

# FlightPanel™ Technical Guide



FlightPanel™ Flight Simulator Instrument Panels

Introduction to FlightPanel™ Flight Simulator Instrument Panels	3
Powering the FlightPanel	4
Getting Familiar with FlightPanel™	5
The Red Mode Switch	5
IntelliPress™ Command Repetition	6
IntelliSpin™ Automatic Knob Acceleration	7
SwitchSync™ Aircraft Harmonization (FLEX only)	8
Configuring the Knobs, Push Buttons, and Switches	9
Printing Labels	10
Optional PanelBuilder Software	11
Connecting Multiple Displays to your Computer	12
Tips for for X-Plane 11	21
Disabling FlightPanel displays in X-Plane 11	23
Mapping buttons and knobs in X-Plane 11	23
Adjusting the Flight Camera	24
Installing and Using PanelBuilder	25
Adding or Removing Instruments and Gauges	26
Moving Instruments to the Correct Position	27
Recommended PC Hardware:	28
Graphics Card (GPU)	28
Processor (CPU)	29
32GB of DDR4 Memory (RAM)	29
500GB+ NVMe or SATA SSD	29
5x USB3.0 Ports	29
Drivers, Downloads, and More	30

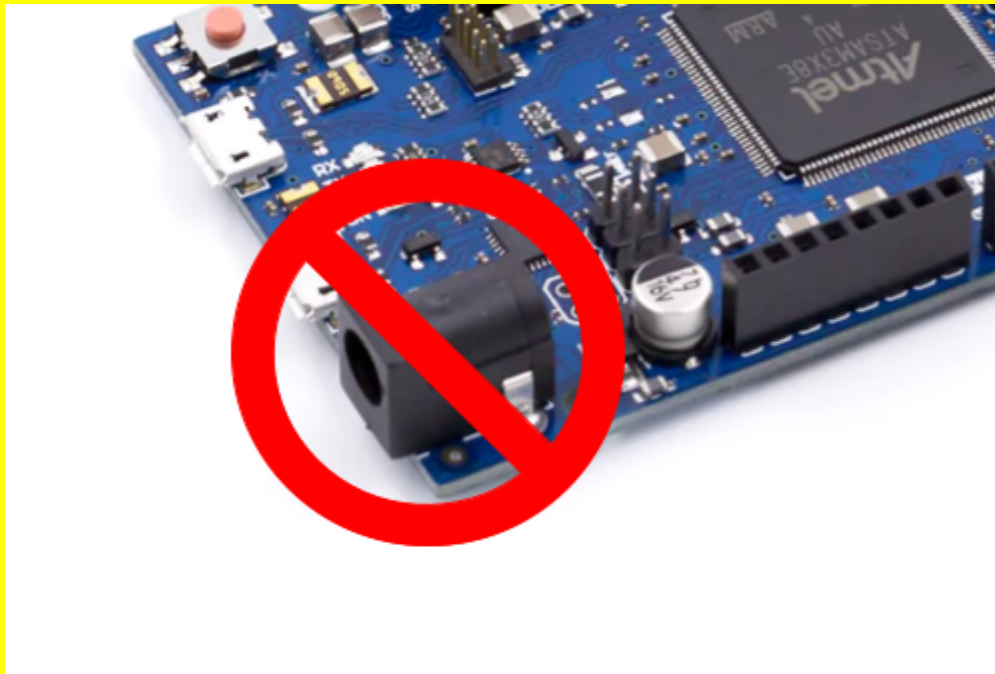
# Introduction to FlightPanel™ Flight Simulator Instrument Panels

Thank you for purchasing a FlightPanel™ Flight Simulator Instrument Panel! This user guide will explain how to make the best use of it with your flight simulator.

The concepts behind the FlightPanel™ are simple:

1. Provide a generic airplane panel solution with knobs, buttons, and switches that can easily be mapped to any function in any airplane.
2. Provide a generic instrumentation environment such that the instruments you fly behind can be customized to any airplane.
3. Provide an intelligent solution that will work with any and all flight simulators.

**DO NOT INSERT ANY POWER CABLES INTO  
ARDUINO CONTROL BOARD**



**ARDUINO IS POWERED OVER PRE-INSTALLED  
USB CABLE**

# RealSimGear GPS Units

AllSportSystems will pre-connect USB cables from any RealSimGear GPS units to the internal USB Hub for FlightPanel Classic and FlightPanelPRO systems.

Only Power Cables and HDMI Cables will need to be installed. HDMI cables are not included with RealSimGear Devices.

RealSimGear Setup Information	
<p><a href="#">GNS430 Setup Guide</a></p>	
<p><a href="#">GNS530 Setup Guide</a></p>	
<p><a href="#">GTN650 Setup Guide</a></p>	
<p><a href="#">GTN750 Setup Guide</a></p>	
<p><a href="#">G1000 Suite Setup Guide</a></p>	

## Powering the FlightPanel

If your FlightPanel includes internal screens or other accessories such as an internal USB Hub, GPS Navigator, etc, these will typically require power and other connections (HDMI or USB).

- Remove the Rear Access Panels being careful not to disturb the internal wiring.
- Connect POWER and USB cables as needed

**ARDUINO CONTROL BOARD DOES NOT NEED POWER. DO NOT INSERT POWER CABLES INTO ARDUINO CONTROL BOARD**

- Be careful not to overtighten screws.
- Some devices will need to be attached from behind while others will attach through the front.
- We recommend connecting all add-in devices to a powered USB Hub (included with CLASSIC and PRO FlightPanels). As always, be careful not to disturb the internal wiring or the microcontroller.
- CLASSIC & PRO ONLY: Plug the USB cable cable into the USB port installed on the back. Plug the other end into a USB port on your computer.
- FLEX ONLY: Plug the USB cable into the microcontroller using the connector nearest to the white reset button. Plug the other end into a USB port on your computer or into a powered USB hub.

## **Getting Familiar with FlightPanel™**

Once the FlightPanel™ is connected via a USB cable your computer should detect a new keyboard. Please note that FlightPanel™ will not begin sending keystrokes to the computer for 10-20 seconds after it is first powered.

Open Notepad, or any other text editor, and begin turning the knobs and pressing the buttons on your FlightPanel™. You will observe a unique key being sent for each action.

### **The Red Mode Switch**

The red “Mode” switch will alter the keys sent, so that most controls can serve two purposes in your sim. On certain panels an LED is provided to alert you to the position of the Mode Switch.

## **IntelliPress™ Command Repetition**

Each push button sends a single keystroke per press. This includes the push button functions associated with the knobs. However, the push buttons can also send a constantly repeating keystroke if you press and hold. You must hold the button for approximately one second for this to begin.

By design, IntelliPress™ Command Repetition operates slower than the IntelliSpin™ behavior described for knobs. This allows it to work well for things like raising or lowering flaps on airplanes that require a handle to be held while a motor slowly moves the object. It also allows you to use the buttons for radio tuning, setting transponder codes, and many other “rotary” behaviors when desired.



## **IntelliSpin™ Automatic Knob Acceleration**

Each knob sends a single keystroke per detent, which you will feel while turning the knob.

If you give the knob two quick short turns it will begin continuously sending the keystroke rapidly. Once it's started, you can maintain the faster IntelliSpin™ action by maintaining steady unhurried movement of the knob in the same direction.

There are two ways to stop IntelliSpin™ Acceleration:

1. Stop turning the knob. IntelliSpin™ Acceleration will end approximately  $\frac{1}{3}$  of a second later. This will result in 15-20 additional keystrokes being delivered after you stop turning the knob.
2. Moving the knob one or more detents in the opposite direction. This will stop IntelliSpin™ Acceleration immediately.

## **SwitchSync™ Aircraft Harmonization (FLEX only)**

The FLEX panel includes silver toggle switches in addition to knobs and push buttons. Note that these switches are not affected by the Mode Switch. However, each time the Mode Switch is changed, the current position of each switch will be sent to the computer as a series of keystrokes. This allows you to quickly harmonize the switch positions with the simulated airplane any time you like.

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*We recommend that you practice using SwitchSync™, IntelliSpin™, and IntelliPress™ in Notepad to get familiar with how they behave. You will soon discover that these are very helpful features for your flight simulator!*

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## **Configuring the Knobs, Push Buttons, and Switches**

As far as the computer is concerned, FlightPanel™ looks just like a keyboard. Each knob and switch will submit a unique keystroke to the computer when turned or pressed.

Simply access your flight sim “keyboard configuration” screen, select the control you wish to configure, and then turn or press the selected knob, switch, or button to send the key.

Remember that the red Function Switch on your FlightPanel™ allows each knob/button to serve two roles, so think carefully about the ideal position of the Mode Switch as you are making your assignments.

You will likely want to configure more frequently used controls, such as Altimeter, Landing Gear, Heading Bug, AutoPilot, OBS Rotation, Lights, Radio Tuning etc with the Mode Switch in its default/off position.

You can then assign less frequently used controls, such as Fuel Tank Selector, Magnetos, Starter, Transponder Digits, etc to auxiliary roles with the Mode Switch On.

Note: If you are using P3D or FSX you may need a third party software such as FSUIPC, in order to configure keystrokes for all of the aircraft controls. Other flight sim packages, such as XPlane and FS2020 provide full keystroke mapping without the need for third party software.

## Printing Labels

Sample labels for the various controls can be accessed from Google Drive here:

[https://drive.google.com/drive/folders/1tFYFYCxJFyeFC1VlexS7qF31l\\_RVjqqP?usp=sharing](https://drive.google.com/drive/folders/1tFYFYCxJFyeFC1VlexS7qF31l_RVjqqP?usp=sharing)

You will need to copy the label templates and save copies in your own Google Drive. You will then be able to edit the files to match your assignments.

After printing, simply trim the labels and insert them into the channels on your FlightPanel™.

## Optional PanelBuilder Software

If you ordered a license for PanelBuilder software it will be delivered as a special USB key resembling a memory stick. Make sure the USB key is connected to a USB port. Then download the software here:

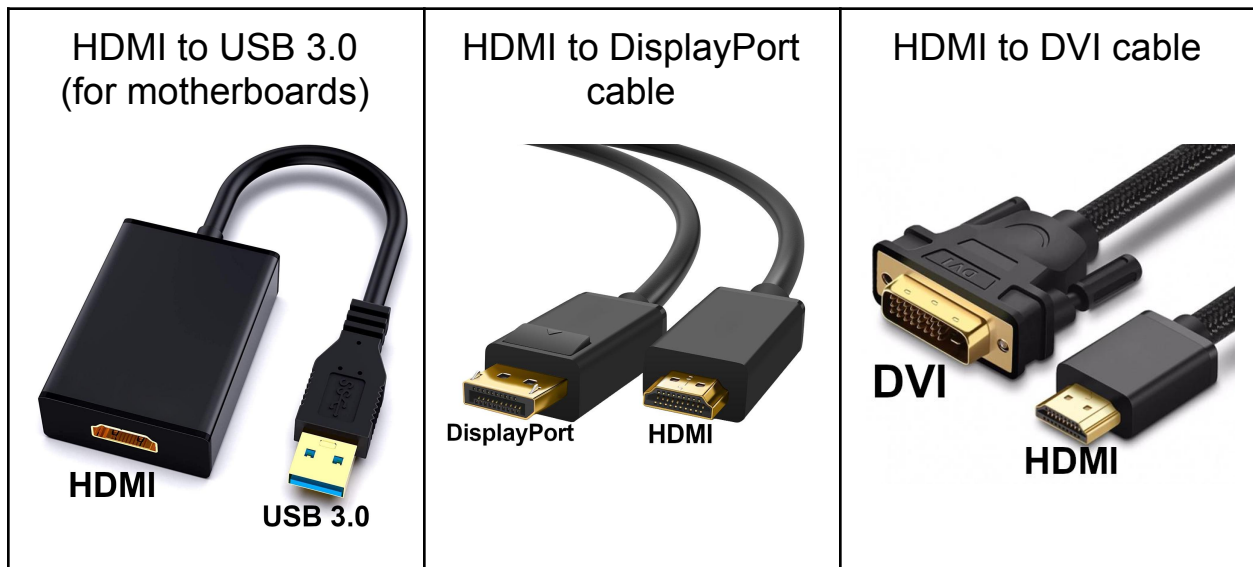
<https://simplugins.com/html/downloads.html>

Refer to the SimPlugins website for instructions on using PanelBuilder to replicate your favorite airplane instrument panel.

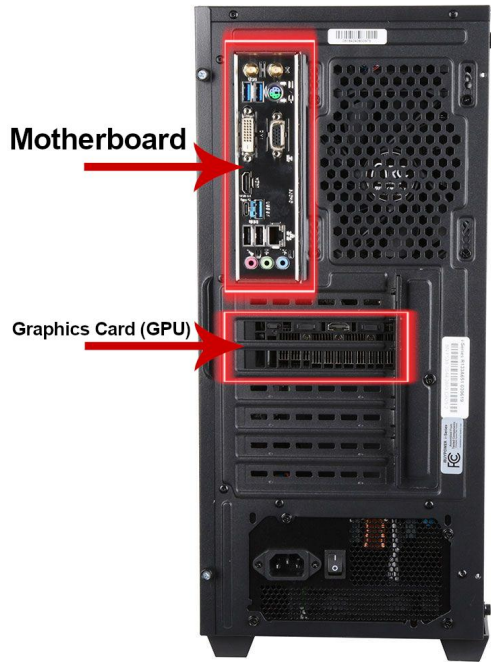
## Connecting Multiple Displays to your Computer

Connecting your main displays and additional FlightPanel displays to your computer will require the use of a high-end graphics card. We recommend one that can run at least three separate screens at a time. You can find a list of recommended graphics cards in the Appendix of this document, current as of the date of this writing.

- Your main displays should connect to your computer through the graphics card.
- While your graphics card may have more than three video connections on it, you may not be able to use all them simultaneously. Check the specs on your card to determine how many screens it can handle.
- Your graphics card may only have one or two HDMI connections on it, along with DVI or DisplayPort connectors. You can use any of these connection types so long as you have a matching cable or adapter to HDMI.
- Any remaining displays that cannot be run through the graphics card can be connected to the motherboard using HDMI to USB 3.0 adapters.

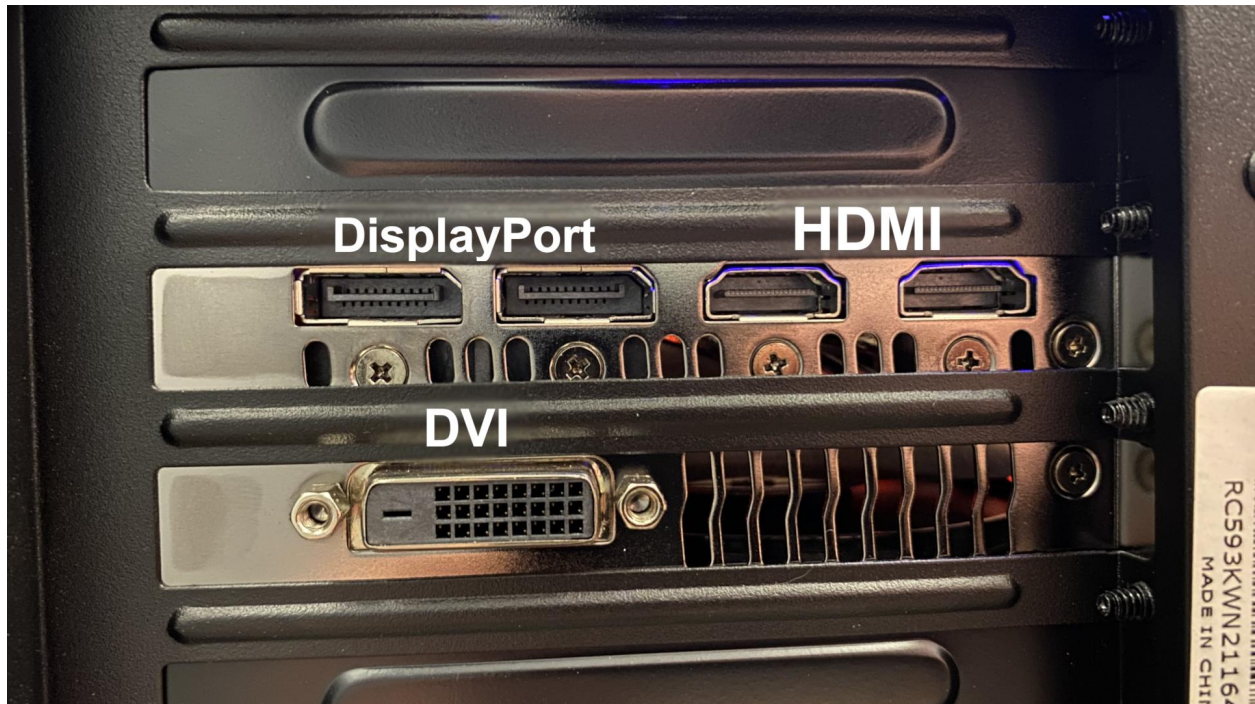


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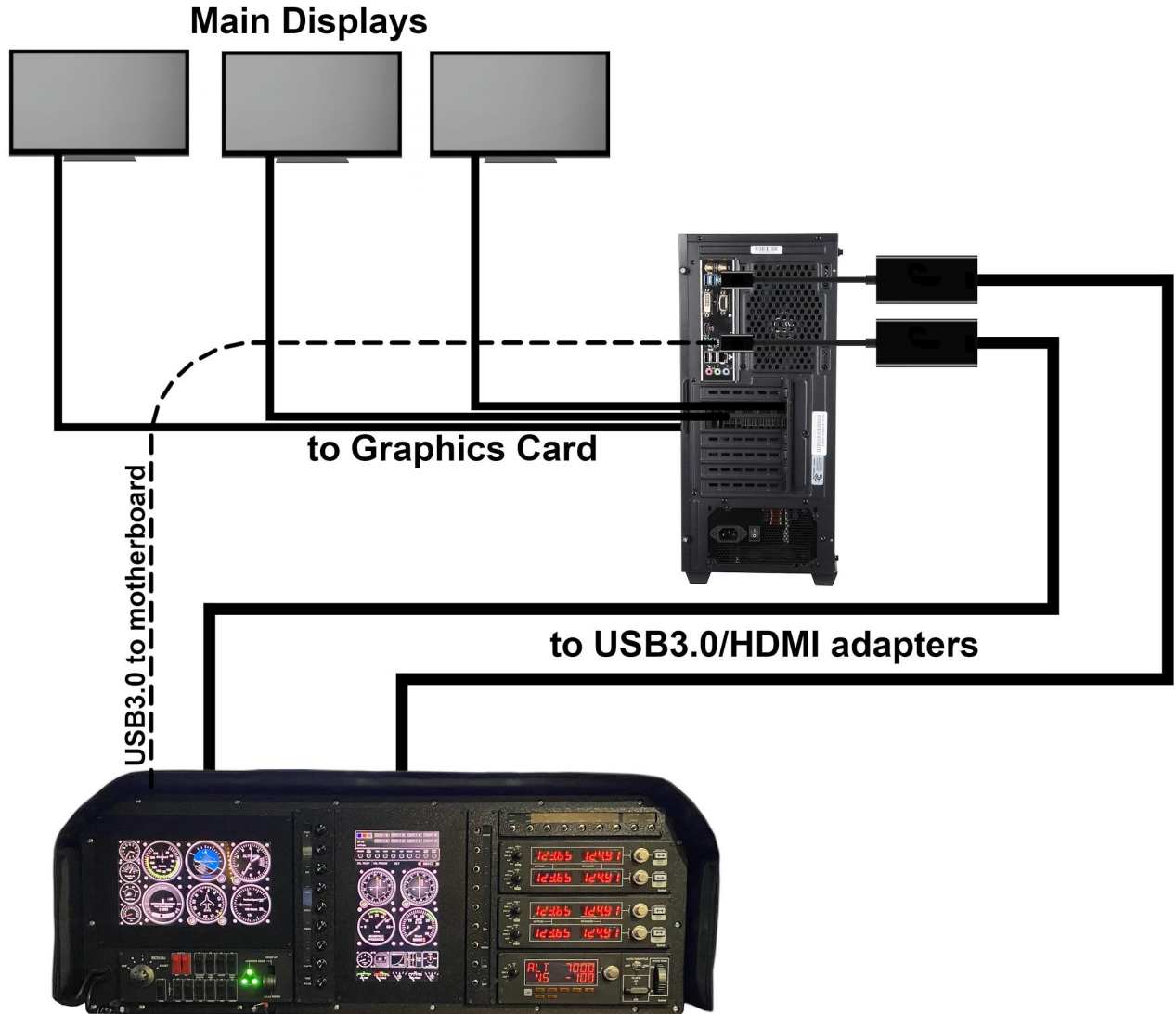


- Take note of the diagram showing where the motherboard and GPU are found on your PC.
- Every PC is different, so the plug layout may differ from the image shown, however the general locations and plug types will still be the same.
- USB 3.0 ports will have a distinct blue color to them. Be sure to plug your FlightPanel and any other USB 3.0 devices into the correct ports.

The image below will help you identify the digital video ports found commonly on graphics cards and/or motherboards.



# Wiring Diagram



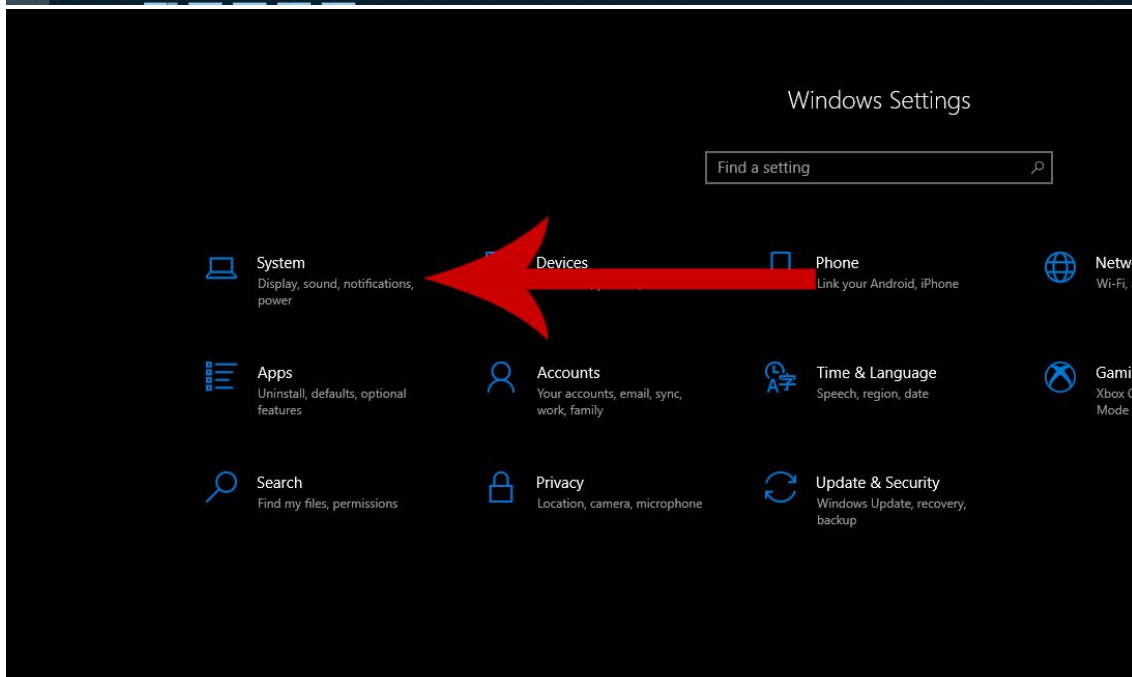
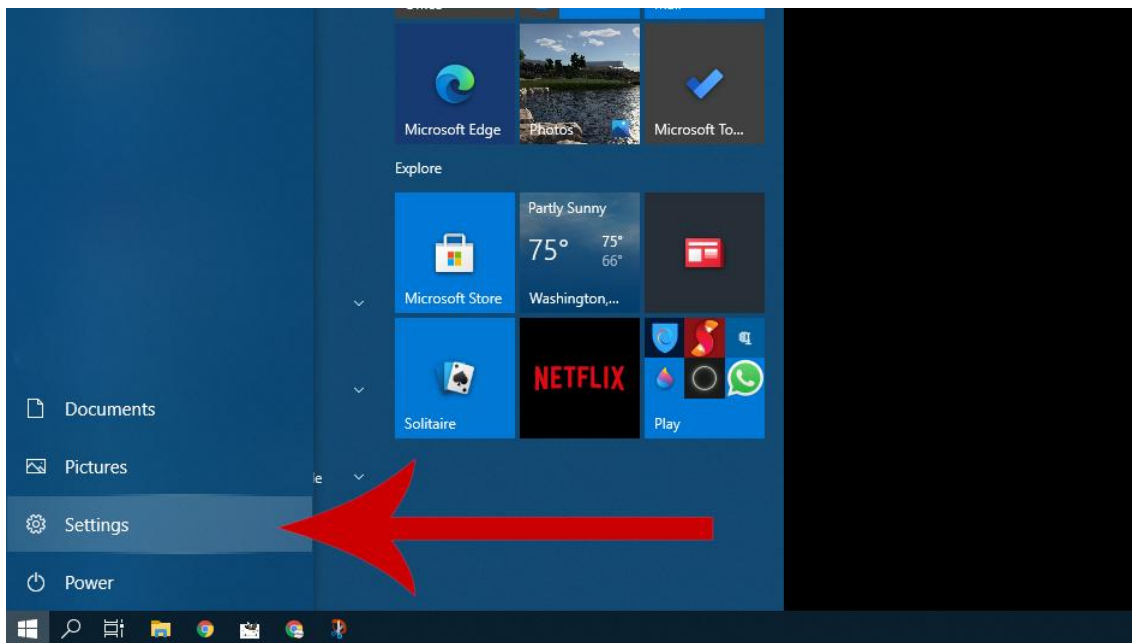
For systems with GPS modules additional USB3.0/HDMI adapters may be needed.



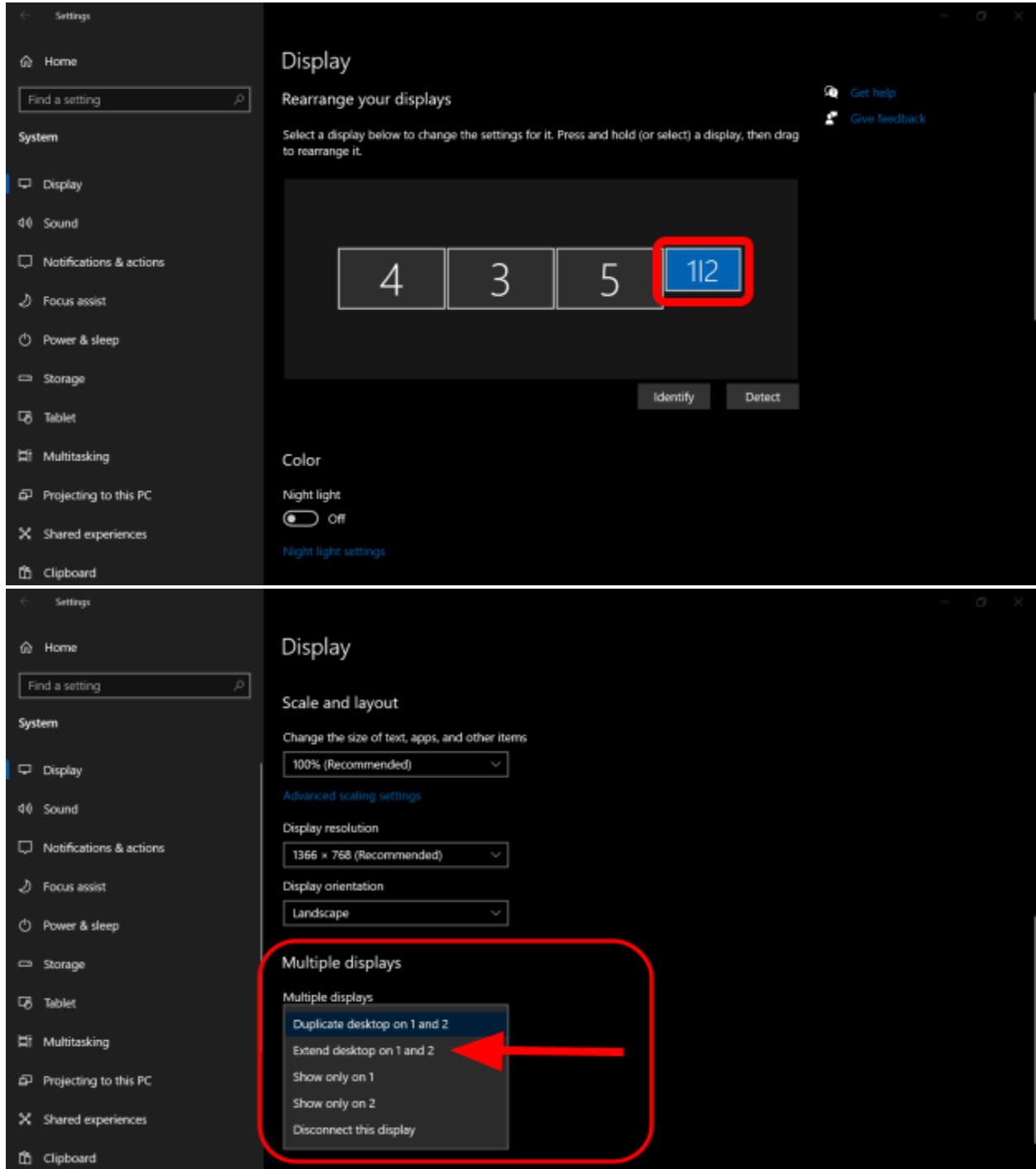
Configuring your multiple displays:  
**(Before configuring in windows)**

- Plug your main displays directly into the GPU.
- Plug the FlightPanel displays into your USB3.0/HDMI adapters.
- Make sure all of your displays are powered ON before booting into Windows.

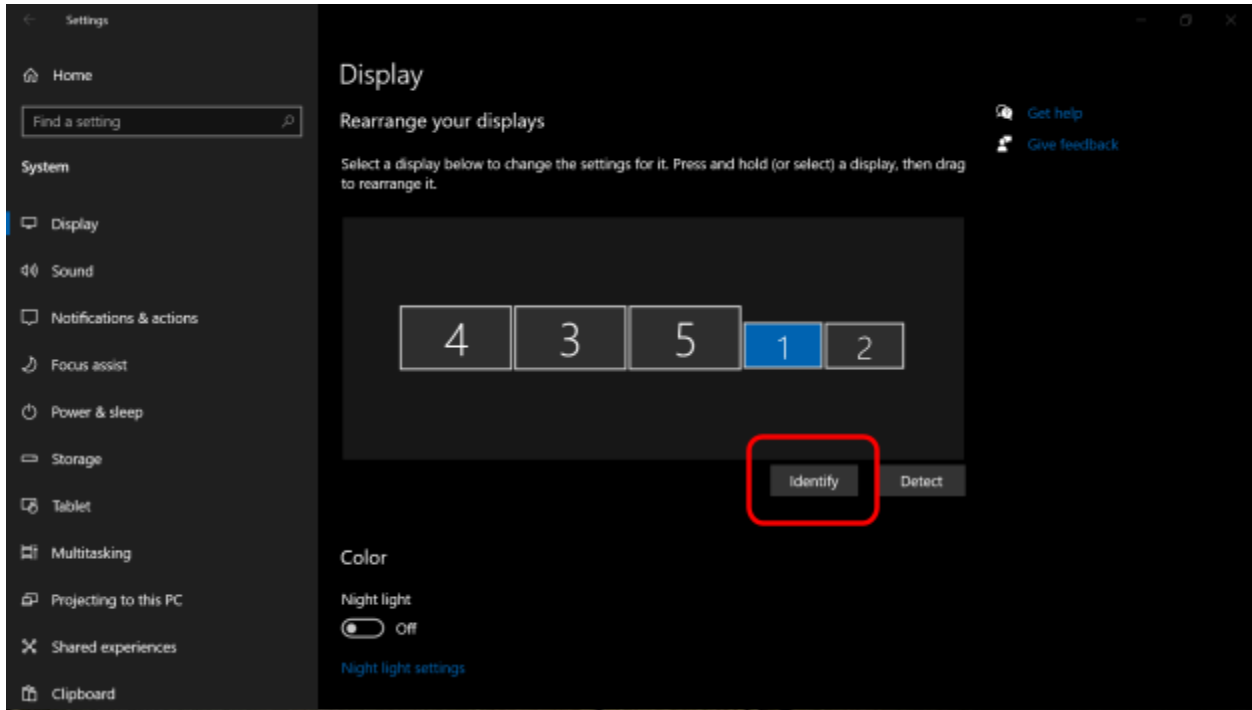
1. In Windows - Open your settings and select “System”.



- Windows may detect the FlightPanel screens as one single screen. If this happens, select the display showing two numbers in one (for this example Windows shows 1|2), then scroll down to the “Multiple Displays” drop down menu and select “Extend desktop on 1 and 2”. This will separate the screens into two independent displays

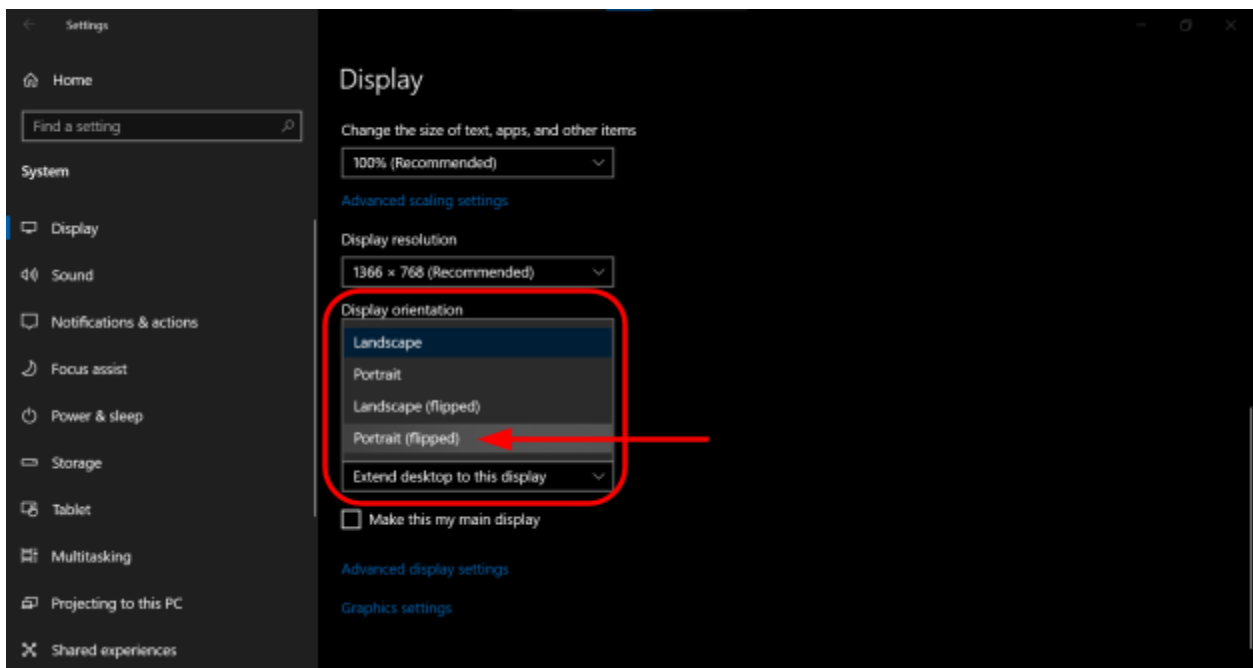
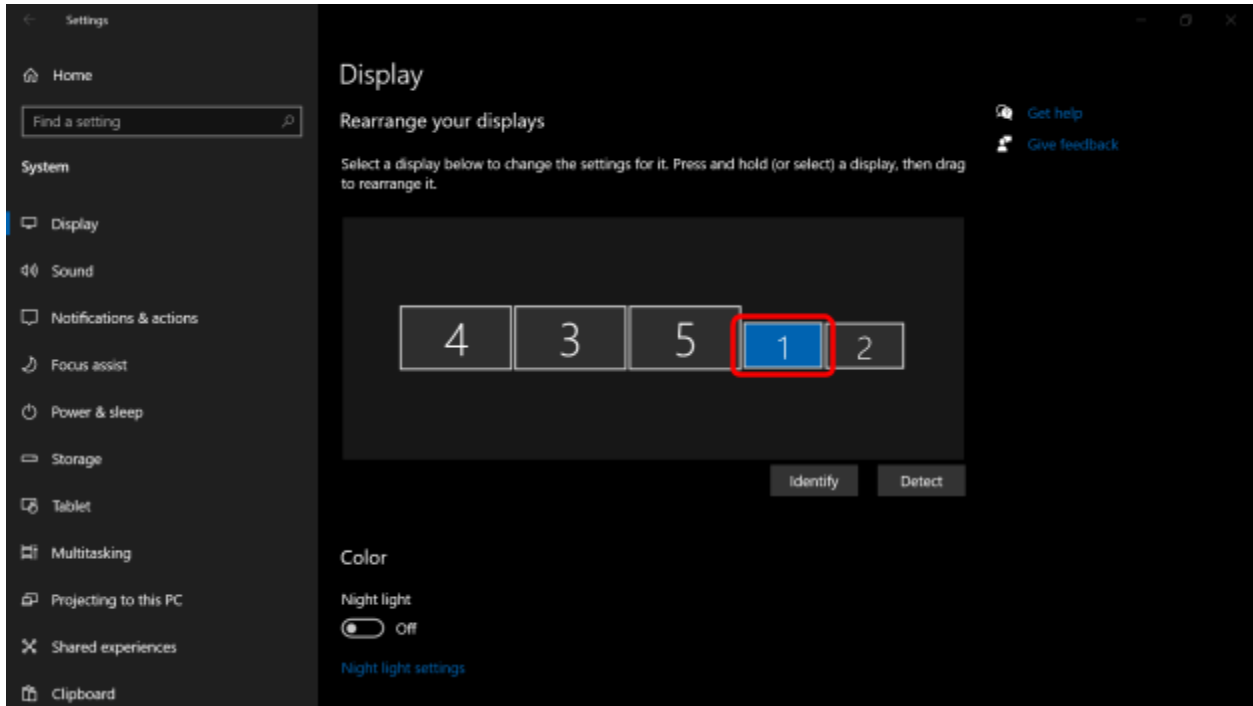


3. To verify that your displays have been separated, scroll to the top of your display settings and select “Identify”. Each of your screens should display a number corresponding with the Windows display settings. Order all of your screens correctly from left to right.

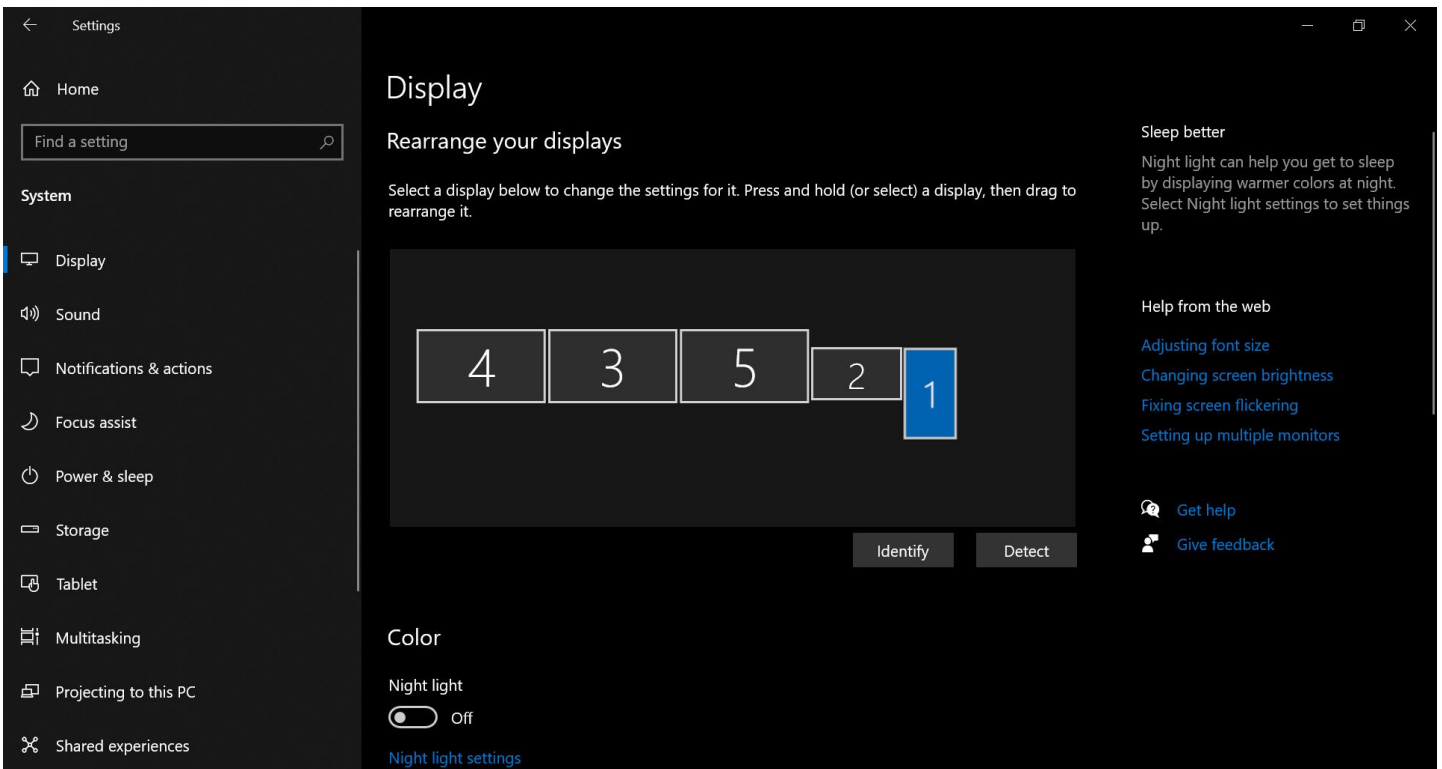


Notice that Screen 1 is not correctly oriented. We will fix this in the next step.

4. After taking note of which screen is not correctly oriented (in this example it is screen 1), select that screen, scroll down to the “Display Orientation” drop down menu, and select “Portrait (flipped)”.



5. Once the vertical FlightPanel display is rotated correctly, make sure it is positioned correctly within Windows Display settings by clicking and dragging it into place.



Please be aware...

You **MUST** reboot your PC:

- 1. Any time you change the screen ordering**
- 2. Any time you disconnect/reconnect a screen's HDMI cable while your PC is running.**
- 3. Any time you power off/power on a screen while your PC is running.**

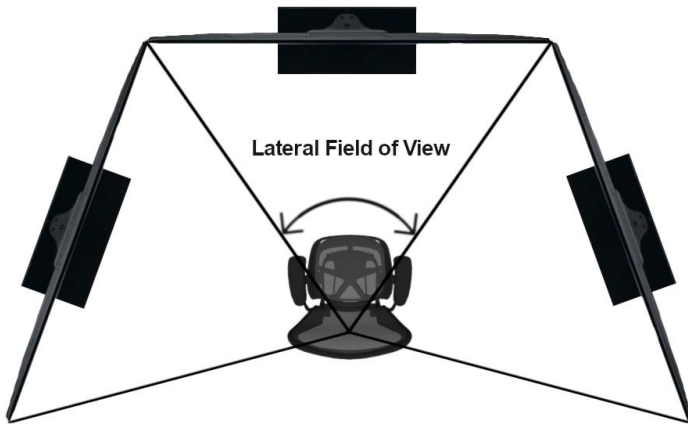
The screens must all be powered on and physically connected before booting Windows and running any flight sim software. Otherwise Windows will not remember the display settings and/or orientation for your displays and they will all need to be reset.

# Tips for for X-Plane 11

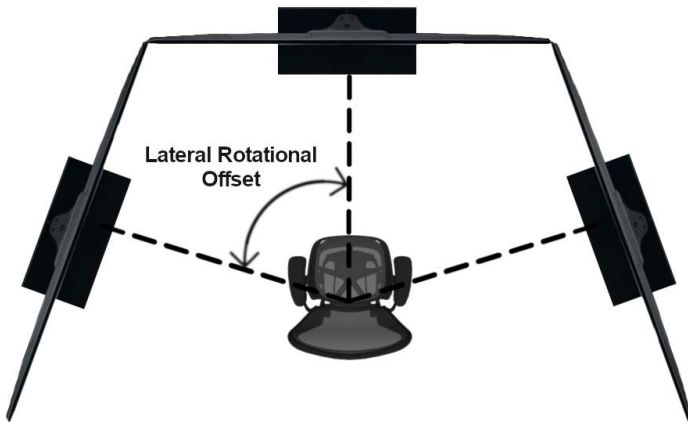
Once your screens are set up in windows, open X-Plane 11 and select “Settings” and then “Graphics”.



When using multiple screens for X-Plane 11, you will need to configure the Field of View and Lateral Rotational Offset for those screens.



The Field of View option will adjust how much of your surroundings a screen will display. Set each display to the same degree. Typically 60°-70° works best for surround displays.



The Lateral Rotational Offset will adjust the direction which the image is pointed. This setting is used only on the left and right screens. The value should match the degree set for your lateral field of view, with the left screen being negative and the right screen being positive.

For example: If you set your Field of View to 60° for your three screens, the Lateral Rotational Offset will be:

**-60** for the left screen

**0** for the center screen

**60** for the right screen



## Disabling FlightPanel displays in X-Plane 11

X-Plane 11 may attempt to display onto the two FlightPanel displays instead of your main sim display.

- In the X-Plane 11 graphics settings, scroll through the detected displays and find the two FlightPanel displays.
- Change the “Monitor Usage” setting to “Unused”

## Mapping buttons and knobs in X-Plane 11

The switches and knobs are fully customizable for your simulator. Each button and knob will need to be individually assigned to a function in the X-Plane 11 settings.

- Open “Settings” in X-Plane 11
- Select the “Keyboard” tab
- Search for your desired function
- If that function is already assigned to a key, press the (-) button to remove the key from that function.
- Press the (+) button to begin detecting new key for that function
- Once X-Plane has begun searching for a new key, use the desired button or knob for the function you wish to assign it to.
  - Knobs use two directions, so for functions which increment or decrement, you will need to assign each direction of the knob to the corresponding function.
- The bottom four knobs on the FlightPanel CLASSIC and PRO also have push button functionality.
- The red Mode Switch allows you to assign two completely unique sets of actions for all of your buttons and knobs.

## Adjusting the Flight Camera

The default view when you first load into a flight can be off from a realistic flying position, depending on which aircraft you choose.

- Use the arrow keys and Vertical Rotational Offset to position your view more to the right and upwards in the cockpit, so that the front cowling is just visible through the windows.
- This view can be saved by pressing CTRL+(num 0) in X-Plane 11, or by assigning the “Memorize 3-D cockpit location #1” function to a button on your FlightPanel.
- When loading into a new flight, you can easily access the saved view by pressing (num 0) on your keyboard, or by assigning the “Go to save 3-D cockpit location #1” function to a button on your FlightPanel.
- Views are saved per airplane in X-Plane 11, so you will need to set your desired view in each plane.

## Installing and Using PanelBuilder

A USB drive with your license for PanelBuilder will be included with your FlightPanel if you ordered one from us. The USB drive has the installation file and license key for PanelBuilder built into it, so it is recommended to simply leave the USB drive plugged into your PC.

- Install Analog PanelBuilder from the USB drive or download it from the SimPlugins website.
- (Optional) If you have purchased the EFIS Pack for PanelBuilder, install it second.
- Run PanelBuilder
- In the “Operation” tab select “Edit Panel”
  - Under the “Background Size & Position” section select “No Background”
  - Select “OK”

## Adding or Removing Instruments and Gauges

- In the “Building” tab select “Add Instrument”
  - You can sort through the available instruments using the “Instrument Type” selection on the bottom right
  - Select the instruments you would like to add to your panel using the checkboxes, and add them by selecting “Add checked instruments”
- To remove an instrument, click the instrument from the main PanelBuilder page and select “Remove” under the “Building” tab.

## Moving Instruments to the Correct Position

**It is VERY important that any time you reboot your PC you have all of your displays powered on, otherwise your instruments will not load in properly.**

- Once you have selected all of your desired instruments, select “Start” from the “Operation” tab
- After your instruments have loaded onto your screen, click and drag each one into place on your FlightPanel screens.
  - You may grow and shrink each instrument using the scroll wheel on your mouse
  - Once you have your instrument in place, you can lock it in place by right-clicking the instrument and selecting “Lock”. This will keep it from being unintentionally moved or resized.
  - Certain instruments can be customized. Right-click on an instrument and select “Settings” to customize an instrument
- Pressing “Start” in PanelBuilder will minimize the PanelBuilder window to show all of your instruments.
  - To return to the PanelBuilder window, click the PanelBuilder icon on your Windows Taskbar. Be sure to select PanelBuilder from the Windows Taskbar and not from your Windows Desktop, as this will only launch a new PanelBuilder window.
  - Bringing PanelBuilder back up from the Windows Taskbar will close the instruments that were running.

## Recommended PC Hardware:

Good	Better	Best
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### Graphics Card (GPU)

Nvidia	AMD
GTX 1660	
GTX 1660 Super	
GTX 1660 Ti	Vega 56
GTX 1080	Vega 64
GTX 1080 Ti	Radeon RX5700
RTX 2060	Radeon VII
RTX 2060 Super	Radeon RX5700 XT
RTX 2070	
RTX 2070 Super	
RTX 2080	
RTX 2080 Super	
RTX 2080 Ti	
RTX 3070	Radeon RX 6800
RTX 3080	Radeon RX 6800 XT
RTX 3090	Radeon RX 6900XT

## Processor (CPU)

Intel	AMD
Core i5-8000 Series or newer	Ryzen 2000 Series
Core i7-7000 Series or newer	Ryzen 3000 Series
Core i9-9900K or newer	Ryzen 5000 Series

- **32GB of DDR4 Memory (RAM)**
- **500GB+ NVMe or SATA SSD**
- **5x USB3.0 Ports**

## Drivers, Downloads, and More

For customers who are using their own computer systems, you will need to install a few drivers to get everything up and running.

<a href="#">X-Plane Plug-in for Logitech Devices</a>	<p>Allows X-Plane 11 to communicate with any Logitech Flight Panel components.</p>
<a href="#">Microsoft Flight Simulator Plug-in for Logitech Devices</a>	<p>Allows Microsoft Flight Simulator to communicate with any Logitech Flight Panel components.</p>
<a href="#">Logitech Flight Panel Test Software (Optional)</a>	<p>An optional suite of test programs for Logitech Flight Panel components.</p>
<p><a href="#">USB Enhanced Power Management Disabler for Logitech Flight Panel components (Optional)</a></p> <p>(Copyright 2020 Uraster GmbH)</p>	<p>An optional third-party software tool to disable Windows Enhanced Power Manager for any and all plugged in Logitech Flight Panel components. This tool is helpful if the screens on your Logitech components don't light up.</p> <p>Extract the file from the ZIP folder, <b>run the file as an administrator</b>, and press Enter to begin.</p> <p>AllSportSystems is not the author of this third-party software tool. <b><u>Use at your own risk.</u></b></p>
<p><a href="#">RealSimGear GPS Plugins for X-Plane 11</a></p>	<p>Required only for FlightPanels that use any RealSimGear GPS devices with X-Plane 11.</p>
<p><a href="#">FlyWithLua Script and Guide for Dual Yoke Control</a></p>	<p>For users who want to use two separate yokes and rudder pedals in X-Plane 11, this guide can walk you through the steps of installing the proper plugins and configuring your controls.</p> <p>AllSportSystems is not the author of this third-party software tool. <b><u>Use at your own risk.</u></b></p>
<p><a href="#">FluWithLua Plugin for X-Plane 11 (required for Dual Yoke control)</a></p>	<p>This plugin is what runs the Dual-Yoke script. Be sure to follow the instructions the author provides.</p> <p>AllSportSystems is not the author of this third-party software tool. <b><u>Use at your own risk.</u></b></p>