consecutive shifts
• Corning® Gorilla® Glass on touch panel and scanner exit window
• 802.11ac with 2x2 MU-MIMO, Bluetooth® 5.0 and optional NFC wireless connections</td></tr>
<tr><td>Rugged design</td><td>• 8 ft/2.4 m drops to concrete
• 4,000 3.3 ft/1 m tumbles
• IP65 and IP67 (dustproof and waterproof)</td><td>• 8 ft/2.4 m drops to concrete
• 2,000 3.3 ft/1 m tumbles
• IP65 (dustproof and waterproof)</td></tr>
<tr><td colspan="3"></td></tr>
<tr><td>Productivity-boosting features</td><td colspan="2">• Advanced memory architecture has 10 times the memory lifespan of a typical enterprise device
• Support TE applications and easy migration to modern, touch-based applications</td></tr>
<tr><td>Ergonomic design</td><td>• Gun form factor offers comfort and easy scanning
• Android touch-screen interface and multiple keypad options aid gloved use
• Enable 10% more productivity than competitive devices[4]</td><td>• Revolutionary ergonomic design and scan angle reduce wrist motion by 55% and muscle effort by 15%, boosting productivity by 14%[5]
• Hands-free proximity scanning automatically triggers data capture</td></tr>
</table>

Source:
4) Zebra Technologies Human Factors Testing. 5) Ibid

DPM-capable Ultra-Rugged Scanners: the DS3600-DP/DPA

Featuring designs that keep operating in the harshest plant environments, Zebra ultra-rugged DPM scanners expand manufacturers' barcode scanning capabilities.

	DS3600-DP ultra-rugged scanners	DS3600-DPA ultra-rugged scanners
DPM-capable models	• **DS3608-DP (corded)** • **DS3678-DP (cordless)**	• **DS3608-DPA (wide angle - corded)** • **DS3678-DPA (wide angle - cordless)**
Barcode scanning	• Rapidly capture DPM barcodes of any size, surface, contrast or density—including dot peen, laser etch, ink mark, chemical etch, inkjet mold and thermal spray • Patented light-diffusion technology reads challenging DPM barcodes • Provide multiple lighting effects to capture low- and high-contrast marks on reflective, irregular and curved surfaces • Also capture data from any 1D or 2D barcode on a screen, or on a label in virtually any condition or under shrinkwrap	
	Optimized to read high-density barcodes and DPM	Optimized to read 1D/2D, wide 1D paper barcodes and DPM
For maximum uptime in the plant	• Long-lasting 3,100-mAh battery provides 100,000+ scans per full charge (cordless models) • Detailed battery metrics for superior battery management (cordless models) • Battery charge gauge and Bluetooth® Status LED (cordless models)	
Rugged design	• 8 ft/2.4 m drops to concrete • 5,000 3.3 ft/1 m tumbles • IP65 and IP67 (dustproof and waterproof) • Keep operating despite water jetting and submersion	
Productivity-boosting features	• Three mix-and-match scan feedback modes: vibration, red/green LEDs and loud beep • Zebra® Network Connect for Automation connects devices to industrial Ethernet networks without third-party conversion equipment	

For more information, visit zebra.com/manufacturing

MC9300

TC8300

DS3600-DP

DS3600-DPA

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