X-C 6XXX Series Computers

Practical Battery Tips

TOP 7 Battery Tips

1 Don't restrict airflow around the computer while charging.
2 Charge the computer daily at room temperature with the display tilted open.
3 To conserve power, FN+OFF when not using the computer.
4 Allow the computer to suspend while on external power (This is selected in the SCU set up utility).
5 Detach peripherals when not in use (PCMCIA cards, floppy drives, CD-ROM drives, etc.).
6 Avoid exposing the computer to extreme hot and cold when possible.
7 Use external power whenever possible.

CHARGING THE BATTERY

- Connect power to the charge adapter (vehicle cradle, automobile adapter or AC power supply)
- Confirm that the computer charge indicator begins to flash

FINISHED CHARGING

- Under normal circumstances, your battery is finished charging when the external power indicator light stops blinking and remains solid

Note To prevent possible damage to the battery, the system may not allow a charge if the battery temperature is above 50°C (122°F), such as in a closed, unattended vehicle during the summer. In this case, your battery may not be fully charged.

- If you charge your battery every night, it is finished charging when Battery Status shows a full gas gauge even though the external power indicator light may still be blinking

Note If your battery is new, or if you have not used it for a week or more, then the gas gauge may be inaccurate because the battery naturally discharges over time. In this case, wait until the external power indicator light stops blinking and remains solid (this could take up to three hours).

DEEP CYCLE DISCHARGING THE BATTERY

If your battery is new or has not been used for several weeks, deep cycle discharge the battery to condition it. Deep cycle discharging your battery up to two times in succession may increase its capacity. You may want to do this over consecutive weekends since the batteries deep cycle process can typically take 24 hrs to 40 hours depending on environment and condition. After this initial conditioning, maintain battery capacity by deep cycling at recommended intervals. The NiMH batteries should only be deep cycle discharged when the battery status program prompts the user to do so. If a learning event occurs

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(battery has had a full discharge) there is no need to deep cycle, and no prompt will be given.

- Disconnect all peripherals and exit from all programs except **Battery Status** and **Battery Maintenance**
- Select **Start Deep Cycle** from the Battery Maintenance application (located in **Mobile Computer Tools** directory)
- **Battery Maintenance** will display a window advising of the time required to complete the deep cycle process, select **OK** to continue
- The deep cycle process will display a **Deep Cycle Complete** message when deep cycle is finished
- Battery Maintenance will then conduct a test of the battery pack
- After the system checks the battery pack, select **Deep Cycle History** from the **View** pull down menu
- Confirm that the battery pack capacity is rated to at least its measured capacity or there is any improvement from the previous deep cycle

Note More than one deep cycle may be required to condition the pack.

- For best results, deep cycle the battery in a location with a moderate temperature at or near 20°C (68°F)

Note A Battery Pack that measure less than 70% of its rated capacity, or has a noticeably degraded performance should be should be removed from service and disposed of properly.

IN WARM CONDITIONS

- When using a battery in warm conditions, battery capacity will drain quicker

Note In general, as the temperature rises, the battery will exhibit (or produce) 20% less capacity at 40°C (104°F) and 50% less capacity at 50°C (122°F).

- To prevent possible damage to the battery, the system will not allow a charge if the battery temperature is above 50°C (122°F), such as in a closed, unattended vehicle during the summer
- The battery won't accept a full charge if charged at higher temperatures because heat slows down the battery's chemical reactions. Also, if the battery becomes too hot while charging, the charge mode automatically switches from Fast Charge to Slow Charge. Slow charge takes much longer to finish charging the battery.

IN COLD CONDITIONS

- In general, as the temperature falls, the battery will exhibit (or produce) 30% less capacity at 4°C (39°F) and 70% less capacity at -11°C (12°F)
- To prevent possible damage to the battery, the system will not allow a charge if the battery temperature is below 5°C (41°F), such as in a closed, unattended vehicle during the winter
- The battery won't accept a full charge if charged at lower temperatures because colder temperatures slow down the battery's chemical reactions

PREVENTING DATA LOSS

- You can lose data if you remove the battery while the computer is operating

Note To avoid unecessary data loss while operating, suspend the unit by pressing FN+OFF before removing the battery.

- You can also lose data if the battery is removed for more than 5 minutes while the computer is suspended

Note Reinstall the battery as quickly as possible to avoid unecessary data loss.The computer is equipped with enough internal backup power to maintain memory contents for about 5 minutes each time you exchange batteries. Be careful not to exceed this 5 minute limit when you replace the battery.

- If you plan to store your computer for less than 30 days, the battery pack must be fully charged prior to storage to sustain the memory
- If you plan to store your computer for more than 30 days, exit Windows to save data to the hard disk, and then press FN+OFF to suspend the computer, and remove the battery pack

Note Always remove the battery before storing the computer for periods longer than 30 days.

CONSERVING POWER

- FN+OFF when you need to leave the system but plan to resume working later
- Turn off the backlight when you do not need it on a monochrome unit
- Lower the brightness setting on a color unit
- Use the AC adapter, vehicle cradle or vehicle adapter whenever possible
- Avoid exposing batteries to extreme hot or cold temperatures for long periods
- Store the battery within the recommended temperature range: 10°C to 30°C (50°F to 86°F)

USING THE EXTERNAL BATTERY CHARGER

- Timed Charging Cycle for NiMH on External Battery Charger
- 3500 mAH Timed Charging Cycle 3 to 3-1/2 hours (Green LED changes from "Blinking" to "On")
- 4500 mAH Timed Charging Cycle 3-1/2 to 4 hours (Green LED changes from "Blinking" to "On")
- It is strongly suggested that both types of battery packs be used until they reach approximate 25% Gas Gauge Readings (or when prompted by low battery voltage warning)

This will ensure that upon completion of the TIMED charging cycle (listed above), the batteries will be charged to approximately 80-100% levels.

CAUTION **DO NOT** leave the battery pack in the charger for more than 4 hours, (even if the Green LED is still blinking) or more than 10 minutes past "Charge Complete" status as indicated by the Green LED changing from "Blinking" to constant "ON"

IF YOU NEED TO RETURN BATTERIES FOR SERVICE

- When shipping batteries, use non-static packing material to reduce the possibility of static discharge that may damage the battery. Placing the battery in a non-static bag is ideal; however, wrapping the battery in paper or newspaper is also acceptable
- Contact your supervisor or your organization's help desk for correct shipping procedures and information

FOR MORE INFORMATION

- Battery Status and Battery Maintenance provide battery-troubleshooting information. From the Help menu for each application, choose **Contents** (or **Help Topics**), and then choose **Troubleshooting**, followed by **Common Solutions to Common Problems**
- Online Help also provides battery-troubleshooting information
- Contact your organization's help desk for additional information

IMPORTANT It is difficult to quantify the amount of decrease in charge acceptance when batteries are operated in hot or cold temperatures. Battery characteristics will change depending on the current drawn, and individual batteries may operate differently.