Controller Disconnects During Long Tests - Check Windows Power Management

Symptoms

- The Spider connection drops during a long test, often overnight or after the PC has been left alone for a while.
- EDM shows the front-end as disconnected, and the test stops or aborts.
- The connection comes back after you reconnect the cable, restart EDM, or wake the PC.
- It happens most often when the Spider is connected through a USB-to-Ethernet adapter, a USB-C dongle, or a docking station.

Cause

A likely cause is Windows power management. Windows saves power by turning off devices it thinks are idle. A USB-to-Ethernet adapter can be suspended, or lose power when the PC goes to sleep. Some adapter power-saving features can also drop the link. Energy-Efficient Ethernet normally keeps the link up, but with some adapters and drivers it can cause disconnects. When the link is lost, EDM cannot reach the controller.

These are Windows and adapter driver settings. You can usually fix the problem yourself with one of the solutions below. Do not make these changes while a test is running.

If you have not set up the network connection yet, see Connecting the Spider System to the PC first.

Solution: Change the settings with a PowerShell script

This is the fastest fix. The script makes the same changes as the manual solutions below, on the adapter that connects to the Spider:

- Turns off Energy-Efficient Ethernet, Green Ethernet, and the other standard power-saving properties.
- Clears **Allow the computer to turn off this device to save power** for the adapter, and for the USB hubs it is connected through.
- When the PC is plugged in: turns off USB selective suspend, sets sleep and hibernate to **Never**, and sets closing the lid to **Do nothing**.

Close EDM and do not run a test while you run the script.

1. Find the name of the adapter that connects to the Spider (see the first part of the next solution). Use the name in **Network Connections**, for example **Ethernet 2**, not the device name.
2. Click **Start** and type **PowerShell**. Right-click **Windows PowerShell**, click **Run as**

administrator, and click **Yes**.
3. Type this line, with your adapter name between the quotes, and press **Enter**: `$name = 'Ethernet 2'`
4. Copy the block below, paste it into the PowerShell window, and press **Enter**.
5. If PowerShell shows red error text, change that setting with the manual steps below.
6. Restart the PC.

```
Get-NetAdapterAdvancedProperty -Name $name | Where-Object RegistryKeyword -
match
'^\*?(EEE|AdvancedEEE|EnableGreenEthernet|GreenEthernet|SelectiveSuspend|Pow
erSavingMode|SipsEnabled|ULPMode)$' | Set-NetAdapterAdvancedProperty -
RegistryValue 0 -NoRestart
$ids = @(); $id = (Get-NetAdapter -Name $name).PnPDeviceID
while ($id -and ($ids.Count -eq 0 -or $id -like 'USB\*')) { $ids += $id; $id
= (Get-PnpDeviceProperty -InstanceId $id -KeyName
DEVPKEY_Device_Parent).Data }
Get-CimInstance -Namespace root\wmi -ClassName MSPower_DeviceEnable | Where-
Object { ($_.InstanceName -replace '_0$') -in $ids } | Set-CimInstance -
Property @{ Enable = $false }
powercfg /setacvalueindex SCHEME_CURRENT 2a737441-1930-4402-8d77-
b2bebba308a3 48e6b7a6-50f5-4782-a5d4-53bb8f07e226 0
powercfg /setacvalueindex SCHEME_CURRENT SUB_SLEEP STANDBYIDLE 0
powercfg /setacvalueindex SCHEME_CURRENT SUB_SLEEP HIBERNATEIDLE 0
powercfg /setacvalueindex SCHEME_CURRENT SUB_BUTTONS LIDACTION 0
powercfg /setactive SCHEME_CURRENT
```

If your company does not allow PowerShell scripts, or you want to change the settings yourself, use the manual solutions below. You can also use them to undo any change the script made.

Solution: Turn off power saving in the adapter settings

First find the adapter that connects to the Spider:

1. Press **Windows + R**, type **ncpa.cpl**, and press **Enter**.
2. Right-click an Ethernet adapter and click **Status**.
3. Click **Details** and look at **IPv4 Address**. The adapter that connects to the Spider has an address in the Spider subnet (for example **172.0.0.x** or **169.254.x.x**).
4. If it is not the right adapter, close the windows and check the next Ethernet adapter.
5. Write down the device name. It is shown under the adapter name in **Network Connections**. USB adapters usually have “USB” in the device name, for example **Realtek USB GbE Family Controller** or **ASIX AX88179 USB 3.0 to Gigabit Ethernet Adapter**.

Then change its power-saving options:

1. Right-click **Start** and click **Device Manager**.
2. Expand **Network adapters**.
3. Right-click the adapter and click **Properties**.
4. Click the **Advanced** tab.
5. For each property in the table below that is in the list, select it and set **Value** to **Disabled** (or **Off**).

6. Click **OK**.

Property (names vary by driver)	Set to
Energy-Efficient Ethernet / **EEE**	Disabled
Advanced EEE	Disabled
Green Ethernet	Disabled
Idle Power Saving	Disabled
Selective Suspend	Disabled
Power Saving Mode	Disabled
System Idle Power Saver	Disabled
Ultra Low Power Mode	Disabled

Not every adapter has all of these properties. Change the ones that are there and leave the others.

The adapter may disconnect for a few seconds when you click **OK**. This is normal.

Solution: Stop Windows from turning off the adapter

1. In **Device Manager**, right-click the adapter and click **Properties**.
2. Click the **Power Management** tab.
3. Clear the **Allow the computer to turn off this device to save power** check box.
4. Click **OK**.

Some PCs do not show the **Power Management** tab for some adapters. If the tab is not there, try the next solution.

If the adapter is connected by USB (for example a USB dongle, or a USB-C dock or hub), also do this for the USB devices between the adapter and the PC:

1. In **Device Manager**, click **View** > **Devices by connection**.
2. Expand the items until you find the adapter.
3. Look at the items above the adapter in the tree, for example **Generic USB Hub**, **USB Root Hub**, and **USB eXtensible Host Controller**.
4. For each of these items that has a **Power Management** tab, open **Properties** and clear the same check box.
5. Click **View** > **Devices by type** to go back to the normal view.

You do not need to change USB hubs that the adapter is not connected to.

Solution: Turn off USB selective suspend

Do this if the adapter is connected by USB.

1. Press **Windows + R**, type **powercfg.cpl**, and press **Enter**.
2. Next to the selected power plan, click **Change plan settings**.
3. Click **Change advanced power settings**.
4. Expand **USB settings** > **USB selective suspend setting**.
5. Set **Plugged in** to **Disabled**.

6. Click **OK**.

If **USB settings** is not in the list, use the PowerShell script above. It changes this setting directly.

Solution: Stop the PC from sleeping

1. Click **Start** > **Settings** > **System** > **Power & battery** (on a desktop PC: **Power**).
2. Expand **Screen, sleep, & hibernate timeouts**.
3. Under **Plugged in**, set the sleep setting (on a desktop PC: **Make my device sleep after**) to **Never**.
4. If there is a hibernate setting, set it for **Plugged in** to **Never**.

If there is no hibernate setting in **Settings**, check it in Control Panel:

1. Press **Windows + R**, type **powercfg.cpl**, and press **Enter**.
2. Next to the selected power plan, click **Change plan settings**.
3. Click **Change advanced power settings**.
4. Expand **Sleep** > **Hibernate after**.
5. Set **Plugged in** to **Never** (or **0**).
6. Click **OK**.

The screen can still turn off. Only sleep and hibernate must be **Never**.

On a laptop that runs with the lid closed, also set the lid action:

1. Press **Windows + R**, type **powercfg.cpl**, and press **Enter**.
2. Click **Choose what closing the lid does**.
3. Set **When I close the lid** > **Plugged in** to **Do nothing**.
4. Click **Save changes**.

Keep a laptop plugged in during long tests. These settings apply only when it is plugged in.

If a setting is missing, cannot be changed, or changes back by itself, it may be set by your company IT policy. Contact your IT department.

Check that the fix worked

1. Restart the PC.
2. Run a test under the same conditions as the test that failed: the same adapter, dock, and USB port, the same test length, and the same lid position.
3. Do not use the PC for other work during this test.
4. Confirm that the test finished without a disconnect.

One test without a disconnect is a good sign, but it does not prove that the problem is fixed. If the disconnects did not happen every time before, repeat the test a few times.

If you want to check the settings, run the diagnostic report below and open it. Check that:

- The Spider adapter shows **AllowTurnOff** as **False**. **n/a** means that the report could not check

this setting. It does not mean that the setting is correct.
- The power-saving properties of the Spider adapter show **Disabled** or **Off**.
- In the power plan section, the **AC** (plugged in) value of **Sleep after** and **Hibernate after** is **0x00000000**. On English Windows, this line is **Current AC Power Setting Index**.
- If the adapter is connected by USB: the **AC** value of **USB selective suspend setting** is also **0x00000000**.
- On a laptop that runs with the lid closed: the **AC** value of **Lid close action** is **0x00000000** (do nothing).

If a section of the report shows an error or is empty, that setting could not be checked.

Still disconnecting? Send a diagnostic report

If the Spider still disconnects after you try these solutions, collect a diagnostic report and send it to Crystal Instruments support at **support@go-ci.com**. If you can, also send the EDM log files (see Sending the Tech Support Log File).

If you can, also try a different USB-to-Ethernet adapter or the PC's built-in Ethernet port.

From:
https://help.go-ci.com/ - **Crystal Instruments Help**

Permanent link:
https://help.go-ci.com/vcs:controller-disconnects?rev=1793048071

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