

# FAQ of RIITOP eGPU Docking

## Connection & Recognition Issues

- **Issue 1: Device not recognized or “disconnects”**
  - **Symptoms:** The system cannot detect the eGPU device, or after connection, Device Manager keeps refreshing, and the GPU fan spins for a moment then stops, appearing as a “power cycling” state.
  - **Root Causes:** Driver conflicts, insufficient power delivery, interference from Fast Startup, or incorrect BIOS settings. (e.g., Thunderbolt security mode not enabled), or poor compatibility between Intel 12th-gen and later processors and Windows 11.
  - Specific brands (e.g., Dell XPS) use a discrete Thunderbolt controller instead of an integrated solution, making compatibility issues more prominent.
  - **Solutions:**
    1. **Check hardware and power:** Ensure the GPU is fully seated in the PCIe slot and all power cables are connected. Confirm the power supply has enough wattage for the GPU (some high-end cards have high transient power spikes).
    2. **Correct connection order:** Shut down the computer, connect the eGPU, then power on. Avoid hot-plugging while the system is running, as this is a common cause of recognition failure.
    3. **Driver and BIOS settings:** Download the latest drivers from the GPU manufacturer’s website (NVIDIA/AMD), rather than relying on Windows Update. In the BIOS, try disabling the integrated graphics, or enable options like “Thunderbolt/USB4 PCIe Tunneling.”
    4. **Disable Fast Startup:** Turn off “Fast Startup” in Windows Power Options. This can resolve some device initialization failures caused by sleep/hibernate states.
- **Issue 2: Specific port/laptop incompatibility**
  - **Symptoms:** The eGPU works fine on someone else’s computer but not on your own USB4-equipped laptop.
  - **Root Causes:** Some manufacturers’ USB4 ports (especially on certain Lenovo ThinkBook models) use a proprietary TGX interface. Although the physical port is USB-C, it requires specific firmware support. Additionally, a standard USB-C port that only supports DP video output (but not USB4/Thunderbolt protocol) cannot be used for eGPU.
  - **Solutions:**

- **Verify port specifications:** Confirm that your computer's port is indeed USB4 (40Gbps) or Thunderbolt 3/4, not a standard USB 3.2 or USB4 20Gbps port.
- **Check for BIOS updates:** For specific models (e.g., Lenovo with TGX interface), updating to the latest official BIOS is key to resolving compatibility issues.

## ⚡ Power Delivery (PD) Charging Issues

A major selling point of USB4 docks is “one-cable connection”—simultaneously transmitting data and charging the laptop. However, reality often falls short of expectations.

- **Symptoms:**
  - **No charging at all:** The dock can power the GPU, but the laptop does not charge when connected.
  - **Reverse charging failure:** The laptop does not charge while powered on, but does charge when shut down (commonly called “charge when off”).
  - **Insufficient power:** The laptop loses charge while plugged in, or the system crashes under high load.
- **Root Causes:** PD (Power Delivery) protocol handshake failure, USB4 firmware bugs, or power allocation conflicts (GPU and laptop competing for power).
- **Solutions:**
  1. **Update firmware:** Find and flash the latest firmware provided by the dock manufacturer, while also updating your laptop's BIOS and EC (Embedded Controller) firmware.
  2. **Enable BIOS settings:** Enter the BIOS and enable options related to “USB PD Control” or “UCSI” (USB Type-C Connector System Software Interface).
  3. **Use separate auxiliary power:** If the dock cannot provide sufficient charging power, it is recommended to plug the laptop's original charger directly into the laptop. Although this adds an extra cable, it ensures the GPU can perform at full power.

## ⚙️ Performance & Bandwidth Bottlenecks

Because the USB4 40Gbps bandwidth must simultaneously carry PCIe data and video signals, the performance loss is greater than expected.

- **Symptoms:** Higher frame rates, but games stutter or drop frames, or abnormally low 3DMark scores.
- **Root Causes:**
  - **“Backflow” bandwidth limitation:** If gaming on the laptop's internal display, the rendered frames must be sent back through the same cable, crowding the bandwidth. Performance loss can be as high as 20-30%.
  - **Protocol overhead:** USB4/Thunderbolt protocols have additional data conversion latency compared to native PCIe or OcuLink interfaces.
- **Solutions:**

1. **Use an external monitor:** Connect the monitor directly to the eGPU dock's video output. This is widely recognized as the best practice and significantly improves performance and reduces stuttering.
2. **Accept the performance loss:** Understand that even a 40Gbps interface cannot fully unleash the power of top-tier GPUs like the RTX 4090. It is recommended to pair the dock with a mid-to-high-end GPU (e.g., RTX 4070 or RX 7900 GRE) for the best price-to-performance ratio.

## "Ghost Display" & Software Errors

- **Symptoms:** An extra, non-existent "virtual display" appears in system settings, or unusually low scores in 3DMark.
- **Root Causes:** Logic flaws at the driver or firmware level in the USB4 controller chip.
- **Solutions:**
  - Try updating the dock's firmware.
  - In Windows Display Settings, try to "Disconnect" or "Disable" this virtual display.
  - If there's no image output, try holding down the laptop's physical reset button (if available) or resetting power management

## Performance & Stuttering Issues: Unexplained game

stuttering, fluctuating frame rates, significant performance loss

- **"Backflow" internal display bandwidth limitation:** This is the core architectural issue. If gaming on the laptop's internal display, the rendered frames must be sent back through the same cable, causing severe bandwidth contention.
- **Windows 11 optimization issues:** Many users report that the exact same Thunderbolt 4 + eGPU setup runs smoothly on Windows 10 but experiences severe stuttering after upgrading to Windows 11.
- **Resizable Bar (ReBAR) technology conflict:** This feature, designed to improve PCIe performance, can sometimes increase latency and cause game stuttering on bandwidth-limited Thunderbolt/USB4 interfaces. Disabling it resolves the issue.

### Solutions:

For the issues above, You can troubleshoot step by step:

1. **Fix stuttering: Force use of external display and disable ReBAR**

- **Primary solution:** Connect the monitor directly to the eGPU dock's video output, not to the laptop. This is widely recognized as the most effective performance optimization method.
  - **Advanced attempt:** If you experience unexplained stuttering while gaming on Windows 11, check your laptop's BIOS or GPU driver software and try disabling Resizable Bar (ReBAR) or Smart Access Memory (SAM) functionality.
2. **Fix connection and disconnection issues: Update everything and check hardware**
- **Disable Fast Startup:** Turn off "Fast Startup" in Windows Power Options. This resolves many device initialization failures.
  - **Update all firmware:** Upgrade your laptop's motherboard BIOS, Thunderbolt controller firmware, the dock's own firmware, and GPU drivers.
  - **Use high-quality cables:** Be sure to use a short Thunderbolt 4 certified cable (preferably under 1 meter / 3 feet). Poor quality or overly long cables are common causes of disconnections and charging failures.
  - **Check power supply:** Ensure the dock's power supply has sufficient wattage and that all power cables are fully seated.
3. **Special note for Dell XPS users**
- If you are using a Dell XPS 9520/9720 or other models equipped with 12th-gen Intel processors, community feedback indicates that Thunderbolt 4 + eGPU compatibility issues may be more severe. It is recommended to visit specialized forums like [eGPU.io](https://www.eGPU.io) before purchasing to check successful setups and specific configurations from other users with the same model.

## Purchasing Advice

1. **Know your needs:** If you are a hardcore FPS gamer who is extremely sensitive to latency, an **OCuLink interface dock** (which offers stronger performance but typically does not support charging) may be a better fit for you than USB4.
2. **Verify your device:** Before placing an order, make sure your computer's port is a "**full-featured USB4 (40Gbps)**" port, not a "USB-C 3.2 (10/20Gbps)" or "USB4 20Gbps" port.
3. **Power supply is critical:** If you plan to pair the dock with a high-end GPU (e.g., RTX 4080 or above), it is recommended to choose a dock with a **built-in high-wattage power supply (e.g., 800W or more) and dynamic load regulation capabilities**. This helps avoid power cuts or system restarts caused by high transient power spikes.

## Ghost Displays & Software Errors

**Q7: Windows shows an extra "ghost display" that doesn't exist. How do I fix it?**

**A:** This is a firmware or driver logic bug in the USB4/Thunderbolt controller chip.

**Solutions:**

- **Update the dock's firmware** to the latest version.
- In Windows Display Settings, try to **disconnect or disable** the virtual display.
- Try holding your laptop's physical reset button (if available) or resetting power management.

## Error 43: GPU Driver Failed to Start

**Q9: My eGPU is detected in Device Manager, but it has a yellow exclamation mark and says "Windows has stopped this device because it has reported problems. (Code 43)".**

**What does this mean?**

**A:** This is the **#1 most reported eGPU issue** on forums like [eGPU.io](https://www.eGPU.io). Error 43 is a generic

Windows message indicating that the GPU driver has crashed or failed to initialize properly.

It usually occurs during driver installation or after waking the computer from sleep.

**Common causes include:**

- **Driver conflicts** (especially when the laptop also has an internal NVIDIA/AMD dGPU)
- **PCIe tunneling/bandwidth issues** with the USB4 or Thunderbolt controller
- **Insufficient or unstable power delivery** to the GPU
- **Loose physical connections** (PCIe slot, power cables, or the USB4/TB cable itself)
- **Windows Fast Startup or power management settings** interfering with device initialization
- **Incompatible GPU series** with certain USB4 controllers (e.g., older GTX 10-series GPUs sometimes struggle with newer ASMedia USB4 controllers)

## Solutions:

### Step 1: Try the Community "Error 43 Fixer" Script

- Download and run the **nvidia-error43-fixer.bat** script (available on [eGPU.io](https://www.eGPU.io) forums)
- If the script says "No NVIDIA GPU in state 43 found" but your GPU still doesn't work, **manually edit the script** — comment out lines 130-131 that check for Error 43 before applying the registry patch. This forces the fix to apply regardless .

### Step 2: Clean Reinstall GPU Drivers with DDU

- Download **DDU (Display Driver Uninstaller)**, download link: <https://www.uittek.com/download/DDU%20v18.1.1.5.exe>
- Boot into **Safe Mode**
- Run DDU to completely remove all NVIDIA/AMD GPU drivers
- Reboot and install the latest GPU driver from scratch

### Step 3: Disable Windows Fast Startup

- Go to Control Panel > Power Options > Choose what the power buttons do
- Click "Change settings that are currently unavailable"
- Uncheck "Turn on fast startup (recommended)"
- Save changes and restart

### Step 4: Check Physical Connections

- Reseat the GPU in the PCIe slot
- Ensure all power cables are fully inserted (especially the 6+2 pin connectors — the 2-pin part can easily become loose)
- Try a different, certified Thunderbolt 4 or USB4 cable (shorter is better — ideally 0.8m or less)

### Step 5: Change Connection Order (Hotplug Method)

- Shut down the laptop completely
- Disconnect the eGPU

- Boot into Windows
- Once at the desktop, **plug in the eGPU** — sometimes this hotplug sequence bypasses BIOS-level detection issues

## • **Quick Troubleshooting Flowchart for Error 43**

### 🌀 **Error 12: Not Enough Resources**

**Q10:** I see "This device cannot find enough free resources that it can use. (Code 12)" in Device Manager. How do I fix this?

**A:** Error 12 is less common on modern systems but still appears, especially on **older laptops** or those with **limited PCIe address space** (e.g., 32-bit UEFI or systems with many built-in PCIe devices). It means Windows cannot allocate enough memory addresses for the eGPU .

#### **Causes:**

- The laptop's PCIe root complex has run out of address space (I/O or memory ranges)
- Conflicts with the internal dGPU (discrete GPU) or other PCIe devices (Wi-Fi, Ethernet, NVMe)

#### **Solutions:**

##### **For modern systems (Windows 10/11, 8th-gen Intel or newer):**

- **Update BIOS** — newer BIOS versions often expand PCIe address space
- **Try hotplugging** — boot without the eGPU, then connect it after Windows loads
- **Disable unnecessary PCIe devices** in Device Manager (e.g., internal dGPU if not needed, or Wi-Fi/Ethernet temporarily)

##### **For older systems (pre-8th-gen Intel, or systems with 32-bit UEFI):**

- Perform a **DSDT (Differentiated System Description Table) override** — this manually expands the available PCIe address space. This is an advanced fix; detailed guides are available on [eGPU.io](https://www.eGPU.io)

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## 🔍 Other Error Codes You Might Encounter

**Q11: Are there any other error codes I should know about?**

**A:** Yes, here are a few less common but still reported errors:

Error Code	Description	Typical Fix
<b>Error 31</b>	"This device is not working properly because Windows cannot load the drivers required for this device"	Run DDU and reinstall drivers; may indicate a device conflict after Windows Update
<b>Error 10</b>	"This device cannot start"	Usually a hardware or firmware issue — try updating dock firmware, reseating GPU, or testing GPU in another system
<b>Error 31 (on iGPU)</b>	After running Error 43 fix script, the <b>internal Intel iGPU</b> shows Error 31	Boot without eGPU connected, let the iGPU initialize first, then connect eGPU after boot. Or set BIOS to boot from iGPU by default

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## 💡 Final Note

If you've tried everything and Error 43 persists, the issue may be **hardware-level incompatibility** between your specific GPU model and your laptop's USB4/Thunderbolt controller. For example, some users have reported that GTX 10-series GPUs have difficulty

working with newer ASMedia USB4 controllers on 11th-gen Intel systems . In such cases, testing a different GPU or a different eGPU dock may be necessary.

## RTX 50-Series eGPU Shuts Down During Boot

It's actually a well-documented **power delivery and handshake timing issue** that occurs when high-power GPUs like the RTX 5070 try to initialize through Thunderbolt during system boot.

### Why Your GPU Shuts Down During Boot

When your computer boots with the eGPU connected, the Thunderbolt controller attempts to initialize the GPU **before** the full power delivery sequence is stable. The RTX 5070 draws significant power during this handshake, causing the Thunderbolt connection to fail — resulting in the GPU appearing to "shut down."

This is **not** eGPU dock defect — it's a known behavior with RTX 50-series cards and Thunderbolt eGPU setups.

### The Solution: Proper Boot Sequence (Critical Fix)


This is the **most important step** and will likely solve your problem immediately:

#### Correct Procedure (Follow This Exactly):

1. **Ensure eGPU power supply is ON** (green light on PSU)
2. **Turn on the RIITOP dock** (press the ON/OFF button)
3. **Wait 5-10 seconds** — let the dock and GPU fully power up
4. **Boot your laptop** as normal

#### If the above doesn't work, try the alternative sequence:

1. **Boot your laptop without the eGPU connected**
2. **Wait for Windows to fully load** (desktop visible)
3. **Plug in the Thunderbolt cable** — Windows should detect the eGPU
4. **Check Device Manager** — RTX 5070 should appear without Error 43

 **Important:** Never hot-plug the Thunderbolt cable while the computer is shutting down or entering sleep mode.

### Additional Settings to Check

1. Thunderbolt BIOS Settings

Enter BIOS on your X1 Carbon (press F1 during boot) and verify:

- **Thunderbolt BIOS Assist Mode** → Disable (if present)
- **Security Level** → Set to "No Security" or "User Authorization" (not "Display Port and USB")
- **Pre-boot Modules** → Enable

## 2. Windows Thunderbolt Settings

- Open **Thunderbolt Control Center**
- Find your RIITOP dock in the list
- Set to "**Always Connect**" (prevents authorization prompts during boot)

## 3. NVIDIA Control Panel Settings

Once the GPU is working:

- Open NVIDIA Control Panel
- Go to **Manage 3D Settings** → **Power Management Mode**
- Set to "**Prefer Maximum Performance**"
- This prevents the GPU from entering low-power states that can cause disconnection