

FlightNovo G5 simulator instrument

User guide · draft

Prepared 20 September 2026 against software version **1.1.4**. This draft describes the FlightNovo ESP32-P4 simulator instrument. Final hardware specifications and public software releases are still being prepared.

Contact: info@flightnovo.com

Website and downloads: flightnovo.com · flightnovo.com/downloads.html

For flight simulation only. This independent simulator accessory is not certified aircraft equipment. Do not use it for real-world flight, navigation or aircraft control. It is not affiliated with or endorsed by Garmin, Microsoft, Asobo Studio or Laminar Research.

1. Meet your instrument

One instrument contains two display pages:

- **PFD — Primary Flight Display:** attitude, airspeed, altitude, vertical speed, heading and available flight-director, autopilot and navigation indications.
- **HSI — Horizontal Situation Indicator:** compass, selected heading, available GPS/VOR/localizer guidance, course information and optional bearing pointers.

A rotary knob with a push action controls the menus and selected values. A separate power button controls display power and brightness. The instrument receives simulator data through Ethernet. It does not measure real-world attitude, airspeed or position.

The current development hardware uses a Waveshare ESP32-P4-ETH with a 3.5-inch DSI display at 640 × 480 pixels. Final enclosure dimensions, panel cutout, mounting method, power connector, voltage/current rating and supplied accessories must be confirmed for the unit being sold.

Simulator compatibility

Simulator	Connection	Current scope
X-Plane	Ethernet to the simulator LAN; G5 companion plugin on the simulator PC	Linux and Windows plugin builds; customer instructions target X-Plane 12
Microsoft Flight Simulator 2024	Ethernet to the simulator LAN; G5 Bridge on the Windows simulator PC	Current Windows installer targets MSFS 2024, Windows 10/11 64-bit; current flight-readiness logic requires MSFS 2024 SU5 or newer

MSFS 2020 and macOS are not claimed by this guide. Aircraft-specific avionics and autopilot implementations can expose different information; confirm your intended aircraft with FlightNovo.

2. Before connecting

Use the power supply and mounting instructions approved for your finished unit. Ethernet provides the simulator connection; do not assume that the unit supports Power over Ethernet. The development documentation does not establish a finished-product power rating or mounting specification.

Connect the instrument and simulator computer to the same trusted local network. The instrument uses wired Ethernet. A computer connected by Wi-Fi must still be on the same LAN; guest networks often prevent device discovery. An ordinary router with DHCP normally supplies the instrument's address automatically.

Keep the instrument accessible during setup so you can operate both controls. Install simulator companion software only from FlightNovo's confirmed release download.

3. Connect to X-Plane

1. Close X-Plane.
2. Install the G5 companion plugin using FlightNovo's installer. On Windows, the combined G5 simulator installer offers an X-Plane option. On Linux, use the native G5 X-Plane plugin installer and select the X-Plane installation folder.
3. For a manual installation, extract the supplied G5_Menu_Bridge folder into X-Plane 12/Resources/plugins/. The platform plugin belongs inside G5_Menu_Bridge/64/. Keep only one copy of this plugin.
4. Connect the instrument's Ethernet cable and apply its approved power supply.
5. Start X-Plane and load a flight. X-Plane is the instrument's default simulator source. The instrument discovers the simulator over the LAN.
6. If changing from MSFS, select **Configuration Mode > Product Settings > Simulator > X-Plane**, then **Exit Configuration Mode > Yes** to save and restart. Section 6 explains how to enter Configuration Mode.

The X-Plane **Plugins > G5** menu provides connection information. The companion also supplies aircraft reference-speed information where the aircraft makes it available.

4. Connect to MSFS 2024

1. On the Windows simulator computer, run the confirmed G5-Simulator-Installer-....-Setup.exe release and select **Microsoft Flight Simulator**.
2. Leave the recommended **MSFS 2024 aircraft reference-speed companion** selected. Setup installs the required Microsoft Visual C++ runtime if necessary; Windows may ask for administrator approval for that prerequisite.
3. Restart MSFS if it was open during installation so it loads the new companion package.
4. Open **G5 Bridge** from the Start menu. Its bridge starts automatically. You can enable **Run at startup** for your Windows account.
5. On the instrument, choose **Configuration Mode > Product Settings > Simulator > MSFS**, then **Exit Configuration Mode > Yes**.
6. Load a flight in MSFS. The bridge automatically discovers instruments on the same LAN and reports their connection status.

You do not need to install the developer SDK or edit SimConnect configuration files. The bridge and simulator can be started in either order. One bridge can communicate with up to six instruments. Closing its main window leaves it running in the notification area; choose **Exit** to stop it completely.

5. Everyday controls

Action	Result
Press the knob	Open the page menu, select an item or accept an edited value
Turn the knob in a menu	Move the selection; keep turning to reveal items beyond the visible row
Turn the knob on the PFD with the menu closed	Adjust simulator barometric pressure
Turn the knob on the HSI with the menu closed	Adjust selected heading, or selected track when the active mode uses track
Hold the HSI knob for at least half a second with the menu closed	Synchronise the selected bug to current heading or track
Briefly press the power button	Open the brightness menu
Hold the power button for five seconds	Complete the shutdown countdown and blank the display
Press the power button while the display is off	Wake the display

Change page: press the knob and select **HSI** from the PFD menu, or **PFD** from the HSI menu. This changes the current page without changing the saved startup page.

Set heading or altitude: use the matching page-menu item, turn the knob and press to accept. Navigation-dependent **Course** or **OBS** appears on the HSI when the active source makes that control available. Use the simulator's navigator to establish the required source and flight plan.

Brightness: briefly press the power button, turn the knob to adjust the level and press the knob to close the menu. A further power-button press in this menu selects **Auto**. Automatic brightness follows available simulator lighting information. On the current display, brightness changes dim the rendered image; they do not provide physical backlight power control.

The display's battery indications model simulator electrical behaviour. They do **not** establish that your physical product contains a backup battery. Switching off the simulated aircraft's electrical supply can produce an **External Power Lost** countdown. Operating a control dismisses that countdown; if it expires, the display blanks. Software shutdown also leaves the electronics electrically powered.

6. Configuration Mode

1. Hold the power button for five seconds and wait until the display has finished fading to black.
2. Release both controls completely.
3. Hold the power button and the knob push-button together for one second.
4. Release both controls, then turn and press the knob to navigate.

Useful settings include:

Location	Purpose
Product Settings > Simulator	Select X-Plane or MSFS
Display > Powerup Page	Choose PFD or HSI for the next startup
Units	Choose displayed measurement units
Backlight	Set default brightness behaviour and automatic limits
Product Settings > Encoder Acceleration	Choose how quickly numeric values change during faster knob rotation
Device Information > Diagnostics	View version, address and connection health

Changes are staged until you select **Exit Configuration Mode > Yes**. The instrument saves them and restarts. Gray hardware-related entries may be visible but unsupported on the simulator product.

Do not confuse this procedure with applying physical power while both buttons are held: that enters the separate factory-recovery flow described below.

7. Demonstrate without a simulator

Select the page you want to show, press the knob and choose **Setup > Start Demo**. The instrument runs a repeating, approximately two-minute flight demonstration covering departure, climb, cruise, navigation and approach. It also gives a brief menu tour.

The demo uses synthetic data and needs no running simulator. Turn the knob or press either control to stop it and return to the normal page menu. Demo mode does not send flight-control changes to the simulator.

For an exhibition, confirm the approved portable power arrangement in advance, test both pages and carry the instrument securely. The on-screen simulated battery is not a portable power source.

8. Updates and recovery

Update availability depends on the release service supplied with your instrument. Save any configuration changes before entering **Configuration Mode > Product Settings > Firmware Update**.

Select **Check Now**. If a compatible update is available, use **Download**, then the confirmed **Install & Restart** action. Keep the instrument connected to stable power throughout. If update authentication or download is unavailable, contact FlightNovo for the supported release method.

After a successful update, **Roll Back to Previous Version** can be available while the prior firmware remains stored on the unit. Starting another download replaces that retained update slot, so a previous rollback option may disappear.

For FlightNovo-guided factory recovery, remove physical power. Hold the power button and knob push-button, reapply power and hold both for two seconds. Release both. Choose **Restore Factory**, then **Yes, Restore** only if instructed. This boots the factory image stored on the unit; it does not download firmware. Contact FlightNovo before USB reflashing or opening a finished enclosure.

9. Troubleshooting

Symptom	Check
No live indications or a white !	Confirm the simulator has loaded a flight, the correct simulator is selected, Ethernet is connected and both devices are on the same LAN. Read any available Messages .
X-Plane is not discovered	Check the plugin installation and Plugins > G5 status. Guest Wi-Fi, client isolation and multicast filtering can block discovery.
MSFS instrument is not found	Open G5 Bridge and read simulator/unit status. Check the LAN and instrument source selection.
Missing MSFS reference speeds	Restart MSFS after installing the companion; review MSFS V-speeds in the bridge. Some aircraft do not publish every speed.
A source or control differs from the simulator cockpit	Record the exact aircraft, navigator and simulator version. Custom aircraft can use different interfaces.
Display goes dark after aircraft power is turned off	Check the simulated power-loss countdown and simulated battery state; restore simulator electrical power if needed.
Update cannot be checked	Record the firmware version and displayed error; ask FlightNovo for the supported installer or update route.

For support, provide firmware version, simulator version, operating system, aircraft, bridge/plugin version, a photo of the indication and the steps that reproduce the problem. The instrument's diagnostics show network and stream health. G5 Bridge logs are under %LOCALAPPDATA%\G5\MSFS Bridge\Logs; X-Plane has its own Log.txt.

10. Support and release status

For product enquiries and support, email info@flightnovo.com. Setup resources and release availability are published at flightnovo.com/downloads.html.

This guide remains a draft. The following details will be confirmed with the finished product:

- Supplied power unit, electrical rating, connector and any supported portable-power arrangement.
- Enclosure dimensions, panel cutout, fixing method and included accessories.
- Released firmware and matching installers, tested aircraft and final update instructions.

Do not use development-board dimensions or an assumed power rating to install a finished unit. Obtain the confirmed mounting and power specifications from FlightNovo before installation. Public companion downloads and the production update service are being prepared; contact FlightNovo for the supported software for your instrument.

This is original FlightNovo product documentation. It is not a reproduction of a Garmin operating manual.