

BATTERY POWER PRACTICES FOR TODAY'S MOBILE COMPUTERS

Get top performance from your Datalogic Mobile computers by following these best practices for handling, charging, care and maintenance of installed battery bases.



Today's mobile computers come with a full range of modern features which demand the best possible battery power to capitalize on. Whether you are using your mobile device for network communications, cell phone calls, internet access, barcode scanning, credit card transactions, GPS navigation, or color imaging, a dead battery will impact your productivity and ultimately affect total cost of ownership.

Datalogic has spent years studying the science of optimum mobile device performance, and we have compiled this documentation to help end users and administrators to employ proven battery management techniques to increase your operational success with our devices.

LITHIUM ION BATTERY CHARGING CHARACTERISTICS

- Li-Ion batteries do not require conditioning & do not have memory effect.
- Li-Ion battery chemistry allows for 500 charge cycles, but cell deterioration will be experienced as the charge cycles increase.
- Even without use, Li-Ion batteries deteriorate with age, and will lose up to one third of fully charged capacity in one year.
- Annual replacement of all battery packs used in commercial service is recommended to maintain optimum device performance.
- Battery packs are either date stamped or serial number encoded to allow tracking of each device's age in service.
- Mobile electronic devices with backup batteries require regular charging time in their cradle to avoid the backup battery from pulling power from the main battery pack.

BATTERY CHARGING GUIDE

- First time device charging requires 12 hours of uninterrupted time in a cradle to fully charge both the main and backup batteries.
- Subsequent regular charging requires 4 to 6 hours for most models to ensure the cells are completely charged.
- Charge batteries at normal ambient room temperatures. For best results charge at temperatures between 4 and 32 degrees Celsius.

CONFIGURATIONS FOR OPTIMUM BATTERY OPERATING TIME

- Decrease the display backlight brightness level to medium or lower.
- Configure the display backlight to auto-dim the display after 15 seconds of user inactivity.
- Decrease the volume and duration of audible beep and telnet bell character transmissions.
- Configure WiFi radios to use a power save polling mode which is appropriate for your local RF infrastructure.
- FastPSP power save polling mode for most WiFi radios will double battery life compared to CAM or constantly awake mode.
- Disable the WiFi radio when running batch mode applications. When not associated to an Access Point, the radio will constantly attempt to connect which consumes power.

RF CONFIGURATIONS ALSO AFFECT BATTERY LIFE

- Background network broadcasts keep radios active and shorten battery life dramatically. Consult with your network administrator for technical options.
- Mixing different brands of Access Points and client radios requires testing to validate the optimum configuration settings. Mixed network infrastructures may require tuning to obtain the best RF power saving results on client devices.



BEST PRACTICE CHECKLIST FOR TOP BATTERY PERFORMANCE

- Ensure first time battery charging is done for at least 12 hours.
- Use only genuine Datalogic brand batteries and charging accessories.
- Regularly charge mobile devices in their powered charging cradle.
- Assign specific batteries to individual mobile devices.
- Assign specific mobile devices to individual users or teams.
- Replace batteries annually to avoid the deterioration of performance due to age and number of charge cycles.
- Immediately swap batteries when any low power warning alarm or on-screen message is received.
- Maintain at least one spare battery pack for every mobile device employed in daily operations.
- Charge battery packs for at least 4 to 6 hours regardless of LED charge status indicators.
- Regularly inspect batteries for damage such as cracked cases or swelling and remove defective units from service.
- Ensure battery contacts are clean and free of any dust, dirt, or debris so power leads contact completely.
- Reduce display backlight brightness and enable the auto-dim feature.
- Reduce speaker or beeper volume and tone length to moderate levels.
- Test and utilize the best power save RF configuration for your network.

HOW TO TROUBLESHOOT BATTERY POWER ISSUES

- Confirm the age of batteries which may not maintain power as long as expected.
- Test the mobile device with another battery pack known to be fully charged.
- Try another charging mechanism such as placing the mobile computer in a powered charging dock.
- Check each device's backlight brightness, auto-dimmer, and volume for moderate settings.
- Work with your I.T. group or local integrator to perform a network traffic trace to understand RF traffic and broadcast packet levels.
- Ensure batteries and mobile devices receive adequate first time and subsequent charging times.

SUMMARY NOTES

There is no single approach to obtaining top battery performance in today's diverse mobile computing environments, but the strategies outlined here are proven best practices which will deliver optimum battery power autonomy.

For further information, contact your preferred Datalogic reseller or integrator, or you can reach us directly via email, phone, or on the web.

Find us on the internet at <http://www.mobile.datalogic.com>

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IMPACT OF BATTERY CARE ON TOTAL COST OF OWNERSHIP

- Maintaining proper battery charging and maintenance practices is critical to minimizing on-going total cost of ownership over equipment life times.
- User satisfaction and productivity are dependant on mobile devices which deliver uninterrupted service during fast paced data collection activities.
- Device down time incurred when power problems result in shipping units out for "repair" are costly and frustrating due to no problem found technical diagnoses.



- Managed preventative maintenance for installed mobile device battery fleets, including optimum charging practices, regular inspections, and annual replacement programs will increase productivity and decrease overall installation operating costs.

