



## Zebra PowerPrecision™ Batteries

THE INTELLIGENT BATTERY CHOICE

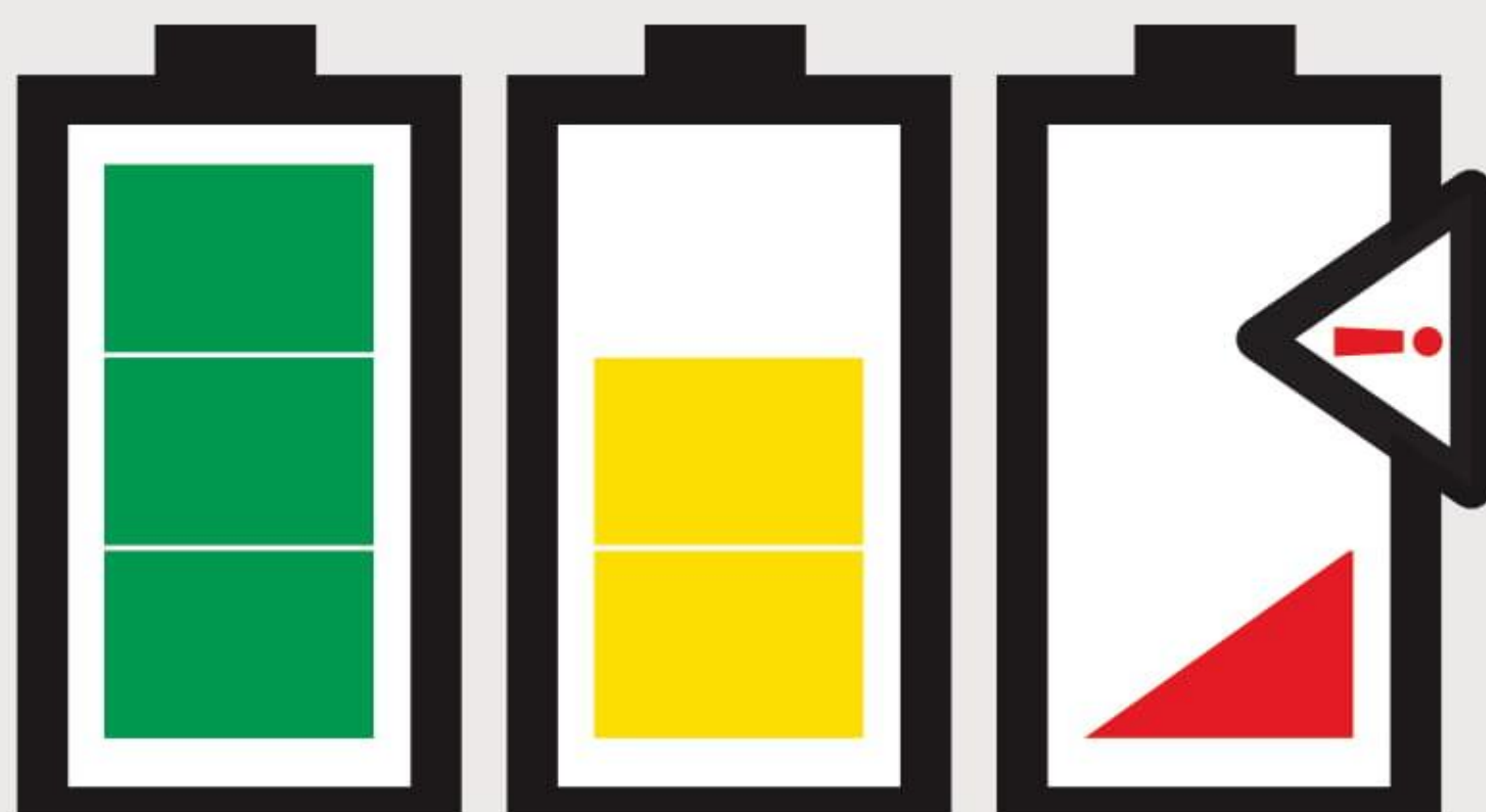
Today, most businesses agree that the performance of their mobile workforce and the mobile devices they carry is critical to their bottom line. But they may not realize that the batteries inside those mobile devices could also significantly impact mobile worker productivity – and their company's profitability.

By providing unprecedented visibility into battery performance and health, Zebra's PowerPrecision batteries allow companies to improve productivity and reduce costs by more intelligently managing the batteries that power their mobile devices.

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**60%** of mobile workers say their batteries “frequently” or “occasionally” do not last the entire shift, according to VDC Research Group.

## Why Batteries Are Critical To Your Business

Enterprises around the globe are increasingly arming their workforces with mobile technology to support their business-critical operations. In fact, the number of mobile workers is expected to increase from 1.32 billion in 2014 – or about 37 percent of the global workforce – to 1.75 billion in 2020, an estimated 42 percent of the global workforce.

Companies in a variety of industries – from retailers and manufacturers to transportation and healthcare providers – are using mobile computers, tablets, printers and scanners to improve customer service, accelerate product delivery, enhance operational efficiencies and more.

While most businesses recognize the importance of buying the right enterprise-class mobile devices, they often don’t recognize the importance of monitoring and managing the batteries they use to power those devices. And that can be a very costly mistake. Because when the battery that powers your mobile device isn’t operating properly, your business-critical operations – and your profitability – suffer.

### THE HIDDEN COST OF POORLY PERFORMING BATTERIES

Poor battery functionality can dramatically impact the efficiency of your mobile workers. Each time a mobile device fails, it can cost your company up to 80 minutes of productivity, according to VDC Research Group. And battery failure is a common cause of mobile device failure, with up to 60 percent of mobile workers reporting that their batteries “frequently” or “occasionally” do not last the entire shift.

Unfortunately, the standard, simplistic “remaining battery life” icon tells you only a small part of what you need to know about your battery’s health. For instance, even if a battery is accepting a full charge, it can drain much faster than anticipated – and unexpectedly leave a mobile worker with a dead mobile device in the middle of a shift.

Batteries that are not operating at peak performance can also dramatically affect the productivity of your operations – causing mobile device performance issues ranging from slow printing and scanning times to devices that simply malfunction.

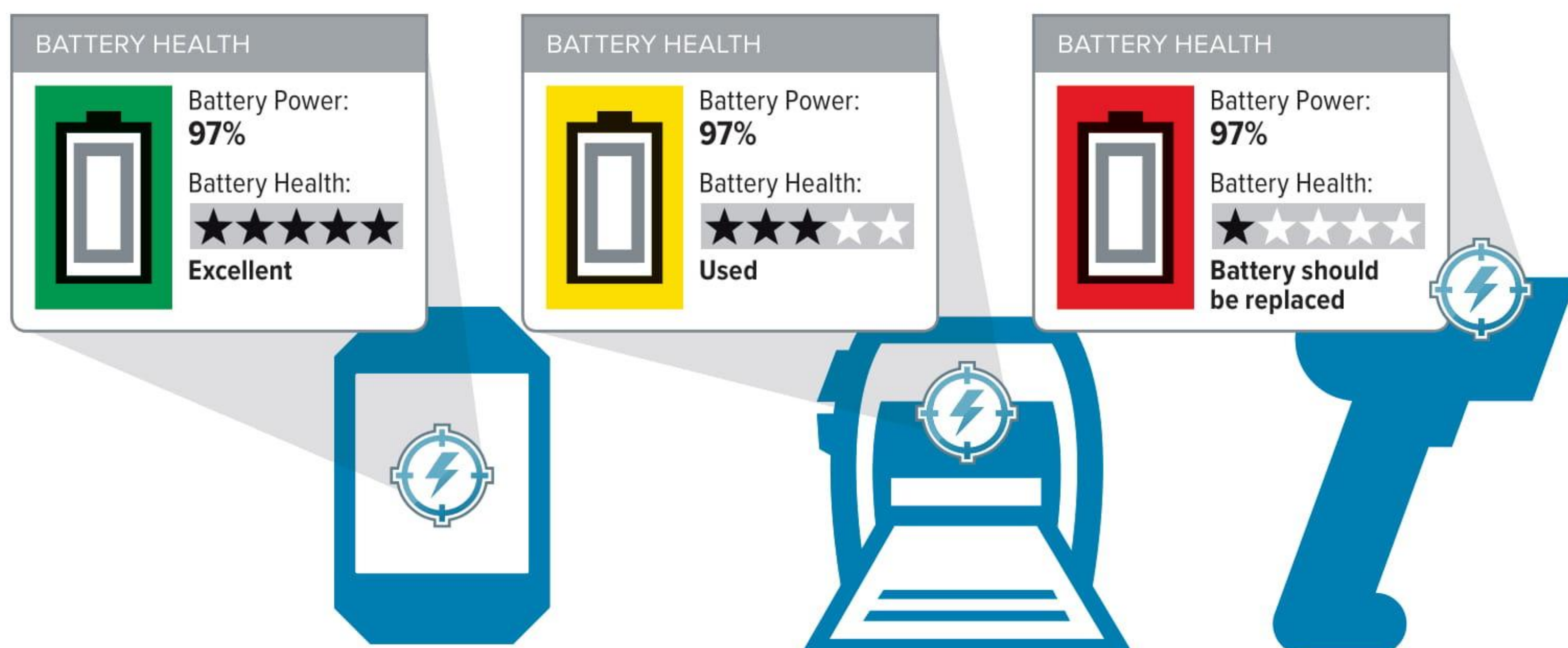


# Zebra PowerPrecision: Intelligence That Pays Off

Zebra's PowerPrecision batteries offer an industry first: An integrated view of battery health that provides state of charge and state of health data for your mobile computing devices, your mobile printers and your mobile scanners – accessible directly from your batteries. This gives your company unprecedented insight into critical battery health data so that you know exactly when the health of your batteries could affect your productivity and should be replaced.

Battery health information is available directly from the PowerPrecision batteries, providing mobile workers and backroom managers with instant access to two crucial battery statistics:

- **STATE OF CHARGE:** Reveals whether or not the battery is fully charged relative to its current state of health.
- **STATE OF HEALTH:** Measures the battery's ability to hold a full charge – and therefore whether it is capable of lasting a full shift.



In other words, the health information available from Zebra's PowerPrecision batteries shows you when your battery is only operating at, for instance, 80 percent capacity (which is an indicator of a reduction in battery runtime).

Battery health data is visible on the battery chargers and via the display screens of Zebra's mobile devices as well as directly on the batteries of some devices. The data can also be integrated with your mobile device management (MDM) software for a complete, one-screen view of mobile device health and performance.

With access to this real-time battery health and forecast data, you can increase productivity for your mobile workers, reduce battery-related costs and more proactively manage your mobile workforce's power needs.



CASE STUDY: POTENTIAL COST OF BATTERY FAILURE



5,000

NUMBER OF DEVICES IN OPERATION

=

750

MID-SHIFT FAILURES DAILY

(BASED ON A 15% BATTERY FAILURE RATE)



LOST PRODUCTIVITY

20 MINUTES

LOST PRODUCTIVITY DUE TO EACH  
MID-SHIFT BATTERY FAILURE

250 HOURS

TOTAL PRODUCTIVITY LOST  
EACH DAY



COST

\$2,250 / DAY

COST PER DAY OF FAILED BATTERIES  
250 HOURS/DAY X \$9.00/HOUR

\$810,000 / YEAR

ANNUAL COST OF FAILED BATTERIES  
(ASSUMING 360 DAYS OF OPERATION)

Information contained in this case study example are hypothetical in nature.

A Look at the Bottom-Line Benefits

When a company owns 5,000 mobile devices and 15 percent of the batteries powering those devices fail in mid-shift, it can cost that company over \$800,000 a year due to lost productivity.

And that price tag quickly becomes much higher as the number of mobile devices increases. For instance, if you own 50,000 mobile devices supporting multiple shifts – which is typical in many large enterprises – unexpected battery failures can easily cost you upward of \$8 million a year.

That’s exactly why one major package delivery company turned to Zebra’s PowerPrecision batteries to improve productivity and reduce downtime for its mobile workers. Thanks to PowerPrecision, the company can now easily see at-a-glance whether a battery has enough charge to last an entire shift. This has enabled the company to reduce the number of extended batteries it purchases as well as reduce its battery inventory.

Using Zebra’s easy-to-use software development kit (SDK), the enterprise has integrated the PowerPrecision battery health information with its existing MDM software. This allows the company to view battery health data alongside other productivity-enhancing information on a single screen – and therefore more easily determine how overall device health is affecting mobile worker productivity.



# Better Productivity, Lower Costs

Zebra’s PowerPrecision batteries provide numerous benefits for backroom managers and mobile workers:



## IMPROVED BATTERY POOL MAINTENANCE

Backroom managers can instantly spot batteries that have exceeded their useful life, enabling prompt removal and replacement so that the battery pool contains only healthy batteries. This not only reduces downtime and increases mobile worker productivity, it also improves backroom productivity and frees managers to spend time on other critical tasks.



## STREAMLINED BATTERY PROCUREMENT

Today, it’s standard practice at some large companies to have their mobile workers carry a back-up battery rather than risk the productivity costs associated with a failed battery. Access to battery health data can save large companies hundreds of thousands of dollars in unnecessary battery equipment costs – because backroom managers can now easily see when batteries will no longer last a full shift and need replacement. This allows companies to reduce the number of replacement batteries in their inventory and in the field – thereby lowering costs.



## BETTER CUSTOMER SERVICE AND PRODUCTIVITY

If field workers are unable to execute their transactions in the field, it can impact service levels and revenue. If a sales person is unable to place an order on the spot, she could lose the order. If a direct store delivery driver can’t create an invoice on his mobile device, he may have to fill out a manual invoice that can add days and even weeks to the order-to-cash cycle. Knowing your batteries will last through a mobile worker’s entire shift protects your profitability, reduces your downtime and increases your peace of mind.





# Seven Smart Battery Questions That Could Boost Your Bottom Line

While most batteries might look the same, their quality and performance can vary widely. Some enterprises still view batteries as just another mobile accessory, but savvy companies now realize that intelligent batteries can deliver bottom-line business benefits. These benefits include lower battery inventory levels and reduced worker downtime, which translates into a lower total cost of ownership (TCO) of their mobile devices.

Zebra's PowerPrecision batteries not only give you unprecedented insight into battery health, they have been designed to provide unmatched performance. Here are seven fundamental questions to ask before you purchase your next mobile battery:

1

## How harsh of an environment must my batteries endure?

Exposure to extreme temperatures can negatively affect battery life. For example, if your mobile devices are carried in and out of a refrigerated truck during daily use, their power and energy performance can degrade more quickly due to continuous exposure to cold temperatures. The same can happen if your mobile devices are regularly left inside a vehicle sitting in the hot sun. That in turn can cause problems with mobile device operation, such as a mobile printer unexpectedly shutting down in the middle of printing a label.

**Zebra's PowerPrecision batteries provide intelligent insight into battery health that can help you avoid operational problems caused by challenging field environments.**

2

## What type of environments has this battery been tested in?

Has the battery been tested in challenging environments such as extreme heat or cold – or very wet or dusty environments? Has the manufacturer tested both new and older batteries in these environments? Testing has actually shown that the batteries of some manufacturers do not work at all in temperatures below 0 degrees Celsius. So if you are using mobile devices inside a refrigerated delivery truck or in the scalding hot Arizona deserts, make sure you ask if the battery is proven to perform as well in these environments as it performs at room temperature.

**Zebra's PowerPrecision batteries have been thoroughly tested to ensure they operate at peak performance even in the harshest operating environments.**

3

## Is this battery compatible with my existing accessories?

A third-party battery may not be compatible with your current mobile device accessories, and this can cause both safety and performance issues. Consider this: Incompatible chargers can cause a battery to overcharge and become unstable. Incompatible accessories can also cause battery life to degrade faster.

**Zebra's chargers and other accessories are designed to specifically operate with your Zebra mobile battery to protect your battery against conditions that might potentially damage it. They can help you enhance device performance by allowing you to evaluate battery status via visible health indicators.**



4

#### Does this battery have the needed industry safety certifications?

Many third-party batteries do not have the required certifications from industry-accredited testing organizations. Ask your manufacturer if your battery meets certifications such as the UL 2054 safety standard or the latest UN 38.3 test requirements for air cargo transportation – and whether you have a certificate from an accredited test lab to show that it has passed. Be warned, however, that even if your battery has the required certifications, these certifications may become invalid if your battery has not been tested with your device. In fact, your mobile device's safety certifications can be invalidated if you use a battery that hasn't been fully tested with your mobile device.

**Zebra's devices and batteries have been designed, tested and third-party certified as an integrated system, which means they are guaranteed to be in compliance with important safety regulations.**

5

#### Does my battery meet the same ruggedness certifications as my mobile device?

Before you buy a battery, be sure to ask whether it meets the same ruggedness specifications that your mobile device meets. For instance, if your device has been “torture tested” – to ensure it can survive a fall onto plywood over concrete, exposure to extreme temperatures, excessive vibration or thick dust – make sure your battery will survive that fall as well.

**Of course, when you buy a Zebra's PowerPrecision battery that's been designed and tested with your mobile device as one system, you can be assured your battery can survive the same “torture” as your mobile device.**

6

#### How easy is it to replace my battery?

Ask your manufacturer how easy or difficult the replacement process might be. Does the battery come with a warranty? What are the steps involved in the replacement process? How quickly can you get the battery you need – and does the manufacturer guarantee battery availability and on-time delivery?

**The reality is that buying a battery from a well-established device manufacturer like Zebra can make the battery replacement process much easier. It can also eliminate any possibility that a faulty battery might negate the warranty on your mobile device.**

7

#### Should I consider a service contract for my battery?

Some large enterprises deem optimal battery health so important that they've turned to Zebra to help them track battery health and automatically replace batteries that are no longer operating at pre-determined performance levels. When they do this, the number of devices that stop working with no trouble found (NTF) are reduced significantly.

With Zebra Support, you can upgrade from Zebra OneCare™ to include enhanced battery support, which can assist you in maximizing uptime and availability for your devices and critical operations.

- **Battery Maintenance:** When a printer arrives at a Zebra depot, the battery is tested to see how much life it has remaining. If the battery fails the test, Zebra will simply install a new battery.
- **Battery Refresh:** Zebra will proactively send a new battery once during a three-year service contract and twice during a five-year contract.







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# The Zebra Difference: Intelligent Batteries That Help You Better Manage Your Business

With Zebra’s PowerPrecision battery solutions, you can be confident that the performance of your mobile batteries won’t negatively impact the performance of your business. Zebra’s PowerPrecision solutions give you unprecedented visibility into the health of your batteries – allowing you to maximize their performance and improve the productivity of your mobile workers.

Zebra’s PowerPrecision batteries track and maintain the metrics required to effectively monitor battery health – such as total cycle usage of the battery, whether the battery is old and should be retired or how long a battery will take to fully charge.

These batteries provide two levels of intelligence: Zebra’s PowerPrecision batteries provide state-of-health and state-of-charge information that let you determine when a battery should be replaced based on current charge cycles. PowerPrecision+ batteries take battery intelligence to a whole new level, using data such as charging behavior, temperature, and current and historical usage to predict a battery’s state of charge, its state of health, its time to charge and its end of life with unprecedented accuracy.

BATTERY TYPE	AVAILABLE HEALTH DATA	END-USER INTERFACE	MANAGEMENT CAPABILITIES	BOTTOM LINE BUSINESS BENEFIT
<div>PowerPrecision Batteries</div> <div></div>	<ul style="list-style-type: none"><li>• Battery charge status</li><li>• Total charge accumulated</li><li>• Basic state of health</li></ul>	<ul style="list-style-type: none"><li>• Standard OS battery indicator indicates state of charge</li><li>• The Mobile Computer's Power Applet provides health and usage data</li><li>• Health data is displayed on LEDs, LCDs and terminals with easy-to-decipher green, yellow and red indicators</li></ul>	<ul style="list-style-type: none"><li>• APIs allow the integration of battery health data into enterprise and device management software</li></ul>	<ul style="list-style-type: none"><li>• Delivers intelligence that helps companies determine when a battery should be replaced, improving productivity and reducing device failure</li></ul>
<div>PowerPrecision+ Batteries</div> <div></div>	<ul style="list-style-type: none"><li>• Highly accurate state of charge measurement</li><li>• Total time required to charge</li><li>• Advanced state of health</li></ul>	<ul style="list-style-type: none"><li>• Battery management application displays state of charge and state of health based on current usage</li><li>• Application also displays custom feedback based on battery status</li><li>• Health data is displayed on LEDs, LCDs, terminals and spare battery chargers with easy-to-decipher green, yellow and red indicators</li></ul>	<ul style="list-style-type: none"><li>• APIs allow the integration of battery health data into enterprise and device management software</li></ul>	<ul style="list-style-type: none"><li>• Self-calibration delivers better battery performance throughout the life of the battery</li><li>• Advanced end-of-life detection automates the battery replacement process, dramatically improving productivity and reducing device failure</li></ul>





CONFIGURABLE FEATURES

Enables/disables the battery health software

Controls when to display the battery health information  
(Always/Each rating change/Specific rating change)

Enables display of the current cycle-count of the battery on the battery health window

Allows the specification of the duration of the battery health popup message

Allows the personalization of the descriptions and messages displayed with each rating

Advanced < BatteryMgmt > RunTime

Current Battery Health: \*\*\*\*\*

☒ Enable Battery Health service

Show popup UI on device-resume:  
Always

☒ Show cycle-count in UI

3 seconds to auto-dismiss UI

Edit descriptions for Ratings

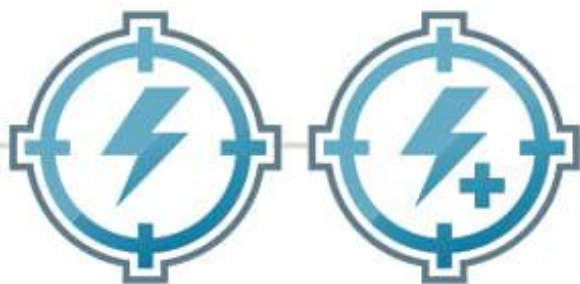
BATTERY MANAGEMENT  
SOFTWARE TOOLS AVAILABLE FOR  
SOME MOBILE COMPUTERS

Zebra’s PowerPrecision Battery Management software tools also provide you with a wealth of accurate information via reports and notifications to help improve workplace productivity and business efficiency.

Zebra’s PowerPrecision Battery Management software, which can be integrated into your current MDM software, gives your IT department unprecedented real-time visibility into mobile device battery health from a single centralized location. Your IT department can even send mobile workers customized notifications to tell them when a battery needs to be changed and/or where to find a replacement.



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RELIABILITY YOU CAN COUNT ON

Zebra’s PowerPrecision battery solutions are now available for Zebra mobile computing devices, mobile printers and mobile scanners. So no matter which Zebra mobile devices your business uses, you have the visibility you need to ensure every battery is operating at optimal capacity – and will continue to operate at peak performance throughout a worker’s entire shift.

For more information on Zebra’s PowerPrecision battery solutions and a full list of supported mobile products, visit [www.zebra.com/powerprecision](http://www.zebra.com/powerprecision)



NA and Corporate Headquarters  
+1 800 423 0442  
[inquiry4@zebra.com](mailto:inquiry4@zebra.com)

Asia-Pacific Headquarters  
+65 6858 0722  
[contact.apac@zebra.com](mailto:contact.apac@zebra.com)

EMEA Headquarters  
[zebra.com/locations](http://zebra.com/locations)  
[mseurope@zebra.com](mailto:mseurope@zebra.com)

Latin America Headquarters  
+1 847 955 2283  
[la.contactme@zebra.com](mailto:la.contactme@zebra.com)