Autopilot Controls

Version 1.0

User Manual

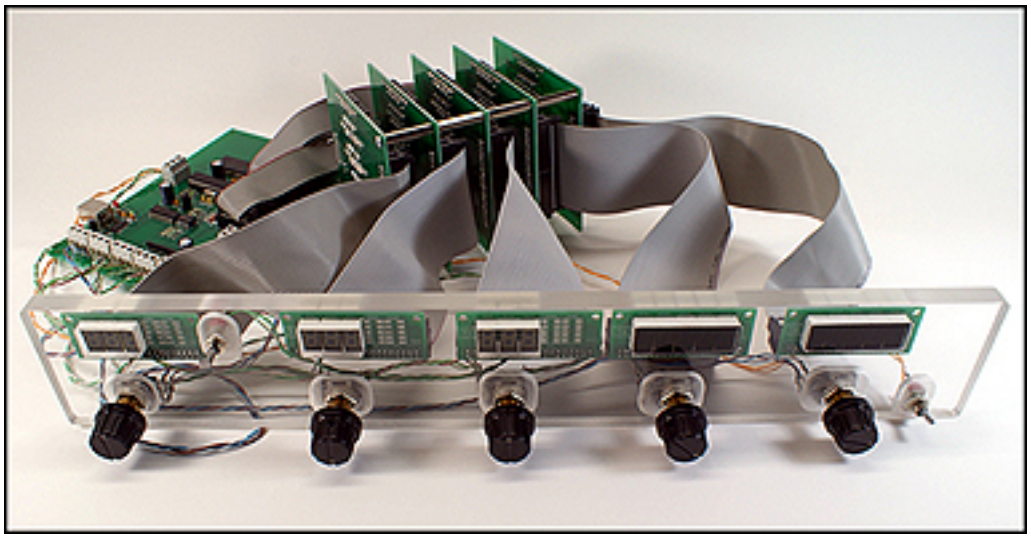


Table of Contents

Autopilot Controls Program

Your **Autopilot Controls PCB** needs to be connected and turned on, then you can run the **Autopilot Controls** program.

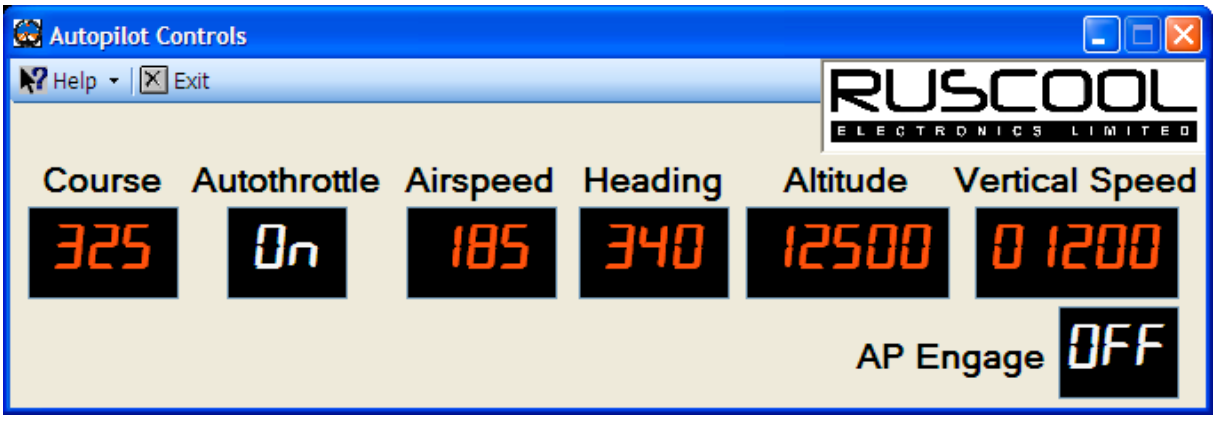
The **Autopilot Controls** program can be running before starting Flight Simulator as it will wait for a connection to the Flight Simulator software before the program continues.

The **Autopilot Controls** program starts minimised on the taskbar, because while you are flying your simulator, it is not normally necessary to see this information. You can bring it back to full size if you want to view the information for any reason. Make sure that when you have finished viewing the data that the program is **minimised** again, not closed, so that the program remains running.

The following FSUIPC offsets are used in the **Autopilot Controls** program:

AP Course	0C4E
AP Airspeed	07E2
AP Heading	07CC
AP Altitude	07D4
AP Vertical Speed	07F2
Autopilot Engage Switch	07BC
Autothrottle Switch	0810

As you turn the encoders, or use the switches, the appropriate controls in Flight Simulator will be changed and the application screen shown below will also be updated. If you change the controls manually in Flight Simulator, the changes will also be reflected in the application.



We have made this screen have a similar sort of layout to a Boeing airliner Autopilot panel, but because it will be hidden away (minimised) most of the time, it is really just used as an indicator to show you that everything is working when you first set it up.
[Boeing call their complete autopilot system a Mode Control Panel (MCP)]

It can be used for any type of aircraft that has an operational autopilot. Some smaller aircraft autopilot systems are not fully implemented of course, so only some functions will work.

A switch connected to the Button 1 terminals will be the Autopilot ON/OFF switch, and a switch connected to the Button 2 terminals will be the Autothrottle ON/OFF switch. (These are not push-button switches)

Rotating the encoders slowly will give fine control of the settings, and rotating them medium speed will alter the settings in larger increments (ie. to alter the Altitude from 1000 to 25000). Slowing down the rotation, or pausing momentarily, will revert to fine control again when you are close to the setting you require.

It is not recommended to spin the encoder rapidly, as encoder pulses will be missed and the setting will only change slowly.

Prerequisites

- A registered version of FSUIPC must be installed within the Flight Simulator software.
- The FTDI driver must be installed to ensure the program can communicate with the hardware. The FTDI driver files can be found in the application directory.
- Ensure the board is connected to a power supply as well as the computer via a USB cable and, of course, turned on.

Installing the FTDI Driver

(Only required the first time the hardware is used on this PC)

Once the **Autopilot Controls** software has been installed, plug a USB cable between the **Autopilot Controls PCB** and the computer, then power up the board.

The Found New Hardware Wizard will automatically start.

- Connect to Windows Update . . . , select 'No, not this time', then click Next
- Select 'Install from list or specific location', then click Next
- Click on the Browse button. Select the install application directory, FTDI drivers and click Finish

A second Found New Hardware Wizard will then start.

- Connect to Windows Update . . . , select 'No, not this time', then click Next
- Select 'Install from list or specific location', then click Next
- Accept the default location and click Finish

You should then see a message stating "Your new hardware is setup and ready to use"

The **Autopilot Controls** program can now be run. If you receive an error, you will need to power down the **Autopilot Controls PCB** for about ten seconds before turning the power back on and restarting the **Autopilot Controls** program.