Sample User Manual for Lithium-ion (aka Li-ion) Laptop Battery

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The author of the document below titled “USER MANUAL FOR LAPTOP BATTERY” is currently unknown.

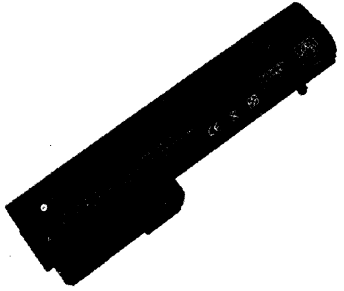
No warranties are implied or expressed here-in whatsoever. Use this document entirely at your own risk. Please read your laptop manufacturer’s instruction for installing, handling, calibrating, charging and operating your battery. Those instructions will be more specific to your application. If there is any conflict between your manufacturer’s instructions and the following information, follow the instructions provided by your laptop manufacturer.

I’ve seen laptop manuals that don’t mention any specific battery replacement procedures. In that case you might look for a BIOS setup routine for “battery calibration”. A colleague of mine says this isn’t common, but may be seen in higher-end laptops.

Additionally, I have seen Internet information that says no battery preparation for Li-ion batteries is required. After further investigation, I think the confusion may lie in the fact that the current Li-ion batteries themselves may not require preparation, however the batteries may need to be “calibrated” to the laptop when new (and periodically). This allows the laptop’s battery charging and protection circuitry to work correctly and efficiently, and its battery meters (be they physical or software) to display accurate information for you.

TIP : If this PDF opens in your web browser and your browser doesn’t display a zoom-in/out function, you can zoom in to150% or 200% by holding down the Ctrl key on your keyboard and rolling the wheel on your mouse up or back a notch or two. This way you’ll be able to read the information below without a magnifying glass. This will also work in most standalone PDF readers, on web pages, and various other programs (e.g. Word and Excel).

USER MANUAL FOR LAPTOP BATTERY



ENGLISH

User manual For Laptop Battery

Respected users:

Thank you very much for trusting and using our laptop battery. Before using the battery, read this manual carefully. This user instruction manual indicates how to use and maintain the battery correctly. Batteries are consumables, and have a limited service life. However, we can prolong the life of the laptop battery considerably through correct operation, proper charging/discharging and correct storage.

✓ Calibrate your laptop battery to optimize its performance

Inside the laptop battery is microprocessor software, which calculates the battery volume during the charging/discharging process. Batteries must be calibrated from time to time to ensure correctness of the time and the percentage displayed on the screen. You must implement a complete cycle of charging and discharging the battery at the beginning of using the computer, and repeat this cycle every two or three months. The charging and discharging procedure is as follows:

1. Set the option of Power: Click the **Start menu** and select **Control Panel -> Change battery settings**. In all subsequent operations, select **Energy Saver**.
2. Disconnect the power adapter and use the battery until the computer is powered off due to exhaustion of the battery.
3. Connect the power adapter until the battery is charged to 100%. Before initial use of the computer (or resuming use of the computer after long-term storage), the battery must be charged to full and discharged for 3-4 times to optimize the performance. The charging process takes eight hours on average.
4. Note: When your battery is calibrated and reaches the best performance, set the Power Supply Options on your computer to the default value to ensure that the computer can send correct alerts to you, for example, low battery alert, and alert before the computer enters the hibernation status.

You must discharge the battery to let the computer power off, and then charge the battery to 100% to calibrate it. Then you can connect or disconnect the power supply anytime regardless of the status of the battery volume. Moreover, you can perform a deep charging and discharging cycle under control of the protection circuit in a time segment to calibrate the electricity statistics of the battery. However, this does not increase the actual capacity of the battery.

Tips: When the battery becomes "empty", the computer enters the hibernation mode forcibly. The battery reserves a certain electricity volume to ensure that the computer can hibernate for a time segment. When the battery is really exhausted, the computer is powered off forcibly. At this time, any open documents will be lost.

✓ Storage of battery

If the battery is stored for a long time in the closed-circuit mode, the battery might be damaged. If the battery needs to remain idle in a month or a longer time, remove the battery out of the computer, charge it to 60%-80% and store it in a dry, cool and clean place. If the battery remains idle for a long time, the electricity of the battery is ultimately lost and the battery may be damaged. Therefore, after the battery is stored for a time period, it is necessary to perform an effective charging and discharging cycle for the battery. By performing a complete effective charging and discharging cycle for the battery every month, you can ensure a proper storage status and a reasonable service life of the battery.

✓ Safety of battery

1. Do not short-circuit the battery. Short circuit leads to serious damage to the battery.
2. Do not let the battery fall or knock .or misuse the battery for fear of exposing the corrosive substance inside the electric core.
3. Do not expose the battery near a heat source, a moist place or a rainy place.
4. Do not burn batteries. Keep the battery far away from the fire source and other extreme heat sources. Exposing the battery in an extreme heat source may lead to explosion.
5. Do not attempt to dissolve, repair or alter the battery set because this may lead to overheat and combustion of the battery. Leak of tantalum tacobaltate or other electrolyte may cause danger. Do not pierce the battery with a pointy object.

Frequent questions Laptop Battery

1. Question: How long can a new battery drive the computer?

Answer: It is difficult to determine the operation time of the laptop battery. The actual operation time depends on how much electricity is required by the device. The screen size, hard disk and other accessories may consume extra electricity and shorten the operation time. The total operation time of the battery also depends on the design of the device. Generally, a battery of a standard volume is designed to drive the computer for more than two hours.

2. Question: Why is the electricity reduced before the battery is put into use?

Answer: Due to influence of ambient humidity and non-insulated environment, the battery is consumed naturally. Depending on the newness and quality of the battery, the electricity of the battery is reduced by about 1% in 3-4 days. Therefore, a moderate reduction of electricity is normal.

3. Question: Do I have to remove the battery when I use the AC supply?

Answer: Generally, the charging of a laptop battery begins only when the electricity volume is lower than 95%. Due to existence of natural consumption, the battery consumption is basically the same no matter whether you remove the battery or not while the computer is working. However, we recommend you not to remove the battery while operating the computer because this prevents the data loss in case of abrupt interruption of the AC supply. Remember to perform a complete charging and discharging cycle for the battery every month to prevent the battery from losing activity.

4. Question: Is the battery life reduced if the battery is charged before being exhausted?

Answer: The calculation of the battery life is based on complete cycles of charging and discharging. The life of a lithium battery is generally 300-400 cycles. You do not need to worry whether the battery is charged for a cycle once the AC supply is connected. Only a complete cycle of charging or discharging counts as a cycle when calculate the battery life.

5. The electricity volume is still displayed as 0% after my battery has been charged for 20 hours; and the computer is powered off immediately after the AC supply is interrupted. Why?

Answer: First, check whether the battery contacts the laptop properly. Improper contact makes it impossible to charge the battery even if the communication data of the battery is readable. In this case, try to unplug and plug the battery for more times. If you hear a clatter after inserting the battery into the laptop, it is generally regarded as proper contact. Try inserting for more times, and you will know whether the laptop contacts the battery properly. Pay attention to this especially when you use an IBM laptop. If you are sure that the battery contacts the laptop properly but the battery still does not work normally, the battery may be substandard. This problem is caused by two factors: (1) The line board of the battery is damaged or short-circuited; (2) the battery may be incompatible with your laptop, which is a technical problem and needs to be solved by us. Please contact distributor to check the status of the battery.

6. Question: The battery does not work and the laptop powers off immediately after I disconnect the AC supply when the battery is charged to a certain percentage or even 100%. Why?

Answer: When this problem occurs, check whether the ambient temperature is too high. If the laptop is used in a high-temperature environment for a long period, the battery will be disconnected for purpose of protection. In this case, in order to prevent accidents, shut down the laptop first, take out the battery, and then reload the battery. Another possibility is that your computer is faulty in the process of charging. In this case, check the computer because the charging circuit of the computer tends to fail in case of charging. In this case, use the original battery instead and check whether the computer works normally. If the problem persists, contact our distributor to replace the battery.

7. Question: My laptop does not identify the battery and displays "the battery is not compatible with this computer, please insert battery", with the indicator blinking. Why?

Answer: This information tells that the battery is not compatible. In this case, contact your distributor to replace the battery. Feed back the information to our suppliers so that we can improve and enhance the battery compatibleness in time.

8. Question: When I put the battery into the computer, the computer shuts down automatically; when I take the battery out, the computer works normally. Why?

Answer: That indicates the battery is faulty. That occurs rarely and is possibly caused by technical faults arising from short-circuit protection of the battery interface. In this case, contact your distributor to replace the battery.

9. Question: My battery makes the computer shut down directly without alerting or changing into the hibernation status. This occurs for several times in a few minutes after the battery is charged to full. Why?

Answer: Operate according to "Calibrate your laptop battery to optimize its performance" described herein above. If the problem persists, consult the local distributor.

10. Question: The battery volume is displayed as 30% after the battery is initially charged for several hours. Why? How can I charge the battery to 100%?

Answer: Operate according to "Calibrate your laptop battery to optimize its performance" described above. If the problem persists, consult the local distributor.

11. Question: My battery works for three hours initially, but then it cannot be charged further. Is the battery faulty?

Answer: Operate according to "Calibrate your laptop battery to optimize its performance" described above. If the problem persists, consult the local distributor.

12. Question: I wonder how many hours my new battery can run on the computer.

Answer: Generally, the service duration of a battery is directly related to the consumption power of the computer. For example, if the computer has a 10.4" screen and a low-consumption CPU, the computer consumes a power of about 10WH-12WH in one hour of normal service. The output power provided by a working battery is: Nominal voltage multiplied with the nominal capacity is the total output power available from the battery. For example, if the battery is 11.1 V and 4400 mAh nominally, the available power output is 48.8 WH, and the battery can run for about four hours on this computer with a 10.4" screen. The power consumed is also related to the running status of the computer. If the computer is used for playing games or DVD, the computer consumes more power in the full-speed running status, and the service duration of the battery is shortened accordingly.

13. Question: How do I calculate the power consumed by my computer in an hour?

Answer: Such data is available from the relevant professional website. Generally, the power consumed by the computer during the running is related to the size of the computer screen, CPU, memory, hard disk and the power saving circuit design of the computer main board. Generally the computer screen size is 13.3", 14.1" and 15.4", and the power consumed by a standby computer is about 15WH, 18WH and 20WH respectively. Some P4 computers are defective in the power consumption design and generally consume more power. The computers prevalent in the market now are excellent in the power consumption design.

14 Question: The rated voltage of my original battery is 14.4 V or 14.8 V but the rated voltage of your battery of the same model is 10.8 V or 11.1 V. Is it really applicable to the computer of the same model?

Answer: The safe DC voltage range of a laptop is 5.5 V – 24 V, which is evidenced by the power adapter equipped for the computer. The equipped battery or the original battery falls within a safe voltage range required for rated work. As we know, the laptop batteries are lithium batteries which are characterized by: The voltage increases when the battery is charged to full, and decreases when the battery is discharged. For example, the actual effective working voltage range available from a nominal 11.1 V – mAH battery is 9 V - 12.6 V. The voltage is about 12.6 V when the battery is charged to full and is about 9 V – 10 V when the battery is discharged. However, 9 V - 12.6 V is the effective working voltage available from the battery to the computer. With respect to the principles of DC supply design of the computer, the original manufacturer of any computer designs the supply line of the computer main board in that way. Therefore, the batteries are interoperable and safe no matter whether the rated voltage of the original battery is 10.8 V, 11.1 V, 14.4 V or 14.8 V.

If you have any other question about us, please feel free to tell us and we will always ready to serve you.