B737MAX Cockpit suite manual

1. Introduction

This software aims to be the best 737MAX software suite for both home simulation flyers and commercial cockpit builders and operators. It is not intended for education and pilot training at the moment.

It offers accurate rendering of the flight deck displays, MCP+EFIS panels and CDU panel for mouse operation or touchscreen as well as hardware drivers for most common devices. The FMC uses accurate performance data and updatable navigation database. Last but not least, a web instructor station (IOS) is provided for complete simulator control via tablet.

2. Licences

We offer demo licence for your trial offering complete functionality with 15min time limit. After that, you can restart the program and continue your testing.

If you are satisfied with our product, we offer 2 separate licenses to buy on our website cockpitmax.com/software. The licences differ in intended use, flight model and level of support.

HOME	COMMERCIAL
- All components - Unlimited flight time - Configuration save - Limited support (email) - No flight model - Home builder not making profit	- All components - Unlimited flight time - Configuration save - Full support (email+phone) - Complete flight model - Commercial operators (schools, entertainment, exhibition)

3. Flight model compatibility

For the commercial customers we offer our own flight model with complete functional exterior model, personally tuned flightmodel with 737 pilots and custom set of sounds. This combo also offers the best autopilot performance.

Otherwise this software should be compatible with each twin engine aircraft in FSX/Prepar3D for the displays. For the functioning autopilot it is neccessary to use an aircraft with the default autopilot, so this software is not compatible with advanced airplanes like PMDG or iFly (but can be still used as just the displays).
You can use the demo mode to properly test the functionality with your favourite aircraft. Let us know if you would like to see support also for other flight models.

4. Installation
4.1. Prerequisites

Our cockpit suite use **Simconnect** library for communication with the simulation software (either Microsoft Flight Simulator X (with SP2 or Acceleration expansion pack) or Lockheed Martin Prepar3D v3-v4). Please make sure to install compatible simconnect client first.

4.2. Installation
4.2.1. B737MAX Cockpit suite

First please download appropriate version for your flight simulator from our website cockpitmax.com/download/.

Then run the provided installer, select the installation location and location of FSX / Prepar3D and follow instructions of the installer.

4.2.2. Navigation database

Our B737MAX Cockpit suite is compatible with Navigraph FMC database for the SID/STARs and other navigational data. For the home use you need a separate licence, for the commercial licence we provide the database as part of the licence.

To download the data go to the Navigraph's website and select *vasFMC Flight Management - native***. After downloading the zip file extract it anywhere (*C:\Program Files\CockpitMax\data\NavData* is preferred). Then you need to provide the path to the unpacked files to the B737MAX Cockpit suite config file (located in <Documents>/B737MAX/Config.txt). Value which needs to be changed is called **navDataPath.**

4.2.3. Local airport database

Our B737MAX Cockpit suite uses the FSX / Prepar3D scenery files to build a primary database of airports, runways, ILS frequency etc. This way it always allows you to select the appropriate airports and runways in IOS and FMC even with addon scenery installed.

The database is build the first time this CockpitMax SW is started if correct path is provided in the config file variable **navDataPathPrimary**. This value is automatically set by the installer. If you do not set the path during installation you can do it manually any time later and it should point to the installation path for the FSX / Prepar3D. If you want to rebuild the primary database (after adding some scenery) just delete the *bin.nd* file from the **navDataPath** folder.

4.3. Licence activation

The program defaults to DEMO mode (15min run, full functionality). You can use this time to evaluate the functionality. We provide the flightmodel only with the commercial licence as it is hard to protect and we want to keep it proprietary. Our flightmodel has improved flight dynamics (tuned by real 737MAX pilots) and sounds and is fully compatible with FSX, P3D v3 and v4.

If you decide to purchase the licence contact us at *info@cockpitmax.com* to proceed with the payment and activation.

5. Setup

5.1. Single PC vs Multi PC
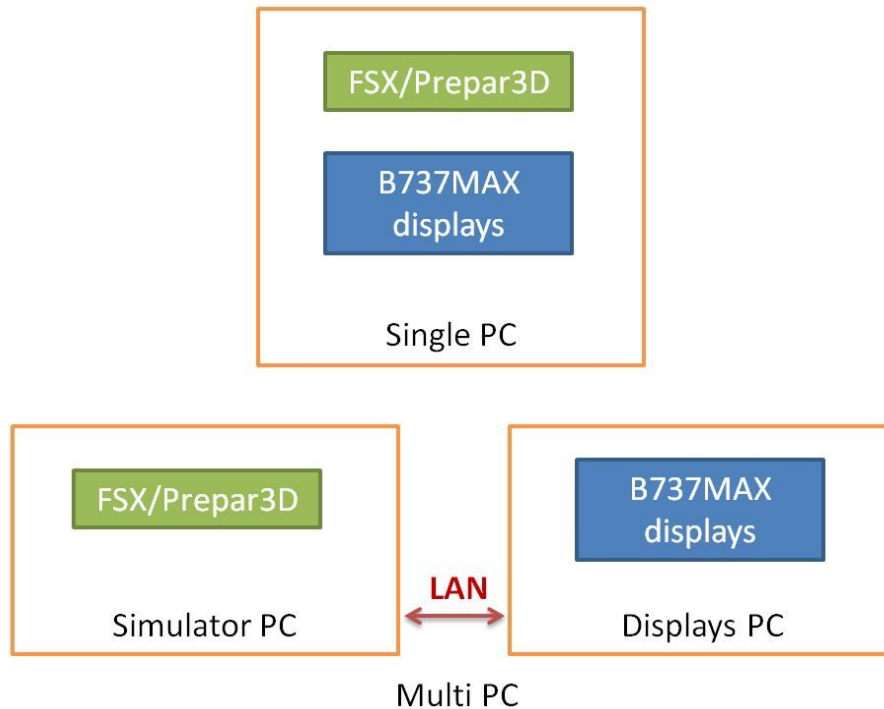
5.1.1. Single PC

If the displays are run from the same PC that runs also FSX/Prepar3D, then it is a single configuration. There is no need for any advanced setup. Please just follow the installation guide at the beginning of this file.

5.1.2. Multi PC

Multi PC configuration means that FSX/Prepar3D runs on different computer then the display SW, as it is often needed to provide both power and display outputs for many screens/projectors. When using this setup you must properly install and configure the Simconnect server and client.

- Install FSX/Prepar3D and appropriate Simconnect on the simulator PC

- Install B737MAX Cockpit suite on the display PC

- Connect the computers to the same network and make sure, that they can see each other (create common Homegroup)

- Share the whole FSX/Prepar3D install folder on simulator PC for the display PC (guide here)

- Install and configure Simconnect on both PCs (guide [here](#))
- Change the B737MAX Cockpit suite *navDataPathPrimary* path in the config file to the folder address of previously shared FSX/Prepar3D folder
- Start FSX/Prepar3D and B737MAX Cockpit suite and enjoy the flight

5.2. Displays
5.2.1. Layout

The layout (which displays are shown) is set also in the config file in the section *Windows*. First there is a setup for the whole window, we strongly advise to have a one giant window across whole monitor or all monitors. You can select the *width* and *height* of the window as well as *x(left)* and *y(top)* offset in pixels. You can also select if you want the frames do be displayed (useful for monitor cockpit) or hidden (cockpit with display frames installed) by the option *drawFrame* in the configuration file.

There is a section in the configuration file for the individual flight displays. Each has its type, *x(left)* and *y(top)* offset with *width* and *height.* For the size and offset it is easier to set visually with the program running as will be described later in this document. The default installed layout contains all displays so that user can just delete those that are not needed.

List of available display types:

CODU - Captain primary flight display (most left)

CIDU - Captain navigational display (left)

FOIDU - First officer primary flight display (most right)

FOODU - First officer navigational display (right)

CECP - Captain EFIS panel

FOECP - First officer EFIS panel

MCP - MCP panel

CCDU - Captain CDU (FMS)

FOCDU - First officer CDU (FMS)

ISFD - Integrated standby flight display (center)

GEAR - Gear indicator

STAB_TRIM - Pitch trim indicator

5.2.2. Size and position

After selecting the layout we can start the program by clicking the desktop shortcut (CockpitMax). After starting we will use keyboard to setup the size and position of individual displays:

F1 - go through the displays (selected display is blinking red)
F2 - switch between size and position mode (selected mode is displayed in the bottom left corner)
Left, Right, Up, Down - position the display as needed in position mode
Up, Down - change size in scale mode

The selected size and position of all displays is automatically saved in the config file.

5.3.   Other settings

There are several other settings provided in the config file:

vSync	Select 1 to enable vsync or 0 to disable vsync. If your system is not able to maintain stable FPS you can also try selecting 2 to lower the load at the cost of lower framerate.
sound	Select 1 to enable sounds or 0 to disable sounds.
TCASsound	Select 1 to enable TCAS alerts or 0 to disable sounds TCAS alerts.
limitFPS	Limits the simulation framerate to certain value. Use this to limit the load for your CPU if needed. By default this value is set to 100. (This value is not related to visual framerate. That should be adjusted by vSync value).
showFPS	Displays the framerate in the bottom left corner. The first number is the rendering frame rate the second one is simulation frame rate.
mcpComPort	The COM port number for CPFlight MCP+EFIS. For more information go to the hardware part of this manual.
cduComPort	The COM port number for Flyengravity CDU. For more information go to the hardware part of this manual.
IOSServerPort	The port number for the web IOS. For more information go to the IOS part of this manual.

FMCinitialized	Select 1 to start with the FMC filled up with predefined values (weights etc.) or 0 to start clean.
navDataPathPrimary	Path to the FSX/Prepar3D installation folder.
navDataPath	Path to the Navigraph Navigational database folder.

6. Hardware

6.1.1. Flight controls

For the assignment of flight controls (yoke, rudder) and throttle quadrant (throttle, flaps, speed brakes, parking brake etc.) use either direct assingment in FSX/Prepar3D settings or FSUIPC. B737MAX software reads the values of all axes and displays them appropriately.

6.1.2. Pedestal panels

We advise to use the provided drivers for the pedestal panels (mainly radios) to communicate directly to FSX/Prepar3D. B737MAX software reads the values and displays them appropriately.

6.1.3. CPFlight MCP+EFIS

CPFlight MCP and EFIS is fully supported as the best and most used MCP panel. Install it based on CPFlight manual, connect it via USB and then change the COM port value in the B737MAX Cockpit suite config file (*mcpComPort*).

6.1.4. Flyengravity CDU v1

Flyengravity CDU is fully supported as the best and most used CDU panel. Install it based on manual, connect it via USB and then change the COM port value in the B737MAX Cockpit suite config file (cduComPort).

6.1.5. Pokeys IO card

PoKeys57U is fully supported as the preferred IO card for the simulator. Install it based on manual, connect it via USB, setup the B737MAX Cockpit suite config file and you are good to go.
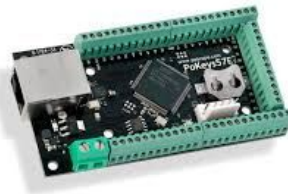
In the config file you have several options for each pin:

- **mode** - electrical mode of the pin, can have 6 values:
    - *input* - digital input (button)
    - *inputInverted* - digital input with inverted logic (button)
    - *output* - digital output (led)
    - *outputInverted* - digital output with inverted logic(led)
    - *analogInput* - analog input (axe)

○ *analogOutput* - analog output (light)
○ *none* - if nothing is connected

● **functionality** - functional mapping to the action in the simulation
  ○ *gearUp* - digital input (button) for Gear Up command
  ○ *gearDown* - digital input (button) for Gear Down command

The rest of the needed functionality can be added on request.

6.1.6. Other HW

Do you need support for other HW even from different manufacturer? Let us know at info@cockpitmax.com.

7. Instructor station - IOS

The B737MAX Cockpit suite contains a handy web based **Instructor Station.** The complete simulator can be operated from within this station from anywhere on the same network (even wireless on a tablet or phone).

Functionality:
● Position
● Pushback
● Weather and visibility
● Time setting
● Failures
● Fuel and payload
● Simulator control

To access the IOS you need to be on the same network as the the display computer (wired or wireless) with your device. Than you can open the web browser and type http://192.168.1.150:737/ in the address bar. You must change the IP address for the IP of the computer running the B737MAX Cockpit suite and port number if changed in the config file. If you open the browser on the same PC as the B737MAX you can use http://localhost:737/.
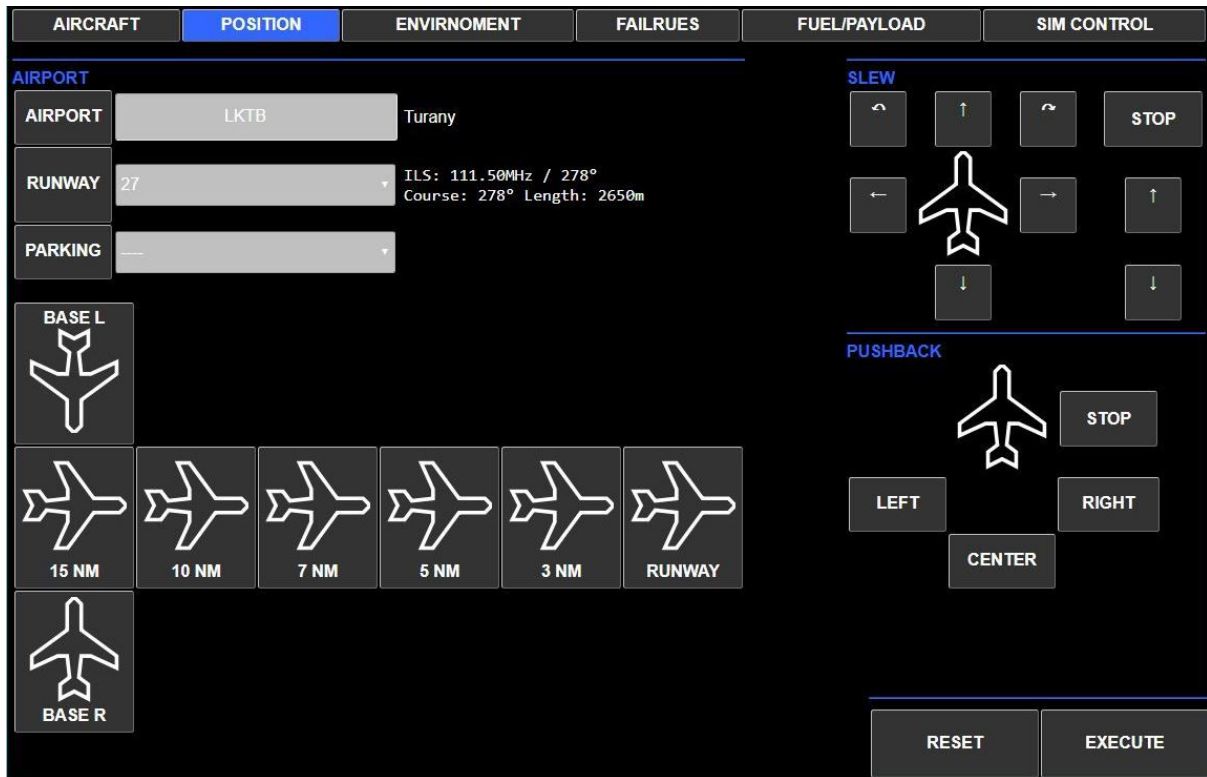
8. Troubleshooting

If you need any help with the installation or setup just contact us at info@cockpitmax.com and we will assist you.