

How to Adjust Windows Power Management

to Maintain More Frequent Weather Station Communication

All recent versions of Windows (Windows 7, Vista and XP) restrict access to the computer when low usage is detected to preserve the hardware components and be more energy efficient.

Windows calls this **Power Management**.



Warning: Smaller units such as consumer quality notebooks, netbooks, tablets etc. are not appropriate for power management reductions:

- Units with very limited battery life may not be appropriate for weather stations.
 - The “always on” condition of reduced power management ages your computer hardware faster and can expose it to more risk of damage from electric events.
 - La Crosse Technology is not responsible for any damage or consequences to your PC.
 - We provide this summary as a convenience.
 - **You** are responsible to know if you have the skills to proceed and **you** are responsible for the outcome.
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Note: We also believe power management issues may be involved when users experience intermittent responses from usb devices (in particular). Specific examples may include, but are not limited, to the usb stick synchronizations for 2800 Series and Weather Direct.

Candidate Products: WS-2300 Series (on a USB adapter cable), WS-2800 Series and Weather Direct displays on the USB Stick can benefit from power control options. Power management specific to serial port control is limited (e.g. WS-3600 Series).

Suggested Alternative: Dedicate an older desktop PC to this function.

Review of Safety Equipment: Please consult a qualified PC technician if you need assistance with these preventive precautions.

- All PC equipment needs, at minimum, a good quality surge suppressor.
- Limit unattended update processes on battery-powered units to use when the a/c adapter is connected.
- USB ports that are hard to reach may benefit from bringing the USB connection device to the desktop. Weather station communication needs to be root-hub accessible, though, so use only a **powered** USB hub or a **single-port** good-quality USB **extension** cable. (**Note:** Unpowered multi-port USB hubs tend to be less reliable for a weather station’s higher data communication frequency.)

- Thus far, all of our USB connections are Standard-A type.
- USB also has length limits on USB extension reliability. The USB 2.0 specifications limit recommended total extension length to 16 feet (from the computer port).
- USB ports must be “matched” as to communication speed type. Since USB speeds are backwards-compatible, buying USB 2.0 components is recommended. (**Note:** We have seen compatibility issues with some of the recent USB 3.0/2.0 ports. We are not responsible if your hardware will not support backwards-compatibility to USB 1.1.)

Power Management in General

For most users, the implementation of Power Management on your PC has a purpose. Reduced power consumption is green, saves you money, and prolongs your equipment.

Weather Station data transfer needs access to all system resources: ports, memory and disk to write data. If you do not need 24/7 access to weather data, then let the display collect data “off-hours” and select the “Balanced” profile. If you are truly on a limited battery or internet data usage limit, then select the “Power Saver” types of profiles. These power savings modes will require you to resynchronize data and then allow time for the display write to the PC the “back-log” of data that was collected when the PC was off or in power management mode.

If your purpose is live display only when you are on the computer, plus perhaps later analysis of stored data, this can be your best and most cost-effective approach.

Reducing your Power Management Settings

More serious weather watchers may be involved in uploads of current data to a remote internet site. Specifically, these users need uninterrupted access to changes in either **currdat.lst** or **history.dat**. This can be achieved with “High Performance” power management – **but it will cost more in energy use and perhaps, result in earlier degradation of computer components.** Our preferred scenario is limitation to a desktop PC or if you upgrade, consider leaving the older PC dedicated to data capture.

There are situations where erratic responses in usb adapter cables or usb stick synchronizations may be alleviated with increasing the power available to components.

Additionally, hardware varies tremendously and vendors do enforce power management at the system board level. If this is so, you may not be able to over-ride the controls.

Note: Users with access to IT system administrators or other qualified technicians are advised to review this information with them. So long as the usb ports, serial ports, RAM, processor, and hard disk remain accessible, they will provide your best advice.

In essence, these guidelines (for the most part) disable power management on your system.

Windows 7 (SP1): Go to **Start|Control Panel|System and Security|Power Options**. In the “Preferred Plans” section, select **High Performance**. *Notice the warning that this plan will increase performance at the price of energy savings.* Next select “Change Plan Settings”. Verify and/or adjust the following:

1. The value for **Put the computer to sleep** change to “Never”.
2. Under **Change advanced power settings**,
 - **Hard Disk|Turn off hard disk after** change to “Never”
 - **Sleep|Sleep after** change to “Never”
 - **Sleep|Allow hybrid sleep** change to “Off”
 - **Sleep|Hibernate after** change to “Never”.
 - **Sleep|Allow wake timers** change to “Enable”
 - **USB Settings|USB Selective Suspend** change to “Disabled”.
 - **PCI Express|Link Power Management** change to “Off”
 - **Processor power management|Minimum processor state** change to 50%
 - **Processor power management|Maximum processor state** change to 100%
3. Select “Apply” (if edited entry) and “OK” to close. (You can then close the Power Options window.)

Windows Vista (SP2): Go to **Start|Control Panel|System and Maintenance|Power Options**. In the “Preferred Plans” section, select **High Performance**. *Notice the warning that this plan will increase performance at the price of energy savings.* Next select “Change Plan Settings”. Verify and/or adjust the following:

1. The value for **Put the computer to sleep** change to “Never”.
2. Under **Change advanced power settings**,
 - **Hard Disk|Turn off hard disk after** change to “Never”
 - **Sleep|Sleep after** change to “Never”
 - **Sleep|Allow hybrid sleep** change to “Off”
 - **Sleep|Hibernate after** change to “Never”.
 - **USB Settings|USB Selective Suspend** change to “Disabled”.
 - **PCI Express|Link Power Management** change to “Off”
 - **Processor power management|Minimum processor state** change to 50%
 - **Processor power management|Maximum processor state** change to 100%
3. Select “Apply” (if edited entry) and “OK” to close. (You can then close the Power Options window.)

Windows XP (SP3): Go to **Start|Control Panel|Power Options**. This opens the “Power Options Properties” window. In the “Power Schemes” tab, select the **Always On** choice in the drop down. Verify that the following settings read “Never”:

- Turn off hard disks,
- System standby,
- System hibernates.

Select “Apply” and click “OK” to close the window. **Note:** If desired, you can name this Power scheme in the top box, using “Save As” to preserve it with a name you will remember.

Serial Ports & Adapter Cables

The computer industry is beginning to discontinue support for serial port communication (e.g. WS-3600 series). Therefore, Windows does not provide power management changes to this component.

Notices on discontinuation of USB-to-serial-port adapters also are appearing (e.g. WS-2300 series).

Users on La Crosse Technology products with either type of serial-port communication may wish to consider the WS-2800 series USB connection product

http://www.lacrossetechnology.com/ws_pro.php