Requirements for Active Stereoscopic Viewing and Mapping in ArcGIS Pro

NVIDIA 3D Vision Kit
Version 1.0

In addition to the minimum requirements to run ArcGIS Pro, you need to configure your system with appropriate hardware to view and work with stereo imagery. A description of each component is given below.

Computer Hardware

Computer hardware required to support stereoscopic mapping in ArcGIS Pro includes a mobile or desktop workstation with specifications similar to the following:

- Graphics Card - dedicated Nvidia Quadro, GeForce, AMD FirePro or Radeon Pro WX series graphics cards
- Display port that supports 3D such as:
  - Full display port
  - Mini display port
  - DVI-D port
  - USB Type C
- CPU – Current Intel or similar processor
- RAM – 32 GB, or more
- Hard Drive – SSD (recommended)

Stereoscopic (3D) Monitor

Stereoscopic monitors can be classified into two main categories – Active and passive systems. Active systems uses alternating/active shutter glasses technology while the passive system uses polarized glasses with beam splitting monitors to support stereoscopic (3D) viewing. Setup and configuration requirements for each system is outlined below.

Active Stereoscopic System Requirements

- 3D Monitor that supports:
  - Refresh rates of 120 Hz or higher
  - Ports – Display, or DVI-D
- 3D Monitor Adapters
  3D Monitor Adapters—Depending on the computer/monitor configuration used, additional display adapters may be required to support stereoscopic viewing. Use the following tables as a guide in determining the cables and or adapters required for your configuration.

Active stereographic display requirements

Laptop computer

Display port type	3D monitor port type	Adapter required
DVI-D	DVI-D	NA
Display	DVI-D	Display port to Active DVI-D adapter - USB powered
Mini display	DVI-D	Active mini display port to DVI-D adapter
DVI-D	Display	Display port to Active DVI-D adapter - USB powered
Display	Display	NA
Mini display	Display	Display port to mini display port adapter
USB-C	Display	USB 3.1 Type C display port 1.2 UHD Active adapter

Desktop computer

Display port type	3D monitor port type	Adapter required
DVI-D	DVI-D	NA
Full display	DVI-D	Display port to Active DVI-D adapter - USB powered
DVI-D	Display	Display port to Active DVI-D adapter - USB powered
Display	Display	NA

- 3D Vision Kit
- NVIDIA 3D Vision Kit (Legacy) – Please note NVIDIA is no longer manufacturing or supporting the NVIDIA 3D vision kit. Additional information can be found here.
- Existing NVIDIA 3D vision kit owners may continue to use the device.

  The NVIDIA 3D Vision kit includes:
  - Active shutter glasses
  - Infra-red emitter
  - Connecting cables

Active Stereoscopic System 3D Monitor Setup

A single stereoscopic monitor setup uses NVIDIA 3D vision or similar active shutter glasses technology. You can use additional displays along with the 3D vision display. The following steps enable you to use active shutter eyewear with stereo mapping.

Prerequisites:

- ArcGIS Pro 2.1 or later installed and licensed
- Image Analyst Extension activated
- 3D Monitor connected to the computer system
- Infra-red emitter connected to the computer system
- 3D shutter glasses

Having the latest graphics card drivers is important for stereoscopic viewing. Use the following steps to determine and update your existing graphics card version.

Note:

Not all NVIDIA graphics cards and drivers support stereoscopic 3D capabilities. Only NVIDIA drivers at or before Release 418 include the 3D vision drivers needed to enable stereoscopic 3D.

Determine Your Graphics Driver Version

1. Right-click on your desktop and select **NVIDIA Control Panel**. This will open the **NVIDIA Control Panel** dialog box.
2. At the bottom of the dialog box click "**System Information**." This will open an information dialog box that reveals the graphics card type and version. Make note of this information, perhaps with a screen capture.
3. Close the **System Information** dialog and **NVIDIA Control Panel** dialog box.

Download the Latest Graphics Driver Version

The following assumes that your graphics card was manufactured by NVIDIA.

1. From the **NVIDIA Driver Downloads** webpage.
2. For **Product Type** click the drop-down menu and select appropriately.
3. For **Product Series** select the appropriate option. If working with a laptop, ensure the option selected is **notebook**.
4. For **Product** select the graphics card used by your computer.
5. For **Operating System** chose the appropriate version.
6. 

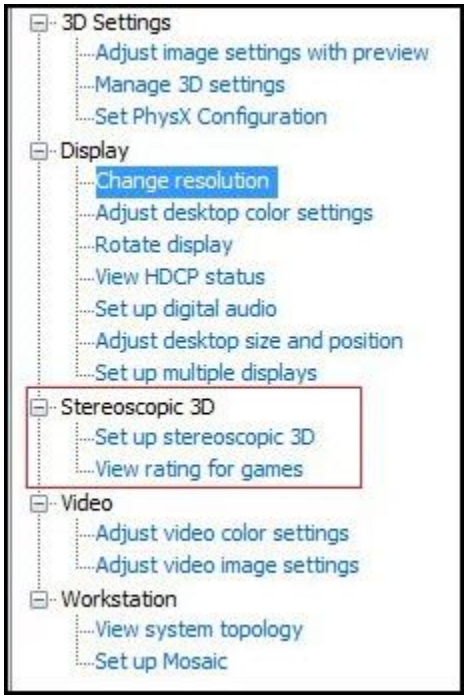
7. Click **Search** to execute the process.
8. Download the result of the search and save it to a known location on disk.

Next you will install the downloaded driver

Install the Latest Graphics Driver Version

1. Double-click the downloaded graphics driver to start the install process.
2. Click **Run** if prompted with a question to run or not.
3. Click **OK** to accept the default folder for the extracted executable.
4. Once the extraction is complete, a system compatibility check will be conducted automatically. If the graphics driver fails the compatibility test, a different driver will need to be downloaded and installed.
5. If the graphics driver passes the compatibility test, click **Agree and Continue** to proceed with the installation.
6. For **Installation Options** click the radio button next to **Custom (Advanced)** then click **Next**.
7. Click **Finish** once the installation process is complete.

8. If installed correctly, a new **Stereoscopic 3D** category will be added to the **NVIDIA Control Panel**. To verify this, right-click on your desktop and select **NVIDIA Control Panel**. This will open the **NVIDIA Control Panel** dialog box. A new “Stereoscopic 3D” category is now added to panel.



Desktop Monitor Configuration

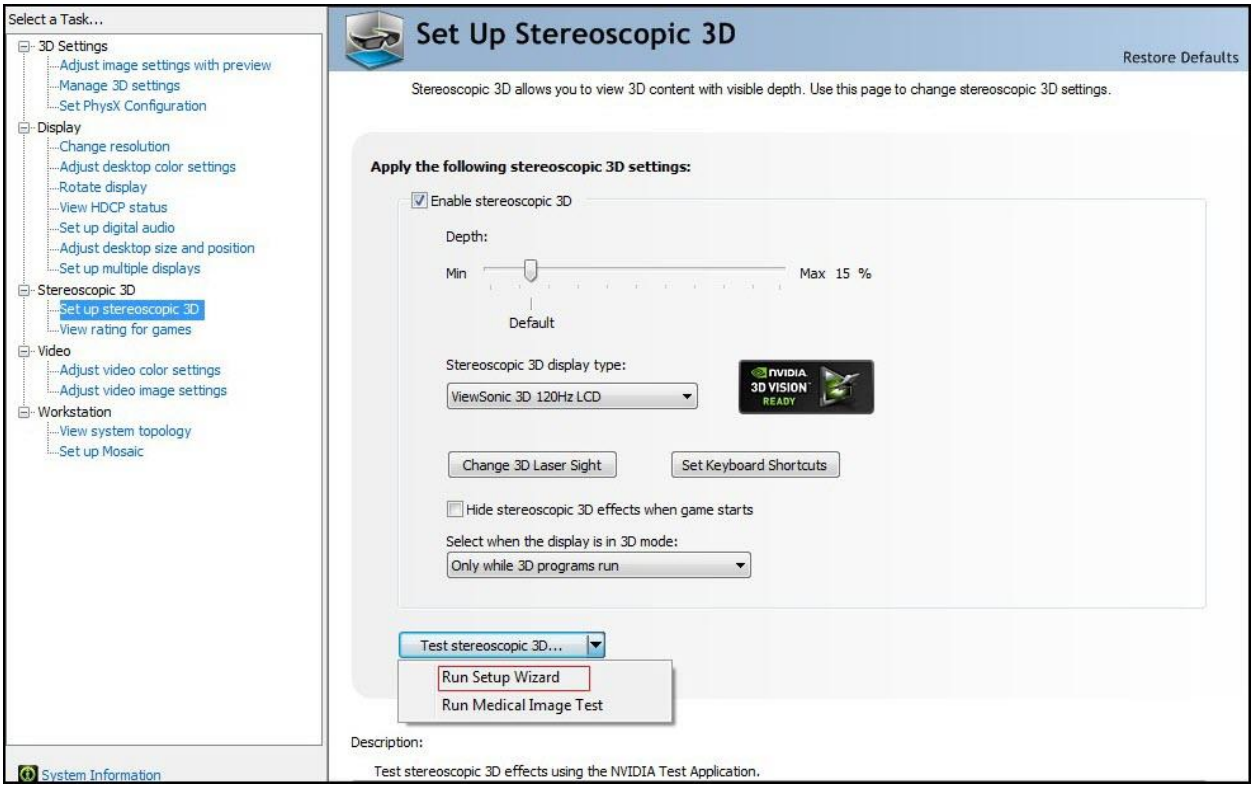
1. Right-click on your desktop and select **Screen Resolution**. This will open the **Display Configuration** panel.
2. Under screen configuration, if only one monitor is reflected, select **Extend these displays** in the **Multiple Displays** section.
3. Within the **Change the appearance of your displays** section, click **Identify** to determine the ID of the 3D monitor.
4. Select the 3D monitor and click **Make this my main display**.
5. With the 3D monitor still selected, click **Advanced Settings**. This will open the 3D Monitor properties dialog box.
6. Click the **Monitor** tab.
7. Under the **Monitor Settings** section, for **Screen Refresh Rate**, select **120Hz** from the drop-down menu and click **OK** to save the settings.
8. Click **OK** to close the Screen Resolution panel

Configure Stereoscopic 3D

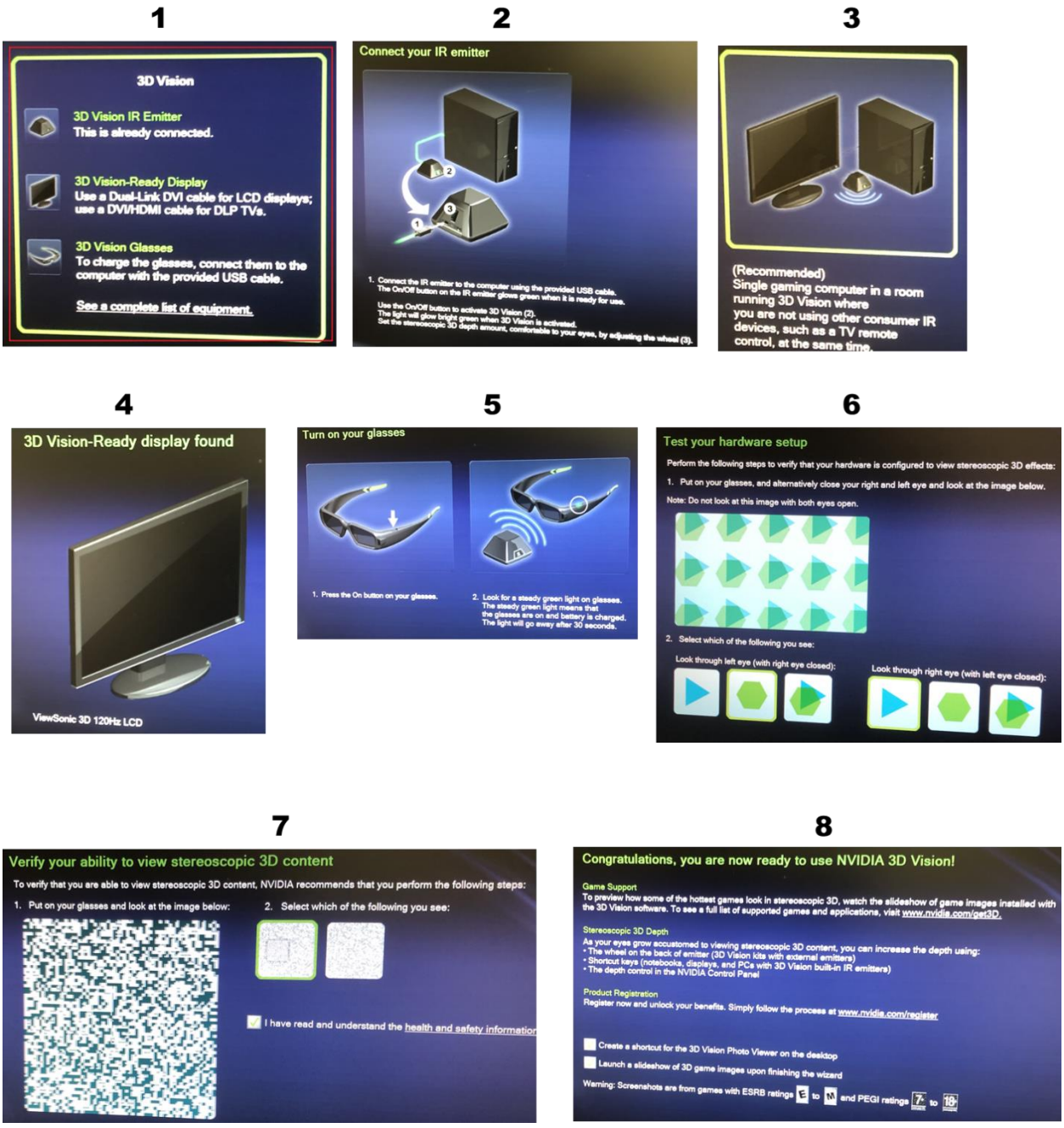
1. Right-click on your desktop and select **NVIDIA Control Panel**. This will open the **NVIDIA Control Panel** dialog box.
2. In the **Stereoscopic 3D** section select **Set up stereoscopic 3D**.

   Note: If a 3D monitor is attached and the **Stereoscopic 3D** category is absent from the NVIDIA control panel, the graphics card driver needs updating.

3. Within the **Stereoscopic 3D** category, click **Set up stereoscopic 3D**.
4. On the right side of the screen, click **Test stereoscopic 3D** drop-down menu and select **Run Setup Wizard**.



5. Follow the onscreen prompts and ensure your settings matches the following in the order listed



6. If you didn't get the **Congratulations** page at the end, check your configuration and rerun the wizard.

Once completed successfully, your 3D display hardware is set up stereoscopic viewing.

See the ArcGIS Help topic, Stereo Mapping in ArcGIS Pro, for information on how to configure ArcGIS Pro to enable Stereoscopic display capability.